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Report: Fording River Operations Local Aquatic Effects Monitoring Program (LAEMP) 2022 Report

Overview: This report monitors aquatic conditions related to ongoing mining and the commissioning of the FRO-South (FRO-S) Active Water Treatment Facility (AWTF); existing conditions in relation to the future FRO-North (FRO-N) Saturated Rock Fill (SRF) are also monitored.

This report was prepared for Teck by Minnow Environmental Inc and Lotic Environmental Ltd.

For More Information

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



**Fording River Operations
Local Aquatic Effects Monitoring
Program (LAEMP) 2022 Report**

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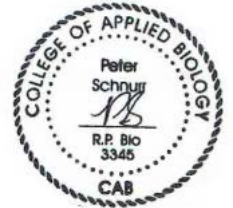
Lotic Environmental
Cranbrook, British Columbia

May 2023



Fording River Operation Local Aquatic Effects Monitoring Program 2022 Report

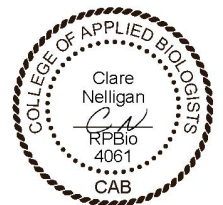
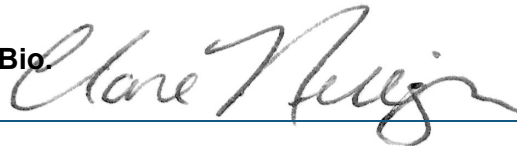
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EXECUTIVE SUMMARY

The Fording River Operation local aquatic effects monitoring program (FRO LAEMP) was developed to monitor aquatic conditions related to ongoing mining and the commissioning of the FRO-South (FRO-S) active water treatment facility (AWTF) and is a requirement in Permit 107517. Existing conditions in relation to the future FRO-North (FRO-N) Saturated Rock Fill (SRF) are also monitored under the FRO LAEMP. The primary focus of the FRO LAEMP is to monitor local aquatic ecosystem condition, particularly as it relates to conditions post-commissioning of water treatment compared to conditions prior to commissioning. This report includes FRO LAEMP monitoring data up to the end of the 2022 calendar year to evaluate the study questions detailed below.

Study Question #1 (Are nitrate concentrations in the study area changing, and do they have the potential for adverse effects on biota?) was evaluated through monitoring of water chemistry in relation to effects concentrations, benthic invertebrate community (BIC) data, and chronic toxicity. While nitrate concentrations have increased over time throughout the FRO LAEMP study area, some decreases have been observed in the lower study area related to FRO-S AWTF operation, although not to concentrations lower than base years for comparison (2012). Evidence for direct effects of nitrate on biota, however, is limited and interpretation is confounded by the covariation of multiple mine-related constituents with nitrate and a change in habitat throughout the study area concurrent with changes in BIC structure. Nitrate concentrations were below concentrations expected to cause effects in sensitive species in the majority of samples throughout the study area, and 2022 chronic toxicity studies did not identify any effects that could be attributed to nitrate. As treatment continues to be implemented in the FRO LAEMP study area, nitrate concentrations are expected to decrease, thus the potential for adverse effects to biota is expected to remain low.

Study Question #2 (Is water treatment affecting biological productivity downstream in the Fording River?) was evaluated through monitoring of aqueous nutrient concentrations (i.e., total phosphorus and orthophosphate), periphyton presence and thickness, and benthic invertebrate biomass and density. An increase in aqueous phosphorus concentrations was identified post-commissioning of the FRO-S AWTF directly downstream of the outfall compared to upstream and pre-commissioning conditions but decreased with distance downstream. Benthic invertebrate productivity was higher immediately downstream of the outfall, but remained within the range observed throughout the study area, and no evidence of increased periphyton growth was observed. An increase in secondary biological (benthic invertebrate) productivity downstream of the FRO-S AWTF outfall location may be attributed to an increase in treatment-related phosphorus concentrations, but the effect was spatially limited.



Study Question #3 (Are benthic invertebrate tissue selenium concentrations downstream of FRO water treatment consistent with predictions, and if not, why?) was evaluated through monitoring of aqueous selenium concentrations, including selenium speciation, and composite-taxa benthic invertebrate tissue selenium concentrations throughout the study area. Total and dissolved selenium concentrations decreased at most mainstem FRO LAEMP monitoring areas downstream of the FRO-S AWTF outfall compared to the pre-commissioning period and immediately upstream, however, there was a qualitative increase in organoselenium concentrations downstream of treatment that decreased with distance from the outfall until it was no longer detected ~2 km downstream. Benthic invertebrate tissue selenium concentrations have remained unchanged at all monitoring areas downstream of the FRO-S AWTF outfall compared to upstream and pre-commissioning, and concentrations have been consistent with predictions throughout the study area based on aqueous selenium concentrations. Monitoring under the FRO LAEMP has indicated that benthic invertebrate tissue selenium concentrations downstream of treatment (and throughout the study area) were consistent with predictions after the first year of FRO-S AWTF commissioning.

Study Question #4 (How is temperature changing over time in the FRO LAEMP study area? 4a. Is water temperature measurably different [greater than 1 degree Celsius] downstream of the AWTF and/or SRF effluent discharge relative to the upstream baseline condition? 4b. If changes in water temperature are observed, are these changes attributed to mitigations (i.e., AWTF and/or SRF?) was evaluated through monitoring of water temperature data collected from loggers located throughout the study area. With few exceptions, water temperatures have remained stable throughout the FRO LAEMP study area since 2017. Minor differences in water temperature were observed when comparing areas immediately downstream and upstream of treatment pre- and post-commissioning, but temperature differences were rarely (i.e., only 3 of 363 days post commissioning) greater than the 1°C threshold indicating minimal influence of FRO-S AWTF operation on water temperatures in the receiving environment downstream. Monitoring under the FRO LAEMP has indicated that monthly mean water temperatures have increased slightly at three of twelve mine-exposed stations in the study area but increases were not related to the FRO-S AWTF.

Study Question #5 (What are the factors contributing to the variations in benthic invertebrate communities in the FRO LAEMP study area?) was evaluated through monitoring of BIC endpoints relative to water quality and habitat variables (e.g., calcite, substrate size, water depth, flow, and temperature). Consistent with previous years, community structure in the upper Fording River changed from upstream to downstream in 2022, and was defined by a notable shift in the relative abundance of Ephemeroptera (mayfly; decrease) and Plecoptera (stonefly; increase) taxa that corresponded to shifts in the abundance of other non-Ephemeroptera-Plecoptera-



Trichoptera (EPT) taxa. While these changes in BIC structure occurred simultaneously with changes in concentrations of mine-related constituents, some of which were above established effects levels during low flows, there was no clear indication of direct effects of water quality on BIC abundance (e.g., toxicity). While a similar spatial pattern in total Ephemeroptera abundance and relative abundance was observed, total abundance and abundance of EPT taxa endpoints remained within their respective normal ranges and consistent over time throughout the study area. In addition, temporally consistent abundance of all key taxa, including EPT, indicated no limitations to food available to fish throughout the study area. Significant relationships between water chemistry and relative abundance metrics may be reflecting a more generalized response to water quality whereby more tolerant taxa thrive (e.g., increase in Dipteran taxa abundance) rather than more sensitive taxa decline (e.g., no observed change in EPT abundance). Key BIC endpoints were also associated with changes in habitat that covaried with changes in water quality throughout the study area, including substrate size, water temperature, water depth, and calcite, suggesting that habitat may be a key factor influencing the BIC but making it difficult to tease apart the influence of individual variables. Most habitat variables were associated with BIC variation throughout the full study area, however, substrate size and water temperature had a particularly strong relationship with BIC variation in the lower study area (i.e., downstream of the Greenhouse Side Channel) where the BIC is characterized by high % Plecoptera and low % Ephemeroptera. Monitoring under the FRO LAEMP indicates that multiple factors, including both mine-related stressors and habitat features, contribute to the variation in BIC in the FRO LAEMP study area, and the shift in the community is largely related to increases in the abundance of non-EPT taxa, rather than a loss or change in the abundance of EPT taxa themselves.

Study Question #6 (What are the factors influencing fish health and population in the Upper Fording River?) was evaluated through an integration of fish studies in the upper Fording River (i.e., UFR westslope cutthroat trout [WCT] Population Monitoring Program) with relevant data (seasonal drying, benthic invertebrate tissue chemistry, and water chemistry) from the FRO LAEMP and the RAEMP (WCT muscle selenium concentrations, condition factor, and observations of external anomalies) within the FRO LAEMP study area. With respect to fish habitat, Henretta Lake has been identified as providing important overwintering habitat for WCT in the upper Fording River watershed (Cope et al. 2016), as well as habitat for resident WCT (Penman et al. 2022). While anoxic conditions were present under the ice in Henretta Lake at the lowest depths (i.e., between 5.5 m and 8.5 m), additional information on water quality under ice is required to assess overwintering habitat for WCT (being conducted winter 2023). The majority of the lake was considered suitable oxygenated habitat for resident WCT during the open-water season. Instream drying has been observed since surveys began in the Fording River (2017 and 2019 in the southern and northern survey areas, respectively) and Henretta Creek



(2020) upstream of the FRO mine boundary. Annual monitoring of seasonal drying identified year-to-year variability on timing of drying that may, at times, limit WCT movement, but once low flows are established in early winter, dry sections only expand spatially at consistent locations with no new dry areas appearing. Overall, based on muscle selenium concentrations, meristic, and anomaly data from adult fish collected under the RAEMP, as well as information collected from chronic toxicity testing, WCT in the FRO LAEMP study area appear to be in good health. Population monitoring has indicated a continued increase in the subadult and adult population in the upper Fording River in 2022, now up to ~2,300 fish from ~330 in 2019. The 2022 age-1 abundance was similar to the previous two years, while the number of fish in the 100 to 200 mm range (age-1 and age-2+) has increased between 2021 and 2022, which may lead to continued increases in adult abundance. The estimated number of eggs deposited by WCT has increased steadily since 2019 (inferred from adult abundance and size). A decline in estimated egg to age-1 survival for the 2021 cohort relative to 2019 and 2020 suggests there may be a density-dependent response as the population approaches its carrying capacity. The estimated number of nests in redds in 2022 was lower compared to 2021 and may be associated with cold early season water temperatures.

Overall, concentrations of nutrients (increase in total phosphate and orthophosphate), selenium (decrease in total and dissolved selenium; increase in methylseleninic acid), and nitrate (decrease) have changed downstream of the FRO-S AWTF outfall post-commissioning relative to the area immediately upstream. No associated changes in BIC structure or benthic invertebrate tissue selenium concentrations were observed, but secondary productivity (benthic invertebrate biomass and density) increased immediately downstream of the FRO-S AWTF outfall, likely a result of increased phosphorus. This increase, however, was limited to just one monitoring area, and measures of productivity (density and biomass) remained within the range observed across the FRO LAEMP study area. Consistent with previous years, BIC structure changed from upstream to downstream in the Fording River, simultaneous with changes in concentrations of mine-related constituents and habitat features, but the total abundance of benthic invertebrates and key BIC endpoints remain high throughout the study area. The WCT population has continued to recover from the 2019 decline (e.g., increased abundance of fish at multiple age classes and broad distribution of redds) and fish appear to be in good health.



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ACRONYMS AND ABBREVIATIONS

ALS – ALS Environmental
AMP – Adaptive Management Plan
ANOVA – Analysis of Variance
AWTF – Active Water Treatment Facility
B-tool – Bioaccumulation Tool
BC – British Columbia
BCWQG – British Columbia Water Quality Guidelines
BIC – Benthic Invertebrate Community
CA – Correspondence Analysis
CABIN – Canadian Aquatic Biomonitoring Network
CCA – Canonical Correspondence Analysis
Cc – Concretion
CI – Calcite Index
Cp – Calcite presence
Cp' – Calcite proportion
CMm – Coal Mountain Mine
CRC ICP-MS – Coupled Plasma-Mass Spectrometry
CSM – Conceptual Site Model
CVAFS – Cold Vapour Atomic Fluorescence Spectroscopy
DO – Dissolved Oxygen
DOC – Dissolved Organic Carbon
DQO – Data Quality Objectives
DQR – Data Quality Review
ECCC – Environment and Climate Change Canada
EMC – Environmental Monitoring Committee
ENV – Environment and Climate Change Strategy
EoC – Evaluation of Cause
EPA – Environmental Protection Agency
EPT – Ephemeroptera-Plecoptera-Trichoptera
EVFFHC – Elk Valley Fish and Fish Habitat Committee
EVO – Elkview Operations
EVWQP – Elk Valley Water Quality Plan
EWT – Early Warning Triggers
FRO – Fording River Operations
FRO-N SRF – Fording River Operation – North Saturate Rock Fill



FRO-S AWTF – Fording River Operation - South Active Water Treatment Facility
GC/MS – Gas Chromatography with Mass Spectrometric Detection
GHO – Greenhills Operations
GPS – Global Positioning System
IC-ICP-CRC-MS – Inductively Coupled Plasma Collision Reaction Cell Mass Spectrometry
ICP-MS – Inductively Coupled Plasma Mass Spectrophotometry
ICP-QQQ-MS – Inductively Coupled Plasma Triple Quadrupole Mass Spectrometry
KNC – Ktunaxa Nation Council
LA-ICPMS – Laser Ablation Inductively Coupled Plasma Spectrometry
LAEMP – Local Aquatic Effects Monitoring Program
LCO – Line Creek Operations
LM – Linear Model
LMM – Linear Mixed-Effects Model
LPL – Lowest Practical Level
LRL – Laboratory Reporting Limit
MOD – Magnitude of Difference
MOE – Ministry of the Environment
PAH – Polycyclic Aromatic Hydrocarbons
PC – Principal Components
PCA – Principal Component Analysis
pCCA – Partial Correspondence Analysis
QA/QC – Quality Assurance / Quality Control
RAEMP – Regional Aquatic Effects Monitoring Program
RISC – Resources Information Standards Committee
SME – Subject Matter Expert
SRF – Saturated Rock Fill
TDS – Total Dissolved Solids
TKN – Total Kjeldahl Nitrogen
TSS – Total Suspended Solids
Teck – Teck Coal Limited
TOC – Total Organic Carbon
UFR – Upper Fording River
WCT – Westslope Cutthroat Trout
WCT RWG – Westslope Cutthroat Trout Recovery Working Group
WSQG – Working Sediment Quality Guidelines



1 INTRODUCTION

1.1 Background

Teck Coal Limited (Teck) operates four steelmaking coal mines in the Elk River watershed, which are the Fording River Operations (FRO), Greenhills Operations (GHO), Line Creek Operations (LCO), and Elkview Operations (EVO; Figure 1.1). A fifth mine, Coal Mountain Mine (CMm), is also owned by Teck and located in the Elk River watershed (Figure 1.1); however, it is no longer in operation and has been moved into the care and maintenance designation. Discharges from the mines to the Elk River watershed are authorized by the British Columbia Ministry of Environment and Climate Change Strategy (ENV) through permits that are issued under provisions of the Environmental Management Act. Permit 107517 specifies the terms and conditions associated with discharges from Teck's five Elk Valley mine operations.

Permit 107517 required that Teck develop a local aquatic effects monitoring program (LAEMP) related to ongoing mining at FRO and the commissioning of the Fording River Operation - South Active Water Treatment Facility (FRO-S AWTF) designed to treat waters from Cataract, Swift, and Kilmarnock Creeks (Figure 1.2). As a result, the FRO LAEMP was developed in 2016 to assess site-specific conditions on a frequent and localized basis, particularly in relation to water treatment, and has been updated since to include the future FRO-N SRF. Permit 107517 was amended in December 2021 (Teck 2021) to include the third cycle of FRO LAEMP monitoring, and Section 8.3.2 outlines the LAEMP requirements as follows:

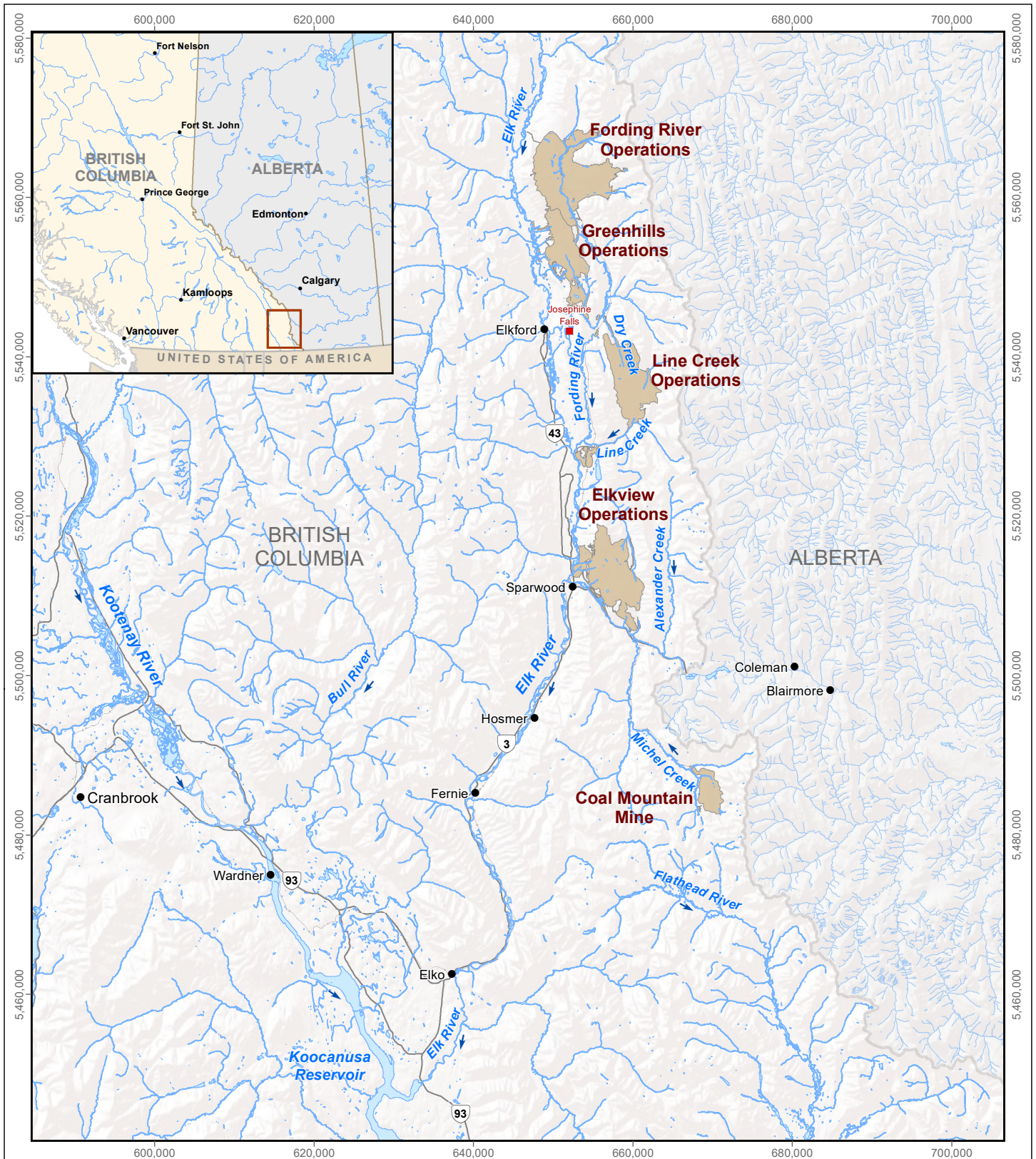
“The Permittee must complete to the satisfaction of the director a study design for a LAEMP which will focus on the upper Fording River for 2021-2023 by April 1, 2021. The study design must be reviewed by the EMC¹ and be designed to an appropriate temporal scale to capture short term, local effects to the immediate receiving environment. Any changes to the approved study design must be reported in the annual LAEMP report.”

Also, Section 9.5 of Permit 107517 states:

“The LAEMP Annual Reports must be reported on in accordance with generally accepted standards of good scientific practice in a written report and submitted to the director of each year following the data collection calendar year on the following dates: FRO LAEMP: May 31.”

¹ The Environmental Monitoring Committee (EMC) was established after the first RAEMP design was approved and implemented in 2015, and consists of representatives from Teck, BC Ministry of Environment and Climate Change (ENV), the Ministry of Energy and Mines, Environment Canada, the Ktunaxa Nation Council (KNC), Interior Health Authority, and an Independent Scientist. The EMC reviews submissions and provides technical advice and input to Teck and the ENV Director, as stipulated in Section 11.2 of Permit 107517.





LEGEND
 Teck Coal Mine Operations

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

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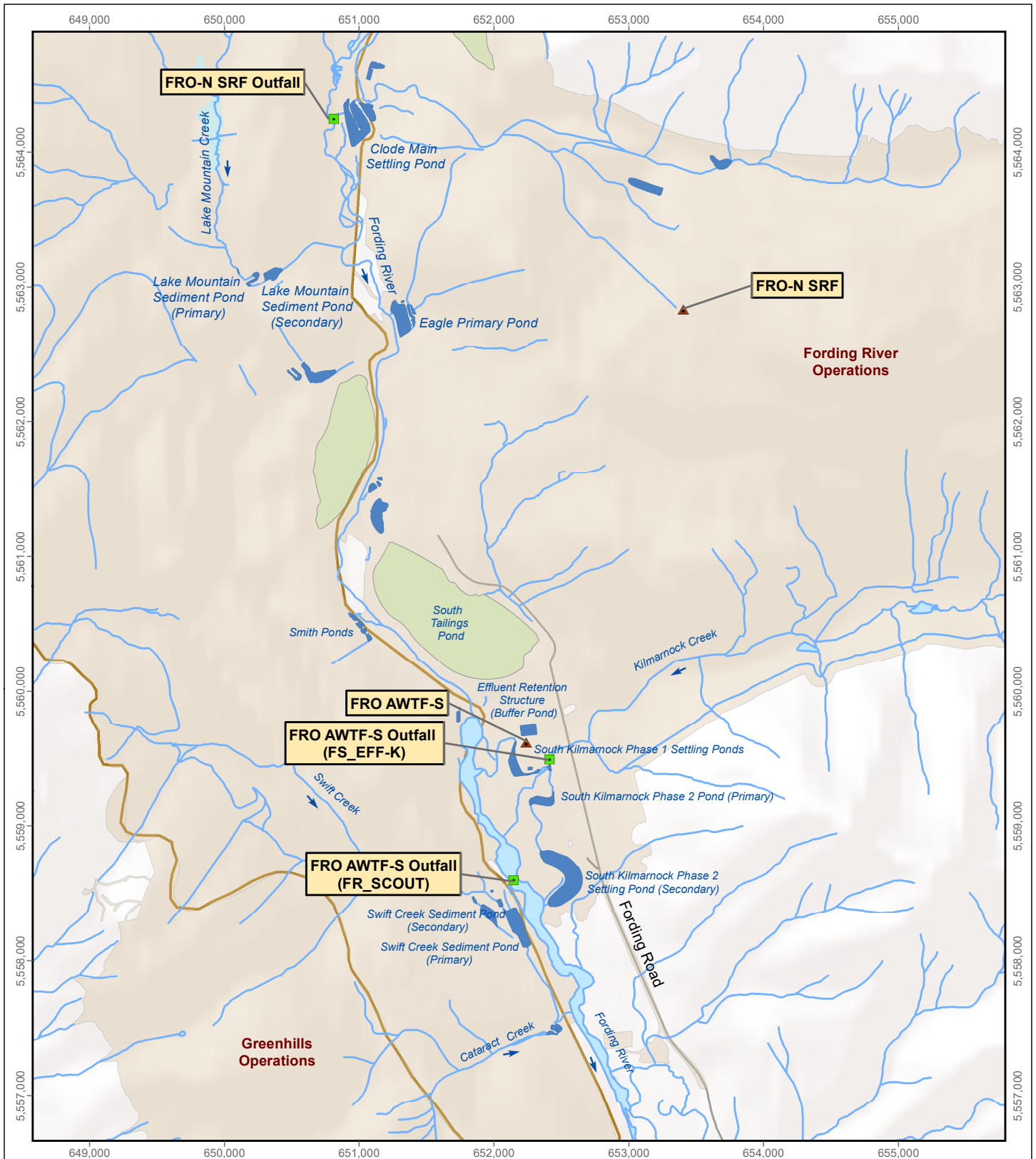
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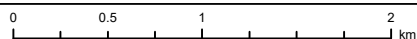
Figure 1.1



LEGEND

- Water Outfall
- ▲ Water Treatment Facility
- Settling Pond
- Tailings Pond
- Teck Coal Mine Operations
- Fording Swift Project Footprint

Fording River Operations Water Treatment Facilities



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Figure 1.2

Three study design cycles have been implemented since the FRO LAEMP was initiated in 2016 (Minnow 2016, Minnow and Lotic 2019a, 2021a). The first two cycles (2016 to 2018 and 2019 to 2020; Minnow 2016, Minnow and Lotic 2019a) consisted of pre-commissioning monitoring for the FRO-S AWTF and the FRO-N SRF, as well as monitoring to address questions related to the potential for mine-related effects on biota, particularly benthic invertebrate communities (BIC; Minnow 2016, Minnow and Lotic 2019a, 2021a). A key finding of previous FRO LAEMP reports was a spatial shift in key BIC metrics (i.e., decreasing % Ephemeroptera and subsequent increase in % Plecoptera) from upstream to downstream (Minnow and Lotic 2019b, 2020b, 2021b, 2022). The gradual shift in community structure throughout the middle study area and continuing downstream to the lower study area was attributed to differences in key water quality and habitat variables.

The third FRO LAEMP cycle (2021 to 2023) includes the first year (2022) of post-commissioning sampling in relation to FRO-S AWTF water treatment, with the anticipated commissioning of FRO-N SRF beginning in 2023 (Minnow and Lotic 2021a). The FRO-S AWTF was commissioned on December 22, 2021, and has a maximum treatment capacity of 21,035 m³/d; however, the facility was not operating at full capacity in 2022 because of timelines associated with commissioning, availability of influent water sources, and intermittent operational issues. In addition to post-commissioning monitoring, the third cycle of the FRO LAEMP also incorporates findings from other studies (e.g., RAEMP, UFR WCT Population Monitoring Program) to help understand factors affecting WCT health and populations within the study area (Minnow and Lotic 2021a).

The goal of the FRO LAEMP is to assess site-specific conditions on a frequent and localized basis, as required, until sufficient data have been collected, concerns no longer exist, or relevant monitoring can be incorporated into the regional aquatic effects monitoring program (RAEMP). The primary focus of the FRO LAEMP is to monitor aquatic ecosystem condition, particularly as it relates to conditions post-commissioning of water treatment compared to conditions prior to commissioning. Study questions from the first and second FRO LAEMP cycles were updated during the preparation of the third FRO LAEMP cycle to better reflect important considerations in the study area (e.g., the commissioning of the FRO-N SRF and the WCT population decline; Minnow and Lotic 2021a). Through the evaluation of data from previous reports, and EMC (December 3, 2020; February 3 and 23, 2021) and subject matter experts (SMEs), the FRO LAEMP study questions were updated as follows:

1. Are nitrate concentrations in the study area changing and do they have the potential for adverse effects on biota?
2. Is water treatment affecting biological productivity downstream in the Fording River?



3. Are benthic invertebrate tissue selenium concentrations downstream of FRO water treatment consistent with predictions, and if not, why?
4. How is temperature changing over time in the FRO LAEMP study area?
 - 4a. Is water temperature measurably different (greater than 1 degree Celsius) downstream of the AWTF and/or SRF effluent discharge relative to the upstream baseline condition?
 - 4b. If changes in water temperature are observed, are these changes attributed to mitigations (i.e., AWTF and/or SRF)?
5. What are the factors contributing to the variations in benthic invertebrate communities in the FRO LAEMP study area?
6. What are the factors influencing fish health and population in the upper Fording River?

The general approach, including context around each study question, specific monitoring areas in relation to sample types, and an overview of how data were considered for evaluation are summarized in Table 1.1. Relevant information obtained under other programs, such as the regional calcite and chronic toxicity monitoring programs are also summarized in the LAEMP. The results of the seventh year (2022 calendar year – January to December) of monitoring for the FRO LAEMP are the subject of this report, which includes comparison to previous years of data.

1.2 Conceptual Site Model

A conceptual site model (CSM) is a written and/or illustrative depiction of relationships between human activities that disturb the environment and the ways such disturbances can alter the ecosystem and affect biological receptors. Potential effects on aquatic receptors in the UFR, both prior to and after the commissioning of the FRO-S AWTF and FRO-N SRF were considered in a CSM (Figure 1.3). Assessment endpoints are the valued attributes of an ecosystem upon which management actions focus (USEPA 1998, 2003). Assessment endpoints considered in the FRO LAEMP are outlined in Table 1.1 and are evaluated using measurement endpoints. Typically, multiple measurement endpoints are used to support evaluation and interpretation of each assessment endpoint to conclude if the assessment endpoints/receptors are being protected.

As illustrated by the CSM, assessment and measurement endpoints may be affected through physical and/or chemical processes related to mining and operation of the AWTF (Figure 1.3). Biological measurements relating directly to population or community characteristics are referred to as direct indicators. Mine-related stressors (including tissue selenium concentrations) are also



Table 1.1: Overview of FRO LAEMP Study Questions, Monitoring, and Data Evaluation, 2022

Study Questions	Context	Assessment Endpoints	Measurement Endpoints ^a				How Data Was Evaluated to Address Study Question
			Water	Water Sampling Stations and Water Temp/Flow Loggers	Biological	Biological Sampling Areas	
1. Are nitrate concentrations in the study area changing, and do they have the potential for adverse effects on biota?	EVWQP projections identified an increasing trend in nitrate concentrations in the upper Fording River. Treatment plans have been finalized within the study area (FRO AWTF S and Eagle 4 SRF) and aqueous nitrate concentrations are expected to decrease following commissioning compared to pre-commissioning concentrations. Nitrate concentrations above EVWQP benchmarks have the potential to adversely affect biota.	Benthic invertebrate community relative to nitrate concentrations in the upper Fording River, and various organisms response to chronic toxicity testing.	Nitrate concentrations in water, surface water chronic toxicity tests (quarterly and semi-annually)	Routine water sampling at FR_UFR1, FR_HC3, FR_FR1, FR_MULTIPLATE, FR_FRNTP, FR_FR2, GH_FR3, FR_SCOUTDS, FR_FR4, FR_FRCP1, FR_FRRD, FR_FRABCH, GH_PC2, FR_FR5; Water sampling concurrent with biological sampling at RG_FRSCH2, RG_FRGHSC, RG_FOUCL, RG_FOUNGD, RG_FODNGD, and RG_FRCP1SW, Chronic toxicity tests at FR_UFR1, FR_FRCP1 and FR_FRABCH	Benthic invertebrate community structure (September) and chronic toxicity testing	CABIN kick and sweep benthic invertebrate community (BIC) sampling at RG_FO26 (Ref), RG_HENUP (Ref), RG_UFR1 (Ref), RG_FODHE, RG_FOUCL, RG_FOUNGD, RG_FODNGD, RG_MP1, RG_FOUSH, RG_FOUKI, RG_FOBKS, RG_SCOUTDS, RG_FOBSC, RG_FOBCP, RG_FRCP1SW, RG_FRUPO, RG_FODPO, RG_FO22, RG_FOU EW; chronic toxicity tests at RG_UFR1, RG_FOBCP and RG_FO22	<ol style="list-style-type: none"> 1. Evaluated nitrate concentrations relative to updated effects concentrations. 2. Determined changes of nitrate concentrations relative to baseyear and water treatment commissioning at each station throughout the study area. 3. Compared nitrate concentrations upstream and downstream of water treatment, and pre- and post-commissioning. 4. Determined if BIC endpoints are outside of regional and/or site-specific normal ranges or moving away from the reference ranges in accordance with observed nitrate concentrations. 5. Determined if BIC results correspond with expectations based on nitrate concentrations in water relative to the updated effects concentration for nitrate. 6. Compared BIC endpoints upstream and downstream from water treatment, and pre- and post-commissioning. 7. Used statistical tools (e.g., correlations, constraining ordination) to evaluate the potential impact of nitrate on BIC (see study question 5). 8. Interpret chronic toxicity results in the context of nitrate concentrations in the study area.
2. Is water treatment affecting biological productivity downstream in the Fording River?	Phosphorus will be added to the FRO AWTF-S and FRO Eagle 4 SRF to facilitate microbial growth. Increased phosphorus concentrations in the effluent has the potential to cause increased algae growth in the upper Fording River, changing the trophic status and overall health.	Phosphorus concentrations in water upstream and downstream of water treatment pre- and post-commissioning. Biological invertebrate productivity downstream from the FRO AWTF-S and FRO Eagle 4 SRF discharge locations post- compared to pre-commissioning and relative to productivity observed upstream from the discharge locations.	Nutrient concentrations, particularly total phosphorus and orthophosphate (phosphorus is the limiting nutrient in the upper Fording River)	Routine water sampling at FR_UFR1, FR_HC3, FR_FR1, FR_MULTIPLATE, FR_FRNTP, FR_FR2, GH_FR3, FR_SCOUTDS, FR_FR4, FR_FRCP1, FR_FRRD, FR_FRABCH, GH_PC2, FR_FR5; Water sampling concurrent with biological sampling at RG_FRSCH2, RG_FRGHSC, RG_FOUCL, RG_FOUNGD, RG_FODNGD, and RG_FRCP1SW	Benthic invertebrate biomass, benthic invertebrate community structure, periphyton scores (all in September only)	BIC sampling as above; Biomass and density (HESS) sampling at RG_FO26 (Ref), RG_HENUP (Ref), RG_FOUCL, RG_FOUNGD, RG_FOUKI, RG_FOBKS, RG_SCOUTDS, RG_FOBSC, RG_FOBCP, RG_FRCP1SW, RG_FRUPO, RG_FO22	<ol style="list-style-type: none"> 1. Compared total phosphorus and orthophosphate concentrations upstream and downstream from water treatment, and pre- and post-commissioning. 2. Determined changes of total phosphorus and orthophosphate concentrations relative to baseyear and water treatment commissioning at each station throughout the study area. 3. Compared biomass/density upstream and downstream from water treatment, and pre- and post-commissioning.
3. Are benthic invertebrate tissue selenium concentrations downstream of FRO water treatment consistent with predictions, and if not, why?	Treatment plans (FRO AWTF S and Eagle 4 SRF) are expected to remove up to 50% of total selenium downstream in the Fording River; however, treatment could also result in an increase in the concentrations of more bioavailable selenium species (i.e., reduced selenium), resulting in increases of benthic invertebrate tissue selenium concentrations.	Benthic invertebrate tissue selenium concentrations downstream from the FRO AWTF-S and FRO Eagle 4 SRF locations post- compared to pre-AWTF commissioning and relative to concentrations observed upstream from the discharge locations. Selenium concentrations and species in water upstream and downstream of water treatment and pre- and post-commissioning.	Total and dissolved selenium concentrations, and selenium speciation	Routine water sampling at FR_UFR1, FR_HC3, FR_FR1, FR_MULTIPLATE, FR_FRNTP, FR_FR2, GH_FR3, FR_SCOUTDS, FR_FR4, FR_FRCP1, FR_FRRD, FR_FRABCH, GH_PC2, FR_FR5; Water sampling concurrent with biological sampling at RG_FRSCH2, RG_FRGHSC, RG_FOUCL, RG_FOUNGD, RG_FODNGD, and RG_FRCP1SW	Benthic invertebrate tissue selenium concentrations (composite-taxa samples)	Benthic invertebrate tissue sampling at RG_FO26 (Ref), RG_HENUP (Ref), RG_UFR1 (Ref), RG_FRSCH2, RG_FRGHSC, RG_FODHE, RG_FOUCL, RG_FOUNGD, RG_FODNGD, RG_MP1, RG_FOUSH, RG_FOUKI, RG_FOBKS, RG_SCOUTDS, RG_FOBSC, RG_FOBCP, RG_FRCP1SW, RG_FRUPO, RG_FODPO, RG_FO22, RG_FOU EW	<ol style="list-style-type: none"> 1. Determined if benthic invertebrate tissue selenium concentrations are outside the regional normal range or above EVWQP benchmarks. 2. Compared benthic invertebrate tissue selenium concentrations upstream and downstream from water treatment, and pre- and post-commissioning. 3. Compared aqueous selenium concentrations upstream and downstream from water treatment, and pre- and post-commissioning. 4. Compared benthic invertebrate tissue selenium concentrations to expected concentrations based on the selenium bioaccumulation model. 5. If tissue selenium concentrations were higher than those predicted by the bioaccumulation model, determined if differences in tissue selenium concentrations are related to changes in selenium species concentrations (i.e., the B-tool was used to compare measured versus modelled benthic invertebrate tissue selenium concentrations).

Notes: EVWQP=Elk Valley Water Quality Plan; AWTF=Active Water Treatment Facility; SRF=Saturated Rock Fill; FRO LAEMP=Fording River Operations Local Aquatic Effects Monitoring Program; WCT=Westslope Cutthroat Trout; BI=Benthic Invertebrate; BIC=Benthic Invertebrate Community; WQ=Water Quality; EWT=Early Warning Trigger; CABIN=Canadian Aquatic Biomonitoring Network. "-" indicates no sampling anticipated

^a Sediment samples will also be collected at RG_HENUP, RG_FO26, RG_FOUKI, RG_SCOUTDS, RG_FOBKS, RG_FOBSC, RG_FOBCP, RG_FRCP1SW, RG_FRUPO, and RG_FO22 to support various LAEMP and operational requirements.

^b Additional locations will be monitored under programs outside of the LAEMP.

Table 1.1: Overview of FRO LAEMP Study Questions, Monitoring, and Data Evaluation, 2022

Study Questions	Context	Assessment Endpoints	Measurement Endpoints ^a				How Data Was Evaluated to Address Study Question
			Water	Water Sampling Stations and Water Temp/Flow Loggers	Biological	Biological Sampling Areas	
<p>4. How is temperature changing over time in the FRO LAEMP study area</p> <p>4a. Is water temperature measurably different (greater than 1 degree Celsius) downstream of the AWTF and/or SRF effluent discharge relative to the upstream baseline condition?</p> <p>4b. If changes in water temperature are observed, are these changes attributed to mitigations (i.e., AWTF and/or SRF)?</p>	<p>Water temperatures in the study area have the potential to change as a result of influences from the FRO AWTF-S and FRO Eagle 4 SRF effluent. These temperature changes have the potential to adversely affect WCT downstream if they are greater than specific threshold temperatures (i.e., greater than 1 degree Celsius downstream relative to upstream) and occur at specific times of the year relative to WCT migrations.</p>	<p>Water temperatures upstream and downstream from the FRO AWTF-S and FRO Eagle 4 SRF.</p>	<p>Water temperature data loggers</p>	<p>Temperature and flow data loggers at FR_UFR1, FR_FR1, FR_FOUCL, FR_FRDSCC1, FR_FR2, GH_FR3, FR_SCOUTDS, FR_FR4, FR_FRCP1, FR_FRCP1SW, FR_FRRD, GH_PC2, FR_FRABCH</p>	-	-	<ol style="list-style-type: none"> 1. Evaluated overall temporal changes in water temperatures throughout the study area. 2. Compared water temperatures upstream and downstream of water treatment, and pre- and post-commissioning. 3. Determined if water temperatures immediately downstream of water treatment are greater than the 1 degree Celsius threshold relative to upstream.
<p>5. What are the factors contributing to the variations in benthic invertebrate communities in the FRO LAEMP study area?</p>	<p>Shifts in community structure have been observed in areas throughout the study area in previous FRO LAEMPs. Variations in BIC throughout the study area may be associated with specific habitat variables and/or water quality stressors.</p>	<p>BIC endpoints, chronic toxicity testing, tissue chemistry, water chemistry, sediment chemistry, and habitat (e.g., seasonal drying, flow, substrate type, calcite, temperature).</p>	<p>Order Constituents, plus nickel and other WQ constituents with Early Warning Triggers (EWT) in surface water, chronic toxicity tests (quarterly and semi-annually), water temperature and flow, seasonal drying surveys.</p>	<p>Routine water sampling at FR_UFR1, FR_HC3, FR_FR1, FR_MULTIPLATE, FR_FRNTP, FR_FR2, GH_FR3, FR_SCOUTDS, FR_FR4, FR_FRCP1, FR_FRRD, FR_FRABCH, GH_PC2, FR_FR5; Water sampling concurrent with biological sampling at RG_FRSC2, RG_FRGHSC, RG_FOUCL, RG_FOUNGD, RG_FODNGD, and RG_FRCP1SW, Chronic toxicity tests at FR_UFR1, FR_FRCP1 and FR_FRABCH, Temperature and flow data loggers at FR_UFR1, FR_FR1, FR_FOUCL, FR_FRDSCC1, FR_FR2, GH_FR3, FR_SCOUTDS, FR_FR4, FR_FRCP1, FR_FRCP1SW, FR_FRRD, GH_PC2, FR_FRABCH</p>	<p>BIC structure and composite-taxa benthic invertebrate tissue selenium concentrations</p>	<p>CABIN kick and sweep benthic invertebrate community (BIC) sampling at RG_FO26 (Ref), RG_HENUP (Ref), RG_UFR1 (Ref), RG_FODHE, RG_FOUCL, RG_FOUNGD, RG_FODNGD, RG_MP1, RG_FOUSH, RG_FOUKI, RG_FOBKS, RG_SCOUTDS, RG_FOBSC, RG_FOBCP, RG_FRCP1SW, RG_FRUPO, RG_FODPO, RG_FO22, RG_FOUUEW; chronic toxicity tests at RG_UFR1, RG_FOBCP and RG_FO22, Benthic invertebrate tissue sampling at RG_FO26 (Ref), RG_HENUP (Ref), RG_UFR1 (Ref), RG_FRSC2, RG_FRGHSC, RG_FODHE, RG_FOUCL, RG_FOUNGD, RG_FODNGD, RG_MP1, RG_FOUSH, RG_FOUKI, RG_FOBKS, RG_SCOUTDS, RG_FOBSC, RG_FOBCP, RG_FRCP1SW, , RG_FRUPO, RG_FODPO, RG_FO22, RG_FOUUEW</p>	<ol style="list-style-type: none"> 1. Determined if BIC endpoints are outside of regional and/or site-specific normal ranges or moving away from the reference ranges in accordance with potential water quality stressors and/or habitat variables. 2. Determined changes of concentrations of constituents identified as EWTs relative to baseyear and water treatment commissioning at each station throughout the study area. 3. Determined if chemical/physicals stressors and/or habitat variables correlate with key BIC metrics. 4. Used statistical tools (e.g., canonical correspondence analysis) to understand the factors that are causing variations in BIC endpoints throughout the study area. 5. Used chronic toxicity testing results to further interpret how water quality may be affecting biota in the study area.

Notes: EVWQP=Elk Valley Water Quality Plan; AWTF=Active Water Treatment Facility; SRF=Saturated Rock Fill; FRO LAEMP=Fording River Operations Local Aquatic Effects Monitoring Program; WCT=Westslope Cutthroat Trout; BI=Benthic Invertebrate; BIC=Benthic Invertebrate Community; WQ=Water Quality; EWT=Early Warning Trigger; CABIN=Canadian Aquatic Biomonitoring Network. "-" indicates no sampling anticipated

^a Sediment samples will also be collected at RG_HENUP, RG_FO26, RG_FOUKI, RG_SCOUTDS, RG_FOBKS, RG_FOBSC, RG_FOBCP, RG_FRCP1SW, RG_FRUPO, and RG_FO22 to support various LAEMP and operational requirements.

^b Additional locations will be monitored under programs outside of the LAEMP.

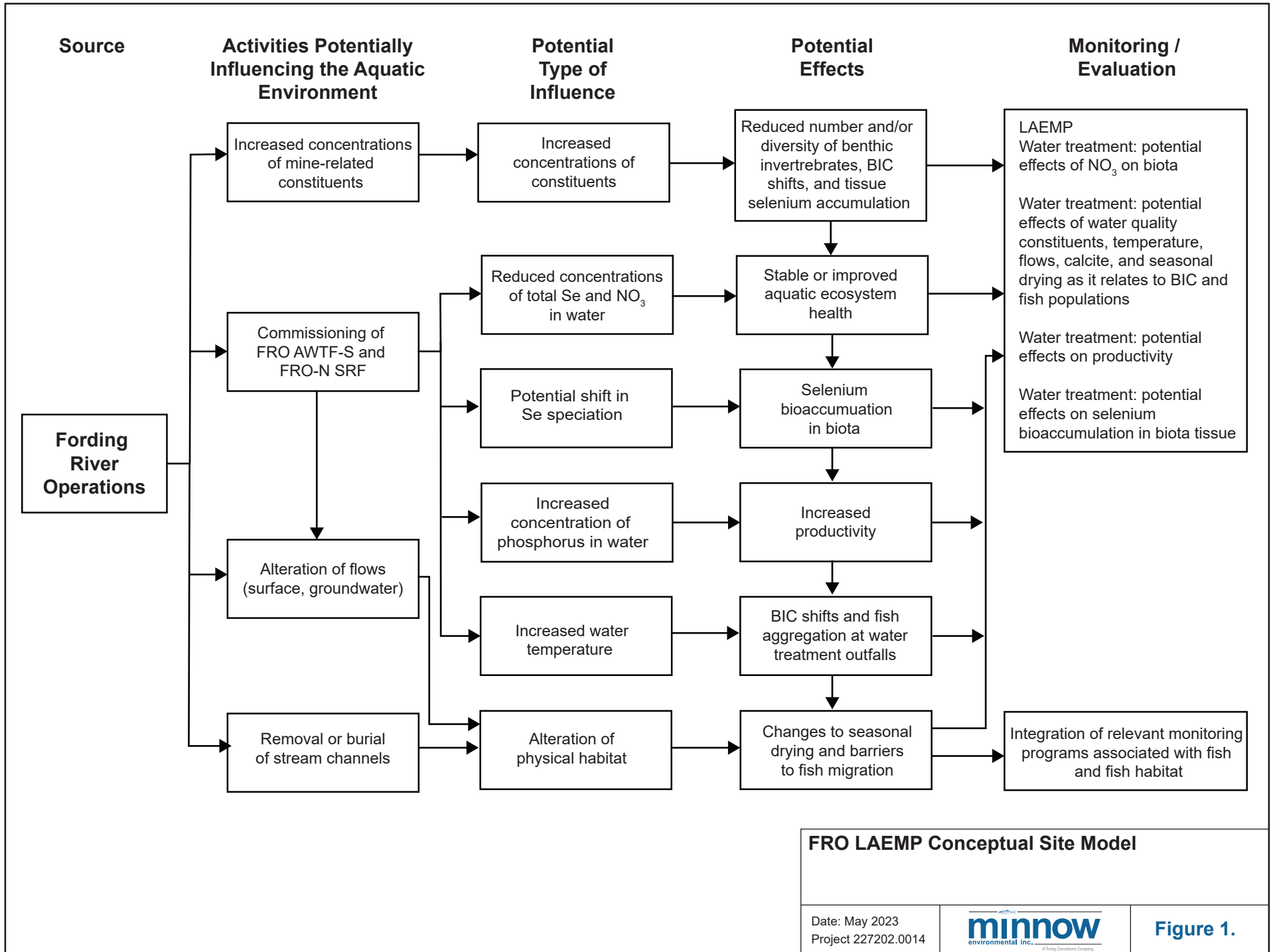
Table 1.1: Overview of FRO LAEMP Study Questions, Monitoring, and Data Evaluation, 2022

Study Questions	Context	Assessment Endpoints	Measurement Endpoints ^a				How Data Was Evaluated to Address Study Question
			Water	Water Sampling Stations and Water Temp/Flow Loggers	Biological	Biological Sampling Areas	
6. What are the factors influencing fish health and populations in the Upper Fording River?	Fish health and populations in the upper Fording River may be affected by natural and/or mine-related water quality and habitat stressors.	Westslope Cutthroat (WCT) health and population assessments, WCT behaviour assessments (e.g. aggregations near water treatment outfalls), WCT fish tissue assessments, seasonal drying surveys, BIC endpoint assessments, BI tissue and water chemistry, water temperatures and flows.	Order Constituents, plus nickel and other WQ constituents with Early Warning Triggers (EWT) in surface water, chronic toxicity tests (quarterly and semi-annually)	Routine water sampling at FR_UFR1, FR_HC3, FR_FR1, FR_MULTIPATE, FR_FRNTP, FR_FR2, GH_FR3, FR_SCOUTDS, FR_FR4, FR_FRCP1, FR_FRRD, FR_FRABCH, GH_PC2, FR_FR5; Water sampling concurrent with biological sampling at RG_FRSC2, RG_FRGHSC, RG_FOUCL, RG_FOUNGD, RG_FODNGD, and RG_FRCP1SW, Chronic toxicity tests at FR_UFR1, FR_FRCP1 and FR_FRABCH, Temperature and flow data loggers at FR_UFR1, FR_FR1, FR_FOUCL, FR_FRDSCC1, FR_FR2, GH_FR3, FR_SCOUTDS, FR_FR4, FR_FRCP1, FR_FRCP1SW, FR_FRRD, GH_PC2, FR_FRABCH	WCT health (tissue chemistry and anomalies) and population ^b , BIC endpoints, benthic invertebrate tissue	CABIN kick and sweep benthic invertebrate community (BIC) sampling at RG_FO26 (Ref), RG_HENUP (Ref), RG_UFR1 (Ref), RG_FODHE, RG_FOUCL, RG_FOUNGD, RG_FODNGD, RG_MP1, RG_FOUSH, RG_FOUKI, RG_FOBKS, RG_SCOUTDS, RG_FOBSC, RG_FOBCP, RG_FRCP1SW, RG_FRUPO, RG_FODPO, RG_FO22, RG_FOUUEW; chronic toxicity tests at RG_UFR1, RG_FOBCP and RG_FO22, Benthic invertebrate tissue sampling at RG_FO26 (Ref), RG_HENUP (Ref), RG_UFR1 (Ref), RG_FRSC2, RG_FRGHSC, RG_FODHE, RG_FOUCL, RG_FOUNGD, RG_FODNGD, RG_MP1, RG_FOUSH, RG_FOUKI, RG_FOBKS, RG_SCOUTDS, RG_FOBSC, RG_FOBCP, RG_FRCP1SW, , RG_FRUPO, RG_FODPO, RG_FO22, RG_FOUUEW	1. Evaluated WCT health (tissue chemistry and anomalies) and population using findings from other related studies (e.g., RAEMP, WCT Population Monitoring, FRO-S Flow Related Monitoring and Assessment Plan, and Fording Outfall Fish Plan). 2. Integrated findings from related studies (e.g., RAEMP, WCT Population Monitoring, FRO-S Flow Related Monitoring and Assessment Plan, and Fording Outfall Fish Plan) with FRO LAEMP fish habitat data (e.g., Henretta Lake, seasonal drying, BIC, benthic invertebrate tissue chemistry, water chemistry and temperatures) to understand how factors may be influencing WCT health and populations.

Notes: EVWQP=Elk Valley Water Quality Plan; AWTF=Active Water Treatment Facility; SRF=Saturated Rock Fill; FRO LAEMP=Fording River Operations Local Aquatic Effects Monitoring Program; WCT=Westslope Cutthroat Trout; BI=Benthic Invertebrate; BIC=Benthic Invertebrate Community; WQ=Water Quality; EWT=Early Warning Trigger; CABIN=Canadian Aquatic Biomonitoring Network. "-" indicates no sampling anticipated.

^a Sediment samples will also be collected at RG_HENUP, RG_FO26, RG_FOUKI, RG_SCOUTDS, RG_FOBKS, RG_FOBSC, RG_FOBCP, RG_FRCP1SW, RG_FRUPO, and RG_FO22 to support various LAEMP and operational requirements.

^b Additional locations will be monitored under programs outside of the LAEMP.



monitored as part of the FRO LAEMP and are referred to as indirect indicators. Laboratory chronic toxicity data (semi-direct indicators) are incorporated into the FRO LAEMP, as appropriate. Measurement of indirect and semi-direct indicators contribute to understanding if observed effects on individual receptors are mine-related. Effects may act alone or in combination to influence aquatic populations and/or communities by changing the abundance or resilience of aquatic receptors and are evaluated by monitoring benthic invertebrates as biological receptors EVWQP within the FRO LAEMP. The study questions (Section 1.1) were developed in consideration of the potential effects identified in the CSM.

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

As required in Permit 107517 Section 10, Teck developed an Adaptive Management Plan (AMP) to support implementation of the Elk Valley Water Quality Plan (EVWQP) to achieve water quality targets including calcite targets, ensure that human health and the environment are protected, and where necessary, restored, and to facilitate continuous improvement of water quality in the Elk Valley. The AMP was most recently updated in December 2021 (Teck 2021a). Adaptive management is a systematic, rigorous approach to environmental management that maximizes learning about uncertainties while simultaneously striving to meet multiple management objectives and adapt management actions based on what is learned. The adaptive management cycle comprises six stages: assess, design, implement, monitor, evaluate and adjust. The AMP identifies six Management Questions (MQs) that are re-evaluated at regular intervals. Evaluating these MQs collectively articulates whether Teck is on track to meet the environmental objectives of the EVWQP.

The FRO LAEMP was designed to monitor conditions in the upper Fording River in relation to water treatment and answer specific questions on an annual basis (Section 1.2). Each annual LAEMP cycle (results are reported on May 31st of each year for the preceding calendar year) is also used for tracking issues for which a potential need for an adjustment, using the response framework, has been identified, including biological triggers assessments. The following are examples of adaptive management in the FRO LAEMP study area:

- Seasonal drying between Swift and Cataract Creeks was observed in late 2018, resulting in flows in the Fording River at the FRO Compliance Point consisting predominantly of water from Cataract Creek. To evaluate the potential effects on biota in the area downstream of Cataract Creek, two additional biological sampling events were included (Stage 6: Adjust) in December 2018 and February 2019 (Minnow and Lotic 2020).
- In June of 2020, benthic invertebrate tissue selenium concentrations were anomalously high in three out of five replicates at the area upstream of the Greenhouse Side



channel confluence (RG_FRCP1SW), which was observed in other results at some areas within the Elk Valley. As a result, a broader investigation of annelid presence in composite-taxa benthic invertebrate tissue samples and the effects on selenium concentrations was conducted (Luoma 2021; Golder 2021).

- Polyaromatic hydrocarbon and, to a lesser extent, selenium concentrations were significantly higher at the area immediately downstream of the FRO-S AWTF outfall (RG_SCOUTDS) in September 2022 so confirmatory sampling was conducted in February 2023 to verify anomalous results. A review of sampling and laboratory protocols was also conducted.

Biological triggers are intended as a simple and consistent way to flag potential unexpected monitoring results that may require additional investigation and adjustment. In the current report, % EPT and composite-taxa benthic invertebrate tissue selenium concentrations were assessed to determine whether a biological trigger has been reached (additional information and methods pertaining to this analysis can be found in Appendix K). Reaching a trigger may lead to an adjustment (Stage 6: Adjust) using the AMP response framework. Implementation of management actions is not constrained to the AMP or LAEMP annual reporting cycles but may be (and have been) triggered at any time during the monitoring and reporting cycle. This is the main report for conveying biological trigger results within the FRO LAEMP study area under the AMP.

In addition to addressing questions specific to the FRO LAEMP on an annual basis, aquatic monitoring data from the LAEMP will contribute to the broader data set assessed every three years within the RAEMP. The RAEMP is designed to evaluation MQ 5: *“Does monitoring indicate that mine-related changes in aquatic ecosystem conditions are consistent with expectations?”* Data from the LAEMP and RAEMP also contribute to answering MQ 2: *“Will aquatic ecosystem health be protected by meeting the long-term SPOs?”*

Please refer to the 2021 AMP Update (Teck 2021a) for more information on the adaptive management framework, including Management Questions, key uncertainties, and continuous improvement; linkages between the AMP and other EVWQP programs; and AMP reporting. Progress on gaining new knowledge and reducing key uncertainties is described in annual AMP reports (submitted July 31) and evaluating the answers to MQs are reported in MQ evaluation reports (various submission dates).



2 METHODS

2.1 Overview

The general approach for the FRO LAEMP includes presentation of the collected data and data evaluation in relation to each of the study questions. Permit 107517 requires that Teck prepare an annual FRO LAEMP report that summarize monitoring data collected during the preceding calendar year at all locations specified in the permit; this report includes all historical data up to the end of the 2022 calendar year for all endpoints. Data were compared to EVWQP benchmarks, BC water quality guidelines for protection of aquatic life and, where applicable, updated effects concentrations (ECs), screening values, and proposed benchmarks. Effects concentrations for nitrate and sulphate were updated in 2022 using the most current toxicity information (WSP Golder 2022).

Monitoring in 2022 was consistent with the 2021 to 2023 FRO LAEMP study design (Minnow and Lotic 2021b) and approved amendments (Minnow and Lotic 2022), with some exceptions (Tables 2.1 and 2.2). The FRO-S AWTF commissioning sampling occurred in December (2021), January, February, and March, and included water quality (including selenium speciation) and benthic invertebrate tissue chemistry sampling (Table 2.2). In September, sampling included sediment and water quality (including selenium speciation), benthic invertebrate biomass and density (Hess), and BIC (kick and sweep), while in June and December, only benthic invertebrate tissue chemistry and water quality (including selenium speciation) sampling was conducted, as per the FRO LAEMP study design and amendments (Minnow and Lotic 2021a; Minnow and Lotic 2022). Samples were taken from established biological monitoring areas within the study area, where applicable (Tables 2.1 and 2.2; Minnow and Lotic 2021a; Minnow and Lotic 2022), which extended from the Fording River and Henretta Creek upstream of FRO, through the operations and downstream to between Chauncey Creek and Ewin Creek (Figure 2.1; Table 2.1). Deviations from study design are summarized below (Table 2.2):

- 1) Seasonal drying and/or ice conditions prevented sampling at RG_FRCP1SW in December (2021 and 2022), January, February, and March, at RG_FOBCP in January, February, and December (2022), and at RG_FODHE in December 2022.
- 2) Geohazards associated with the Turnbull landslide prohibited access, and therefore sampling, in Henretta Creek (RG_HENUP) in June.
- 3) A strong freshet (high and fast flowing waters) prevented sampling at RG_FO22 (associated with the Compliance point FR_FRABCH) and RG_FOU EW in June.



Table 2.1: Summary of Samples Collected for the FRO LAEMP, 2022

Biological Monitoring Area (Associated Teck Water Station) ^{dg}	Area Description	Biological Monitoring Area UTM Coordinates		Water Quality						Sediment Quality			Benthic Invertebrates									
				Water Chemistry			Selenium						Hess			Kick and Sweep						
				June	Sept	Dec	June	Sept	Dec				June	Sept	Dec	Biomass/Density (# of samples)			Community ⁱ (# of samples)			Composite-taxon Selenium (# of samples) ^b
Eastings	Northings	June	Sept	Dec	June	Sept	Dec	June	Sept	Dec	June	Sept	Dec	June	Sept	Dec	June	Sept	Dec			
Reference	RG_HENUP (FR_HC3)	Henretta Creek u/s all mine operations	655771	5567710	x	1	-	x	1	-	-	3	-	-	10	-	-	3	-	x	3	-
	RG_FO26 ^c (FR_UFR1)	Fording River u/s Henretta (u/s all mines)	653064	5569601	1	1	-	1	1	-	-	3	-	-	10	-	-	3	-	3	5	-
	RG_UFR1 ^{ac} (FR_UFR1)	Fording River u/s Henretta at Teck WQ station	651376	5566758	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	5	5	5
Mine-exposed	RG_FRSC2 ^e	Fording River side channel 2 beginning d/s of FRCP1SW reconnecting u/s of FODPO	653549	5555700	1	1	1	1	1	1	-	-	-	-	-	-	-	3	-	5	5	5
	RG_FRGHSC	Greenhouse side channel connecting with Fording River d/s of FRUPO	653689	5556265	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	5	5	5
	RG_FODHE (FR_FR1)	Fording River d/s Henretta Creek	651320	5565422	1	1	x	1	1	x	-	-	-	-	-	-	-	3	-	3	3	x
	RG_FOUCL (FR_FOUCL)	Fording River u/s of Clode Creek	650787	5564445	1	1	1	1	1	1	-	-	-	-	10	-	-	3	-	3	5	5
	RG_FOUNGD	Fording River u/s North Greenhills Diversion	650870	5563476	1	1	1	1	1	1	-	-	-	-	10	-	-	3	-	3	5	5
	RG_FODNGD (FR_FRABEC1)	Fording River d/s Lake Mountain Creek/ North Greenhills Diversion	650972	5563162	1	1	1	1	1	1	-	-	-	-	-	-	-	3	-	3	5	5
	RG_MP1 (FR_MULTIPATE)	Fording River d/s Multiplate d/s Eagle Ponds	651143	5562400	1	1	1	1	1	1	-	-	-	-	-	-	-	3	-	3	5	5
	RG_FOUSH (FR_FRNTP)	Fording River u/s Shandley Creek	650876	5560957	1	1	1	1	1	1	-	-	-	-	-	-	-	3	-	3	3	5
	RG_FOUKI (FR_FR2)	Fording River u/s Kilmarnock Creek	651859	5559804	1	1	1	1	1	1	-	5	-	-	10	-	-	3	-	5	5	5
	RG_FOBKS (FR_FR3)	Fording River immediately u/s of the FRO AWTF-S discharge	652074	5558652	1	1	1	1	1	1	-	5	-	-	10	-	-	3	-	5	5	x
	RG_SCDSB ^h	Fording River immediately (within 30 m) d/s of FRO AWTF-S outfall	652135	5558592	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	5
	RG_SCOUTDS (FR_SCOUTDS)	Fording River d/s of FRO AWTF-S outfall	652307	5558501	1	1	1	1	1	1	-	5	-	-	10	-	-	3	-	5	5	5
	RG_FOBSC (FR_FR4)	Fording River d/s Swift Creek, u/s Cataract Creek	652407	5558109	1	1	1	1	1	1	-	-	-	-	10	-	-	3	-	5	5	5
	RG_FOBCEP ^f (FR_FRCP1)	Fording River between Cataract & Porter Creek (Old Compliance Point)	652920	5556982	1	1	x	1	1	x	-	5	-	-	10	-	-	5	-	5	5	x
	RG_FRCP1SW	Fording River ~1150 m d/s of Compliance Point	653387	5556201	1	1	x	1	1	x	-	-	-	-	10	-	-	3	-	5	5	x
	RG_FRUPO (FR_FRRD)	Fording River u/s of Porter Creek	653894	5555975	1	1	1	1	1	1	-	5	-	-	10	-	-	3	-	5	5	5
RG_FODPO (GH_PC2)	Fording River d/s Porter Creek, u/s Chauncey Creek	653935	5555085	1	1	1	1	1	1	-	-	-	-	-	-	-	3	-	5	5	5	
RG_FO22 ^f (FR_FRABCH)	Fording River u/s Chauncey Creek (New Compliance Point)	654841	5553523	x	1	1	x	1	1	-	5	-	-	10	-	-	5	-	x	5	5	
RG_FOUEW (FR_FR5)	Fording River d/s Chauncey Creek, u/s Ewin Creek	656365	5551875	x	1	1	x	1	1	-	-	-	-	-	-	-	3	-	x	5	5	

Notes: '-' indicates sample that was not taken because it was not a part of the sampling design; 'x' indicates sample that was not taken because of unsafe sampling conditions, drying and/or ice conditions.
^a RG_UFR1 was used as a reference area in winter months when there was no access to RG_FO26 or RG_HENUP. It was added for June and September for additional pre-FRO AWTF-S commissioning data.
^b n=5 for composite-taxon tissue samples in areas associated with the FRO AWTF-S and the FRO-N SRF commissioning sampling plans.
^c The water quality monitoring station is the same for biological monitoring stations RG_FO26 and RG_UFR1.
^d Routine water quality monitoring stations associated with biological monitoring areas are outlined in brackets.
^e BIC monitoring at RG_FRSC2 was added in September 2022 at the request of the EMC.
^f Triplicate samples of periphyton for both ash free dry mass and chlorophyll-a analysis taken during the RAEMP
^g Periphyton scores of n=5 were taken at each biological monitoring area in September.
^h Water and benthic invertebrate tissue monitoring was added within 30 m downstream of the FRO AWTF-S outfall at the request of the EMC; this sampling was not a part of the study design.
ⁱ Benthic invertebrate community sampling in June and December was discontinued in 2022 as approved by the EMC during 2021 meetings.

Table 2.2: Summary of Samples Collected to Support the FRO-S AWTF Commissioning Sampling Plan, 2022

Biological Monitoring Area (Associated Teck Water Station) ^d		Area Description	Biological Monitoring Area UTM Coordinates		Sampling Design											
					Water Chemistry				Water Selenium Speciation				Composite-taxon Selenium			
					Easting	Northing	0 Weeks ^c	4 Weeks	8 Weeks	12 Weeks	0 Weeks ^c	4 Weeks	8 Weeks	12 Weeks	0 Weeks ^c	4 Weeks
Ref	RG_UFR1 ^a (FR_UFR1)	Fording River u/s Henretta at Teck WQ station	651376	5566758	1	1	1	1	1	1	1	1	5	5	5	5
Mine-exposed	RG_FRGHSC	Greenhouse side channel connecting with Fording River d/s of FRUPO	653689	5556265	1	1	1	1	1	1	1	1	5	5	5	5
	RG_FOUKI ^b (FR_FR2)	Fording River u/s Kilmarnock Creek	651859	5559804	1	1	1	1	1	1	1	1	5	5	5	5
	RG_FOBKS ^b (FR_FR3)	Fording River between Kilmarnock Creek & Swift Creek	652074	5558652	1	1	1	1	1	1	1	1	5	5	5	5
	RG_SCOUTDS (FR_SCOUTDS)	Fording River d/s of FRO AWTF-S outfall	652307	5558501	1	1	1	1	1	1	1	1	5	5	5	5
	RG_FOBSC (FR_FR4)	Fording River d/s Swift Creek, u/s Cataract Creek	652407	5558109	1	1	1	1	1	1	1	1	5	5	5	5
	RG_FOBCEP (FR_FRCP1)	Fording River between Cataract & Porter Creek	652920	5556982	1	x	x	1	1	x	x	1	5	x	x	5
	RG_FRCP1SW (FR_FRCP1SW)	Fording River ~1150 m d/s of Compliance Point	653387	5556201	x	x	x	x	x	x	x	x	x	x	x	x
	RG_FRUPO (FR_FRRD)	Fording River u/s of Porter Creek	653894	5555975	1	1	1	1	1	1	1	1	5	5	5	5
	RG_FODPO (GH_PC2)	Fording River d/s Porter Creek, u/s Chauncey Creek	653935	5555085	1	1	1	1	1	1	1	1	5	5	5	5
	RG_FO22 (FR_FRABCH)	Fording River u/s Chauncey Creek	654841	5553523	1	1	1	1	1	1	1	1	5	5	5	5
	RG_FOUW (FR_FR5)	Fording River d/s Chauncey Creek, u/s Ewin Creek	656365	5551875	1	1	1	1	1	1	1	1	5	5	5	5

Notes: the FRO AWTF-S outfall is located between RG_FOBKS and RG_SCOUTDS; 'x' indicates sample that was not taken because of drying and/or ice conditions.

^a RG_UFR1 was used as the reference location because of limited access to RG_FO26 or RG_HENUP during winter months.

^b Mine-exposed sampling areas upstream of FRO-S AWTF.

^c sampling was conducted two weeks before FRO AWTF-S forward flow.

^d Routine water quality monitoring stations associated with biological monitoring areas are outlined in brackets.

- 4) Drying surveys in Henretta Creek could not be conducted in November or December 2022 because of hazards associated with the Turnbull landslide.

Water level (flow) and temperature were monitored continuously at established gauges throughout the study area. Drying surveys were conducted monthly between January and reconnection, and from August through December 2022 within the Southern, Northern, and upper Henretta drying survey areas (Table 2.3; Figure 2.2). One logger failure occurred at FR_FRCP1SW in 2022 for the M5 logger over winter, however, data was collected from the backup Hobo logger, thus filling any data gaps. Additionally, stilling wells were washed away at FR_FRDSCC1 and FR_FOUCL during freshet but were replaced on July 27, 2022, resulting in a data gap at these two stations from June 6th to July 27th, 2022.

2.2 Water Quality

2.2.1 Sample Collection

Water quality and selenium speciation samples, as well as *in situ* water quality data (i.e., temperature, flow, pH, conductivity, and DO), were collected concurrently with all biological sampling (Tables 2.1 and 2.2). In addition, routine water quality monitoring data collected by Teck and that corresponded with many biological sampling areas were included in the FRO LAEMP (Table 2.4; Figure 2.1). Water quality samples were collected to understand potential changes to concentrations of nutrients and mine-related constituents in accordance with Permit 107517, while selenium speciation samples were collected to provide understanding of speciation in the study area in relation to commissioning of the FRO-S AWTF and the FRO-N SRF, and to compare to benthic invertebrate tissue selenium concentrations (see Appendix B1.2 and B1.3 for detailed methodology).

2.2.2 Laboratory and Data Analysis

Water samples were analyzed by ALS Environmental, Calgary, Alberta, for constituents consistent with Permit 107517 (i.e., conventional parameters, major ions, nutrients, and total and dissolved metals) using standard methods (see Appendix B1.2 for detailed methodology).

Water samples were analyzed by Brooks Applied Labs, Seattle, Washington for selenium speciation analysis (including concentrations of selenate, selenite, dimethylselenoxide (DMSeO), methylseleninic acid (MeSe(IV)), methaneselenonic acid, selenocyanate, selenomethionine, selenosulphate, and unknown selenium species; see Appendix B1.2 for detailed methodology).

Water quality data were downloaded from Teck's EQulS database and included both routine monitoring results collected by Teck and samples collected concurrently with biological sampling.



Table 2.3: Stations Associated with Drying Surveys, Manual Flow Measurements, and Hydrometric and Water Temperature Loggers, FRO LAEMP, 2022

Water Station ID ^d		UTM (11U)		Drying Survey Frequency ^c	Manual Discharge Measurements	HOBO Level Logger	Solinst Level/Vent Logger	Solinst M5 Level Logger ^b	Barometer
		Easting	Northing						
Ref	FR_UFR1 ^b (RG_FO26 and RG_UFR1)	651472	5566717	M	Y	-	Y	Y	Y
Mine-exposed	FR_FR1 ^b (RG_FODHE)	651289	5565415	M	Y	-	Y	Y	-
	FR_FRUPP	650923	5565169	M	N	-	-	-	-
	FR_FOUCL ^b (RG_FOUCL)	650787	5564445	M	Y	Y	Y	Y	-
	FR_FRDSCC1 ^b	650840	5563925	M	Y	-	Y	Y	-
	FR_MULTIPLATE (RG_MP1)	651280	5562515	M	N	-	-	-	-
	FR_FR2 (RG_FOUKI)	651781	5559984	M	Y	Y	Y	Y	-
	FR_FR3 (RG_FOBKS)	652125	5558620	M	Y	-	Y	Y	-
	FR_SCOUTDS ^a (RG_SCOUTDS)	652272	5558373	M	Y	-	Y	Y	-
	FR_FR4 (RG_FOBSC)	652464	5557943	M	Y	-	Y	Y	Y
	FR_FRCP1 (RG_FOBCEP)	652823	5557220	M	Y	Y	Y	Y	-
	FR_FRCP1SW (RG_FRCP1SW)	653324	5556197	M	Y	Y	Y	Y	-
	FR_FRRD (RG_FRUPO)	653897	5555925	M	Y	Y	-	Y	-
	GH_PC2 (RG_FODPO)	653734	5555147	M	Y	-	Y	Y	-
	FR_FRABCH ^c (RG_FO22)	655282	5552799	M	N	-	Y	Y	-

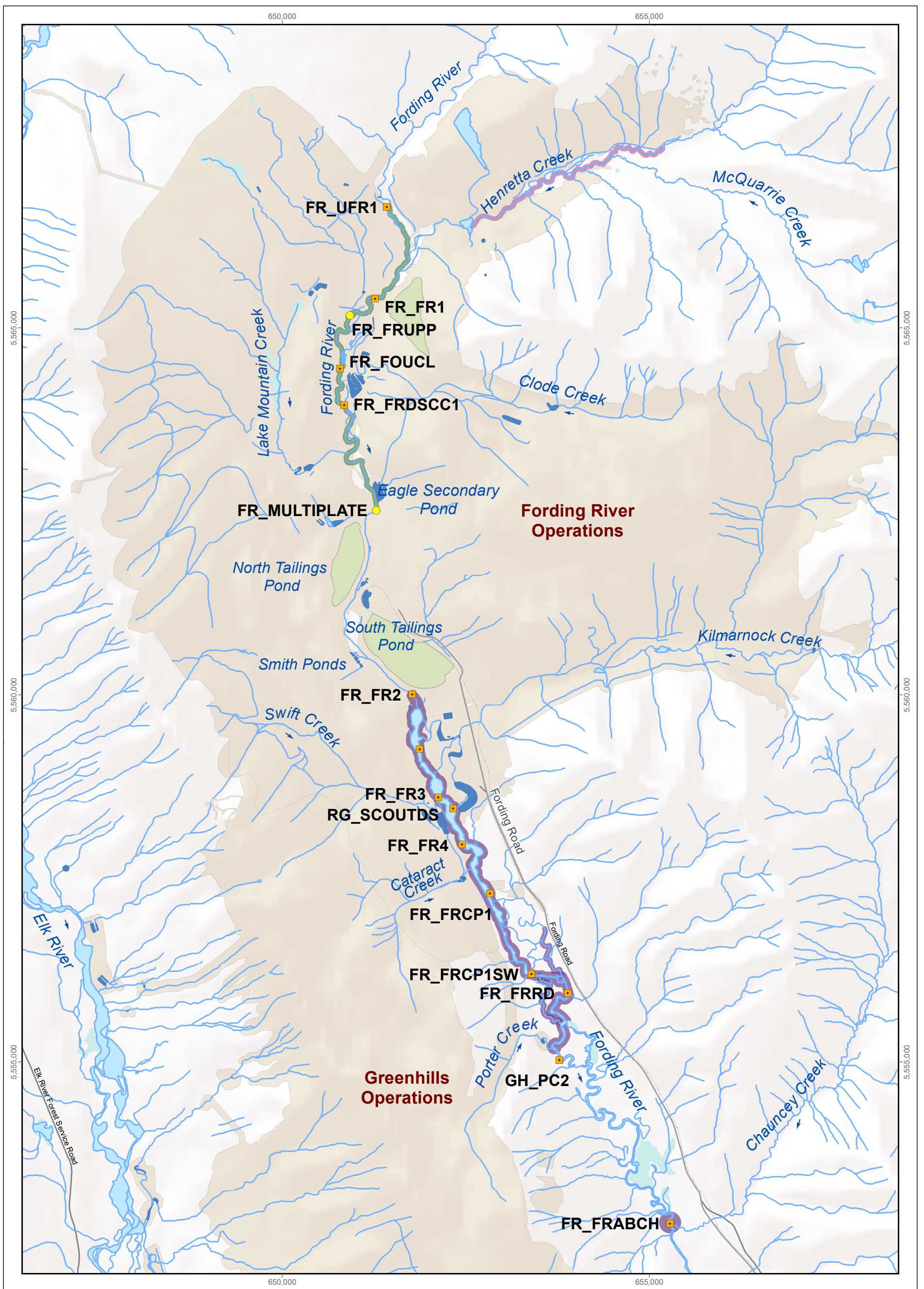
Note: "-" indicates station not having data logger type.

^a Hydrometric station and loggers FR_FOUCL were washed away June 2022.

^b FR_FRDSCC1 station and loggers washed away and recovered July 2022

^c Drying surveys began in August and continued until reconnection of the Fording River.

^d Biological monitoring area associated with survey and logger stations identified in brackets.



<p>LEGEND</p> <ul style="list-style-type: none"> ■ Continuous Logger Station ● Water Quality Monitoring Station ■ Settling Pond ■ Tailings Pond — Upper Henretta Drying Survey — Northern Drying Survey — Southern Drying Survey ■ Teck Coal Mine Operations 	<p>Drying Surveys and Continuous Water Monitoring Stations in the Upper Fording River, FRO LAEMP, 2022</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div data-bbox="1229 2766 1693 2828"> <p>0 0.75 1.5 3 km</p> </div> <div data-bbox="1794 2766 1895 2890"> </div> </div> <p>Projection: North American Datum 1983 UTM Zone 11 U Reproduced under licence from Her Majesty the Queen in Right of Canada, Department of Natural Resources Canada. All rights reserved.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td data-bbox="1229 2921 1431 2999"> Date: May 2023 Project 227202.0014 </td> <td data-bbox="1431 2921 1693 2999" style="text-align: center;"> </td> <td data-bbox="1693 2921 1919 2999" style="text-align: right;"> Figure 2.2 </td> </tr> </table>	Date: May 2023 Project 227202.0014		Figure 2.2
Date: May 2023 Project 227202.0014		Figure 2.2		

Table 2.4: Summary of Teck Routine Water Quality Monitoring Associated with the FRO LAEMP, 2022

Location Description	Water Station ID ^h	Paired Water Quality EMS Number	Regional Water Quality EMS Number	UTM (11U)		Water Quality Samples			
				Easting	Northing	Designation	Field Parameters ^a	All other parameters required under mine permits ^b	Toxicity
Fording River upstream of FRO	FR_UFR1 (RG_FO26 ⁱ and RG_UFR1)	E216777		651459	5566677	Reference	W/M	W/M	Q ^{cd}
Henretta Creek upstream of FRO	FR_HC3 (RG_HENUP)	E300096		655489	5567547	Reference	W/M	W/M	-
Fording River downstream of Henretta Creek	FR_FR1 (RG_FODHE)	0200251		651304	5565451	Exposed	W/M	W/M	-
Fording R. u/s Clode Creek	FR_FOUCL (RG_FOUCL) ^e	N/A		650787	5564418	Exposed	-	-	-
Fording River u/s of Eagle Pit pond decant	FR_FRABEC1 ^e (RG_FODNGD)	N/A		651137	5562881	Exposed	M ^e	M ^e	-
Fording River Multiplate Culvert on Greenhills Access Road	FR_MULTIPATE ^e (RG_MP1)	N/A		651238	5562482	Exposed	-	-	-
Fording River downstream of the North Tailings Pond	FR_FRNTP ^e (RG_FOUSH)	N/A		651122	5561675	Exposed	W ^e	W ^e	-
Fording River upstream of the FRO AWTF-S discharge	FR_FR2 (RG_FOUKI)	0200201		651781	5559984	Exposed	W	W	-
Fording River immediately upstream of the FRO AWTF-S discharge	FR_FR3 ^{eg} (RG_FOBKS)	N/A		652125	5558620	Exposed	M ^e	M ^e	-
Fording River immediately downstream of the FRO AWTF-S discharge	FR_SCOUTDS (RG_SCOUTDS)	N/A		652307	5558501	Exposed	M	M	-
Fording River between Swift and Cataract	FR_FR4 ^e (RG_FOBSC)	0200311		652464	5557943	Exposed	M ^e	M ^e	-
Fording River Operation Old Compliance Point	FR_FRCP1 (RG_FOBCEP)	E300071		652823	5557220	Exposed	W/M	W/M	-
Fording River upstream Porter Creek	FR_FRRD (RG_FRUPO)	E300097		653897	5555925	Exposed	M	M	-
Fording River downstream of Porter	GH_PC2 ^e (RG_FODPO)	E287431		653734	5555147	Exposed	M ^e	M ^e	-
Fording River Operation New Compliance Point.	FR_FRABCH (RG_FO22)	E223753		655293	5552865	Exposed	W/M	W/M	Q ^{cf}
Fording River upstream of Ewin Creek	FR_FR5 ^{ei} (RG_FOU EW)	N/A		657174	5548724	Exposed	M ^e	M ^e	-

Notes: Q = quarterly; M = monthly; W/M = weekly during freshet (March 15 to July 15); Q - quarterly; N/A - Not Applicable; "-" indicates no data available.

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

^b Total and dissolved metals, total and dissolved organic carbon, nutrients, and major ions as per Table 18 of Permit 107517.

^c Chronic toxicity as per Permit 107517 requirements.

^d Not required by Permit 107517; FR_UFR1 is used as a reference location in the chronic toxicity program. Frequency may change depending on the needs of the program.

^e Non permitted location, frequency may change in 2022.

^f Chronic toxicity started in Q4 2018 at this location.

^g This sampling location, previously called GH_FR3, was merged to FR_FR3 for data management purposes.

^h Biological monitoring areas associated with water quality monitoring stations are outlined in brackets.

ⁱ Stations paired for correlation and multivariate analyses but are presented separately in report figures because of their distance from one another.

Analyses of water quality data were completed using the following approaches (see Appendix B section B1.3 for detailed methodology):

- Tabular and graphical (temporal) comparison to applicable benchmarks², updated ECs, screening values, proposed benchmarks, and BCWQGs. A summary of EVWQP benchmarks is also included for reference;
- Principal Component Analysis (PCA) to condense water quality results for use in benthic invertebrate community correlation analysis;
- Graphical spatial comparisons of order constituents (nitrate, total selenium, dissolved cadmium, and sulphate), TDS, total and dissolved nickel, and selenium species;
- Before-after control-impact (BACI) assessment of water quality downstream of treatment pre- and post-commissioning of the FRO-S AWTF using a censored analysis of variance (ANOVA);
- Evaluation of temporal trends in monthly mean water quality concentrations using two tests:
 - Non-parametric seasonal Kendall test (for nitrate concentrations);
 - Two-way censored regression analysis of variance (2-way ANOVA).

2.2.3 Chronic Toxicity Testing

Chronic toxicity testing was conducted by Nautilus Environmental for the annual Regional Chronic Toxicity Study as required by Permit 107517 (WSP 2023). Endpoints for water flea (*Ceriodaphnia dubia*) survival and reproduction, amphipod (*Hyalella azteca*) survival and dry weight, rainbow trout (*Oncorhynchus mykiss*) survival, viability, length, and weight, and fathead minnow (*Pimephales promelas*) hatch, survival, biomass, length, and development were tested for water quality (see Appendix B section B1.6 for detailed methodology). Chronic toxicity tests were completed with water from FR_UFR1 (reference), FR_FRPC1, and FR_FRABCH according to the following: *C. dubia* and *P. subcapitata* were tested quarterly; *O. mykiss* and *H. azteca* were tested in the second and fourth quarter; *P. promelas* was tested in the first and third quarter. See Appendix B section B1.4 for detailed methodology.

² In 2022, potential risks to aquatic life associated with selenium were assessed by evaluation of tissue selenium results in biota as compared to primarily using EVWQP benchmarks for aqueous selenium.



2.3 Hydrology

2.3.1 Drying and Stranding Surveys

In 2022, monthly drying surveys were completed (January to April and August to December) to evaluate surface water connectivity (i.e., seasonal drying) along the Fording River, the Greenhouse Side Channel, Fording River Side Channel 2, and Henretta Creek in the FRO LAEMP study area (Table 2.3; Figure 2.2). Stranding surveys also evaluated surface water connectivity each month (i.e., approximately two weeks apart from drying surveys) at the same FRO LAEMP study area locations (Figure 2.2), except in the Fording River downstream of FR_FRRD, the Greenhouse Side Channel, or Fording River Side Channel 2. Henretta Creek could not be assessed during the FRO LAEMP or stranding surveys by field crews in November or December 2022 due to hazards associated with the Turnbull landslide. During the surveys, field crews walked each section to delineate any extent of drying, isolated pools, fish, and wildlife observations. Additionally, several hydrological measurements were collected by field crews: water level, flow, and temperature (see Appendix B section B.2.1 for detailed methodology). Analyses of drying survey data were completed using the following approaches (see Appendix B section B2.1.1 for detailed methodology).

- Tabular summaries of dry days for each survey section and hydrometric station for each year from 2017 to 2022;
- Dry areas were mapped for each month when drying was observed.

2.3.2 Water Level and Temperature Loggers

Water level and temperature were continuously monitored at 13 hydrometric stations within the Fording River in 2022 using a combination of three loggers (Table 2.3; Figure 2.2). The loggers were programmed to record water level and water temperature at 15-minute intervals. Data was downloaded from the loggers pre-freshet in April, post-freshet in July, and October before freeze-up to avoid data loss (see Appendix B section B.2.2 for detailed methodology). Analyses of water level and temperature logger data were completed using the following approaches (see Appendix B section B2.2.2 for detailed methodology):

- A water temperature, stage, and discharge time series were plotted for each station;
- Non-parametric seasonal Kendall test for changes in water temperature at monitoring stations;
- Daily mean water temperature differences downstream compared to upstream (RG_SCOUTDS – RG_FOBKS) of the FRO-S AWTF outfall was tabulated and plotted to screen for any 1°C temperature difference;



- Changes in the difference of daily mean water temperature upstream (RG_FOBKS) and downstream (RG_SCOUTD) of the FRO-S AWTF outfall based on model predictions and corresponding confidence intervals pre- and post-commissioning.

2.4 Substrate Quality

2.4.1 Sediment

2.4.1.1 Sample Collection

Sediment quality samples were collected concurrently with benthic invertebrate sampling at eight areas in September 2022 (RG_HENUP, RG_FO26, RG_FOUKI, RG_FOBKS, RG_SCOUTDS, RG_FOBCP, RG_FRUPO, and RG_FO22; Table 2.1). Five replicates were collected at mine-exposed areas, and three replicates were collected at reference areas, consistent with methods outlined in the 2021 to 2023 RAEMP study design (Minnow 2021). See Appendix B section B3.1.1 for detailed methodology.

2.4.1.2 Laboratory and Data Analysis

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

- Tabular and graphical comparison to British Columbia Sediment Quality Guidelines (WSQGs), except for selenium concentrations which were compared to an alert concentration considered equivalent to an upper WSQG. The sediment data were also compared to regional normal ranges.
- Graphical spatial comparisons of chemical parameters;
- BACI assessment of sediment quality downstream of treatment pre- and post-commissioning of the FRO-S AWTF using a censored ANOVA;

2.4.2 Calcite

Calcite presence and concretion was measured on 100 pebbles at each biological station concurrent with benthic invertebrate community sampling and the associated pebble counts. For detailed methodology see Appendix B section B3.2:

- Calcite indices were tabulated for temporal comparisons;
- Calcite indices for 2022 were plotted for spatial comparisons.



2.5 Benthic Invertebrates

2.5.1 Community Structure

2.5.1.1 Sample Collection

Triplicate BIC samples were collected from each biological monitoring area in September, except at RG_FOBCP and RG_FO22 where replicates of five were taken (Table 2.1). Benthic invertebrate community sampling followed the CABIN protocol, which involved a 3-minute travelling kick into a net with a triangular aperture measuring 36 cm per side and a mesh having 400-µm openings (Environment Canada 2012). Replicates were collected from stations within a biological monitoring area either in separate riffles or in riffle sections a minimum of 50 m apart. Supporting measures, including habitat characterization, were also collected concurrent with sampling. For detailed methodology, see Appendix B section B4.2.1.

2.5.1.2 Laboratory and Data Analysis

Benthic invertebrate community samples were analyzed by Cordillera Consulting (lead taxonomist Scott Finlayson), in Summerland BC, for sorting and taxonomic identification. Total organism abundance was reported for every distinct taxon identified in each sample. Benthic invertebrate community structure was evaluated based on total abundance, taxonomic richness (to the lowest practicable level of taxonomy), and the abundances and proportional abundances (%) of major taxonomic groups. Analyses of benthic invertebrate community data were completed using the following approaches (see Appendix B sections B4.2.2 to B4.2.4 for detailed methodology):

- Graphical comparison of data relative to regional³ and site-specific normal ranges⁴;
- Evaluation of temporal changes in endpoints from mine-exposed and reference areas using a two-way ANOVA;
- BACI assessment of BIC downstream of treatment pre- and post-commissioning of the FRO-S AWTF using an ANOVA.

³ The reference normal range as presented in the RAEMP represents the 2.5th and 75th percentiles of the distribution of reference area data (pooled 2012 to 2019 data) reported in the 2017 to 2019 RAEMP report (Minnow 2020).

⁴ Site-specific normal ranges represent the 2.5th and 97.5 percentile for a given area as determined by habitat predictors for a given site in relation to the complete set of Elk Valley monitoring areas. The site-specific normal ranges were estimated using regression modelling as presented in the RAEMP (Minnow 2020).



2.5.2 Biomass and Density

2.5.2.1 Sample Collection

Benthic invertebrate biomass and density samples were collected in September from 2017 to 2022 to assess biological productivity before and after commissioning of the FRO-S AWTF and the FRO-N SRF. Samples for analysis of benthic invertebrate density and biomass were collected using a Hess sampler (0.1 m² sampling area) with 500 µm mesh. Ten replicate stations were sampled at each of twelve biological monitoring areas in September 2022 for analysis of benthic invertebrate biomass and density (Table 2.1; Figure 2.1). For detailed methodology, see Appendix B section B4.3.1.

2.5.2.2 Laboratory and Data Analysis

Benthic invertebrate biomass and density samples were sent to Zeas Inc. (lead taxonomist Danuta Zaranko), in Nobleton ON, for sorting and taxonomic identification. Analyses of benthic invertebrate productivity data were completed using the following approaches (see Appendix B sections B4.3.2 and B4.3.3 for detailed methodology):

- Graphical comparison of benthic invertebrate biomass and density changes temporally and spatially;
- BACI assessment of benthic invertebrate biomass and density downstream of treatment pre- and post-commissioning of the FRO-S AWTF using an ANOVA.

2.5.3 Tissue Selenium Concentrations

2.5.3.1 Sample Collection and Analysis

Benthic invertebrate samples were collected for tissue chemistry using the kick and sweep sampling method (described in greater detail in Appendix B section B4.2.1), except collections were not timed, and kicking continued until sufficient organisms were collected for analysis. All sampling events included collection of a composite sample of a variety of benthic invertebrate taxa. For detailed methodology, see Appendix B section B4.4.1.

2.5.3.2 Laboratory and Data Analysis

Benthic invertebrate tissue samples were analyzed by TrichAnalytics Inc. in Saanichton, BC for various chemical parameters. Analyses of composite-taxa benthic invertebrate tissue selenium data were completed using the following approaches (see Appendix B sections B4.4.2 and B4.4.3 for detailed methodology):

- Graphical comparison of tissue selenium concentrations relative to applicable benchmarks and the regional normal range;



- Comparison of observed tissue selenium concentrations to those predicted using a selenium bioaccumulation model and selenium bioaccumulation tool;
- BACI assessment of benthic invertebrate tissue selenium concentrations downstream of treatment pre- and post-commissioning of the FRO-S AWTF using an ANOVA.

2.6 Henretta Lake

A bathymetry survey was conducted to improve understanding of water depths in Henretta Lake. Water samples at various depths, *in situ* water profiles, and data loggers were used to understand water chemistry and temperature-oxygen dynamics within Henretta Lake and to assess fish habitat availability. For detailed methodology, see Appendix B section B.5.

2.7 Fish

2.7.1 Tissue Sample and Meristic Data Collection

Non-lethal sampling of WCT tissue was conducted to measure muscle tissue concentrations, as is required under the RAEMP, once per monitoring cycle (Minnow 2021), and as part of the AMP response framework for confirmatory sampling at the Multiplate Culvert in 2022. Westslope cutthroat trout tissue sampling was also conducted in Henretta Lake in September 2022 as part of the RAEMP lentic study. All fish caught under the RAEMP were assessed for anomalies (deformities, erosions [fin and gill], lesions, tumors, injuries, infections and/or parasites) and body condition was determined. In addition to fish sampling under the RAEMP, Teck collects tissue (dorsal muscle and whole body) samples from WCT incidental mortalities (e.g., found or incidentals from fish salvages) when relevant, to add valuable information to the dataset on fish selenium concentrations. For detailed methodology, see Appendix B section B6.1.

2.7.1.1 Laboratory and Data Analysis

Westslope Cutthroat Trout tissue samples were analyzed by TrichAnalytics Inc. in Saanichton, BC for various chemical parameters. Analyses of WCT tissue selenium, meristic, body condition, and anomaly data collected under the RAEMP were completed using the following approaches (see Appendix B sections B6.2 and B6.3 for detailed methodology):

- Graphical comparison of tissue selenium concentrations relative to applicable site-specific muscle benchmark and, where applicable, to the British Columbia guideline for fish muscle;



- Graphical comparison of Fulton’s condition factor among RAEMP areas, including reference areas. Body condition of WCT was calculated using Fulton’s condition factor (see Section B6.3);
- Tabulation of RAEMP WCT meristic, condition, and anomaly data

2.7.2 Fish Population Monitoring

In 2022 the Westslope Cutthroat Trout Population Monitoring Program in the upper Fording River continued to implement the standard protocols introduced in 2021 (e.g., more systematic redd surveys as well as single-pass electrofishing at large [~300 m] open sites [Thorley et al 2022a]). The program was further expanded to include increased electrofishing coverage as well as night snorkeling; as an alternative and less invasive method of enumerating juveniles, night-time dip-net surveys; to inform the length distributions of age-0, and Passive Integrated Transponder tagging captured fish; to better understand capture efficiencies, movement, growth, and survival and angling in Henretta Lake to supplement snorkeling data for fish >200 mm, to improve the understanding of WCT use of Henretta Lake (Penman et al. 2022; Thorley et al. 2023a; Thorley et al. 2022b). The expanded monitoring program helped to reduce uncertainty about status and trends of the upper Fording River Cutthroat Trout population as well as to answer key questions to assess the carrying capacity, intrinsic productivity, and viability of the population. A brief summary of analyses conducted as part of the Population Monitoring Program is provided below. For detailed methodology see Appendix B section B6.4 and Thorley et al 2023a.

- The timing of spawning and spatial distribution of redds in the UFR mainstem and tributaries were documented from the redd surveys and an estimate of the number of unique nests present was modeled using the Area Under the Curve model (Hilborn et al. 1999; Su et al. 2001, Thorley et al. 2023a).
- The length, weight, distribution, and density of age-1 and age-2+ fish were estimated based on electrofishing and night snorkeling. The length of age-0s were estimated based on available electrofishing and night dip-net surveys.
- Body condition of age-1 and age-2+ (90 to 169 mm fork length) was estimated using an allometric mass-length model that uses a site-specific scaling factor for this size class⁵ (He et al. 2008; Thorley et al., 2023a; Thorley et al., 2023b)

⁵ Body condition for adults was calculated using Fulton’s condition index which uses a defined scaling factor of 3.



- Sub adult and adult (≥ 200 mm fork length) abundance was estimated based on daytime snorkel surveys. Age-1 and age-2+ abundance were estimated from electrofishing and nighttime upstream snorkel surveys.
- Egg to age-1 survival (Pulkkinen et al. 2013) was calculated by dividing the estimate of the age-1 individuals by the total egg deposition the previous year. As such, the egg to age-1 survival was reported for fish spawned in 2021.

2.8 Integrated Analysis

Factors contributing to BIC variation within the FRO LAEMP study area were evaluated by comparing BIC endpoints with water quality, and where applicable, habitat variables. Correlation analysis and canonical correspondence analysis (CCAs) were conducted on data from the full study area, and then three individual study areas (upper, middle, and lower) within the full study area. The upper, middle, and lower study areas were grouped based on spatial differences of habitat (water depth, water flow/velocity, water temperature, substrate size, etc.) and water quality identified in previous FRO LAEMP reports (Minnow and Lotic 2019b, 2020b, 2021b, 2022). Integrated analyses were completed using the following approaches (for detailed methodology, see Appendix B section B7):

- Spearman Rank Correlations were conducted between key BIC endpoints and physical and chemical variables (Only significant [corrected $\alpha = 0.05/38 = 0.00132$] and strong ($r_s \geq |0.6|$) correlations were considered in the interpretation);
- A CCA was performed to investigate patterns in BIC in September of 2018 to 2022 relative to habitat and physical and chemical variables. Importance of individual stressor and habitat variables were investigated with permutation-based ANOVAs.



3 RESULTS AND DISCUSSION

3.1 FRO-S AWTF Overview

The FRO-S AWTF began commissioning on December 22, 2021, and has a maximum hydraulic capacity of 21,053 m³/d. Total water treatment was ~2,400 m³/d at the beginning of 2022 during the commissioning period (Figure 3.1). The facility began operating near capacity in September 2022, treating the majority of available influent water (~17,000 m³/d) before decreasing to ~13,000 m³/d by the end of the year when available influent flows decreased (Figure 3.1). There were intermittent periods where no or significantly reduced discharge rates occurred throughout 2022, when the facility was in recirculation for various reasons (e.g., maintenance). Water from Swift-Cataract Creek represented the majority of water treated throughout the first six months of FRO-S AWTF operation, but treatment of Kilmarnock Creek was initiated in the latter half of 2022, with volumes dependent on operational requirements for temperature and treatment performance. The percentage of treated water from the FRO-S AWTF in the Fording River downstream of the outfall (i.e., at FR_SCOUTDS) ranged from 0% during shutdown or recirculation periods to as high as 13% during periods of low flow (i.e., over winter; Appendix Figure E.15). Treated water from both the Fording River and Kilmarnock Creek outfalls have the potential to influence flows further downstream (e.g., via the Greenhouse Side Channel) through complex groundwater to surface water interactions that are being studied elsewhere (see SNC Lavalin 2022). Although the FRO-S AWTF was designed to remove nitrate and selenium, it also doses antiscalant to prevent calcite precipitation within the treatment facility and downstream, and this antiscalant contains molybdenum.

3.2 Study Question #1

Study Question #1 (Are nitrate concentrations in the study area changing, and do they have the potential for adverse effects on biota?) was evaluated through monitoring of water chemistry in relation to BIC data, as well as chronic toxicity.

3.2.1 Aqueous Nitrate Concentrations

Nitrate concentrations increased gradually within the FRO LAEMP study area since 2012, but concentrations were below the updated ECs for nitrate throughout most of 2022. Nitrate concentrations have increased the most over time in the section of the study area between the Multiplate Culvert (RG_MP1) and downstream of the former Cataract Creek confluence (RG_FOBCP), with smaller increases in the lower study area (i.e., downstream of the Greenhouse Side Channel confluence to Ewin Creek; Figure 2.2; Appendix Table D.1). Concentrations have decreased over time at the area downstream from the Henretta Creek confluence with the



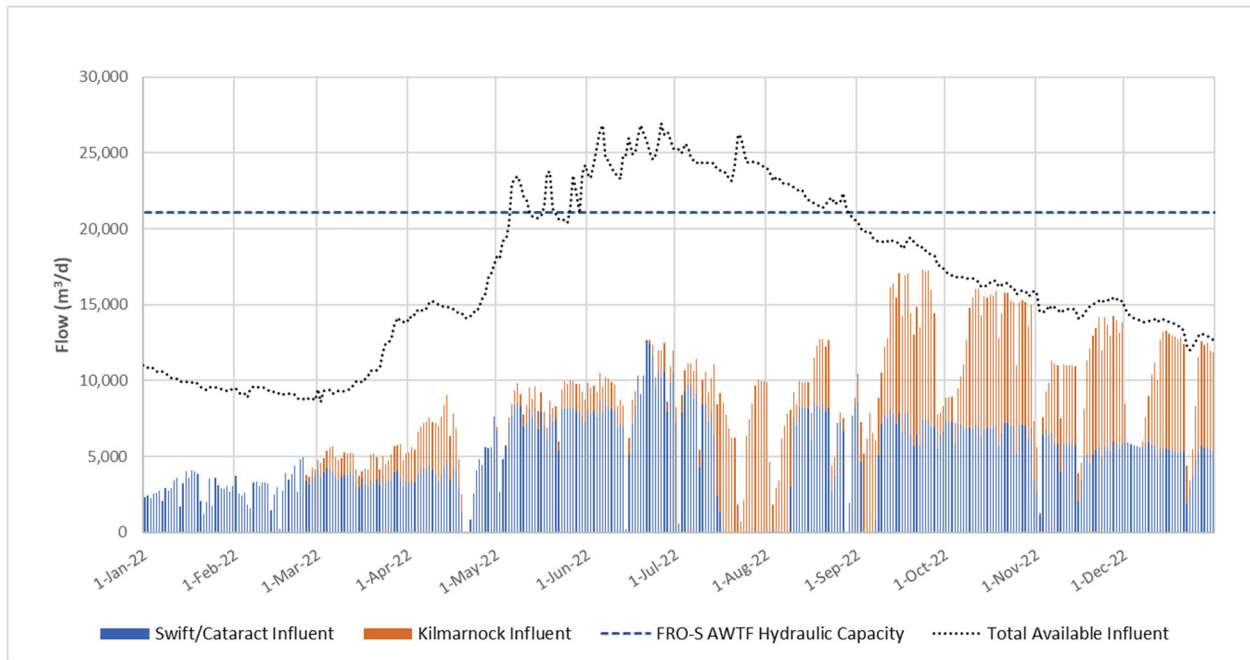


Figure 3.1: FRO-S AWTF Discharge Rates Relative to Total Available Influent, FRO LAEMP 2022

Notes: Total hydraulic capacity of the FRO-S AWTF was 21,035 m³/d. The Swift/Cataract Influent was approximately equal to the discharge rates at the Fording River Outfall, while the Kilmarnock Creek Influent was approximately equal to the discharge rates at the Kilmarnock Creek Outfall.

Fording River (RG_FODHE), which is the furthest upstream mine-exposed monitoring area (Appendix Tables D.1 and D.2; Appendix Figure D.14). In 2022, nitrate concentrations were below the updated ECs in all samples collected from monitoring areas between RG_FODHE and RG_FOUNGD (downstream of the Concrete Arch). Some exceedances of Level 1 (RG_FODNGD, RG_MP1, RG_FOUSH, RG_FRUPO), Level 2 (RG_FOBCP), and Level 3 (RG_SCOUTDS, RG_FOBSC, RG_FO22) updated ECs occurred at other monitoring areas in 2022, however, they were in a small proportion of samples confined to periods of seasonal low flow (Appendix Table D.3; Appendix Figure D.14). For EVWQP nitrate benchmark concentrations see Appendix Table D.5.

Reduced nitrate concentrations compared to previous years were observed at some areas downstream of the FRO-S AWTF outfall relative to the area (RG_FOBKS) immediately upstream of treatment in 2022 following the commissioning of water treatment. Before-after control-impact (BACI) analysis identified significantly lower nitrate concentrations at most FRO LAEMP monitoring areas downstream of the Greenhouse Side Channel confluence (i.e., the lower study area) relative to pre-commissioning concentrations and relative to RG_FOBKS; however, concentrations between immediately downstream of the outfall (RG_SCOUTDS) and upstream of the Greenhouse Side Channel confluence (RG_FRCP1SW) did not change significantly compared to pre-commissioning concentrations (Figure 3.2; Appendix Table D.4; Appendix Figures D.14 and D.55). The spatial differences in nitrate concentrations are likely related to the influence of treated Kilmarnock Creek water (Figure 3.1) through the groundwater pathway to the lower study area (SNC Lavalin 2022). Changes in nitrate concentrations downstream of the FRO-S AWTF outfall will continue to be assessed through future FRO LAEMP monitoring.

3.2.2 Biota

3.2.2.1 Benthic Invertebrate Community

Key metrics used to assess BIC (e.g., % Ephemeroptera, Ephemeroptera abundance) correlated strongly with nitrate concentrations in the FRO LAEMP study area, however, relationships among nitrate and other factors (e.g., habitat variables, other water quality constituents) precludes a direct causal link between nitrate and BIC structure. Benthic invertebrate community structure is notably different (Figure 3.3; Appendix Figures G.1 to G.32; more detail in Section 3.6.1 below) in areas with elevated nitrate concentrations compared to areas with relatively lower concentrations, including reference areas (Appendix Figure D.14); however, interpretation is confounded by elevated concentrations of other mine-related constituents (i.e., above concentrations expected to potentially cause effects in biota; Figure 3.4; Appendix Figures D.1 to D.22; Section 3.6.2 below) and habitat changes that occur concurrently with changes in nitrate concentrations (Appendix Tables I.1 to I.5; more detail



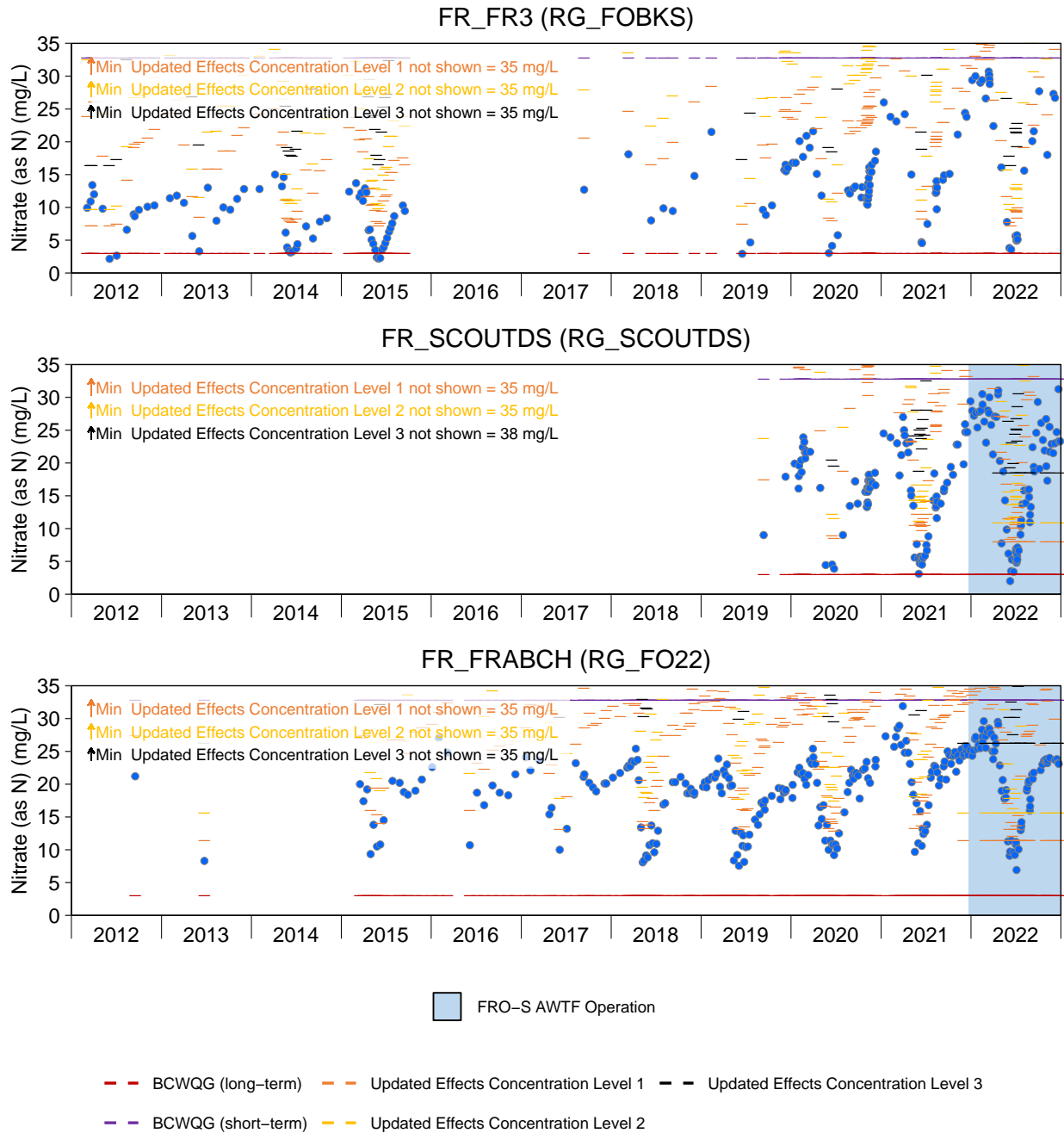


Figure 2: Time Series Plots for Nitrate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

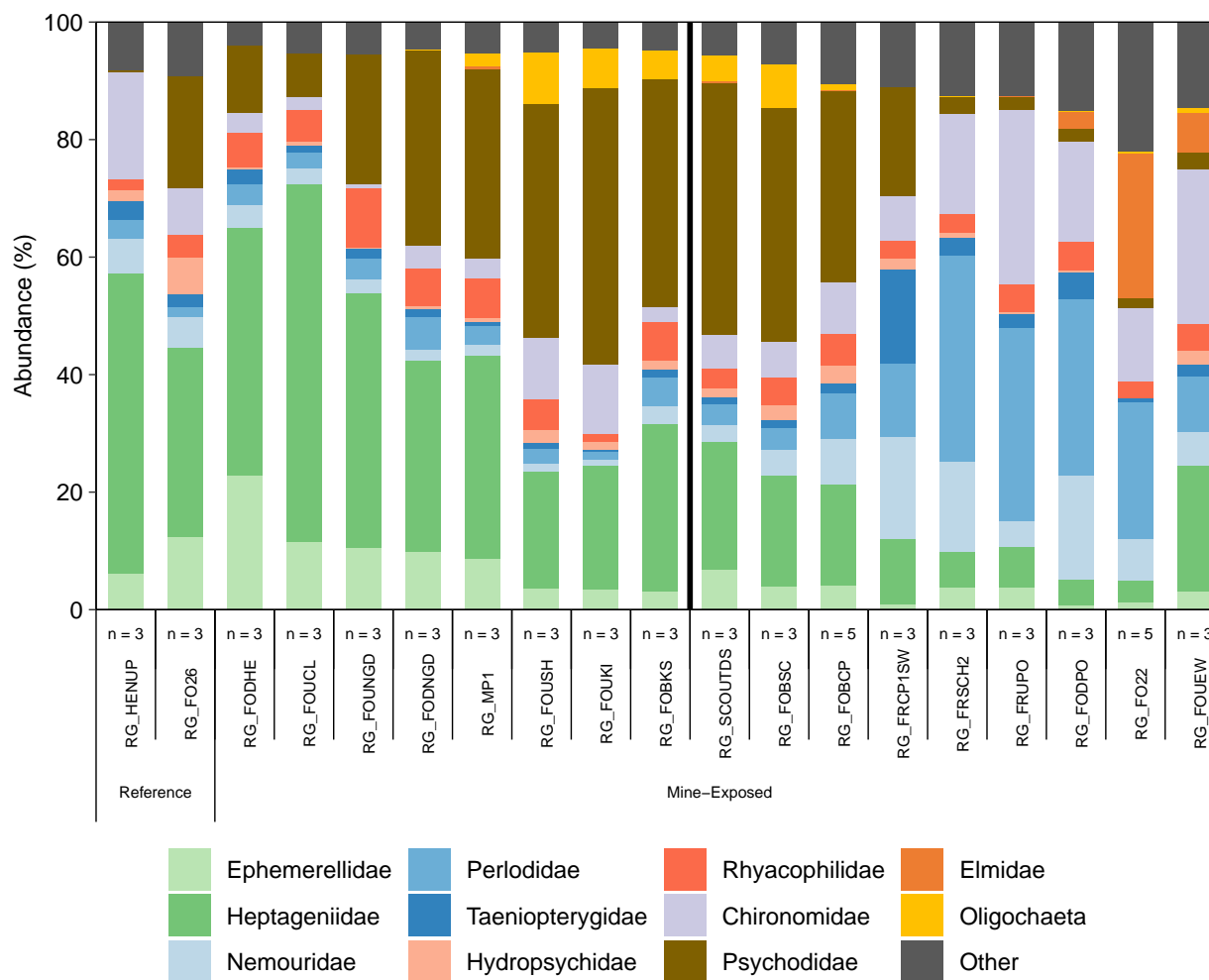


Figure 3.3: Benthic Invertebrate Community Percent Composition, FRO LAEMP, September 2022

Notes: Green colors represent Ephemeroptera taxa, blue colors represent Plecoptera taxa, red colors represent Tricoptera taxa, purple color represent Chironomidae taxa, brown colour represents Psychodidae taxa, orange color represents Coleoptera taxa (Elmidae), yellow color represents Oligochaeta taxa, and grey color represents other remaining taxa. Vertical black line denotes upstream and downstream of the FRO-S AWTF outfall location. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

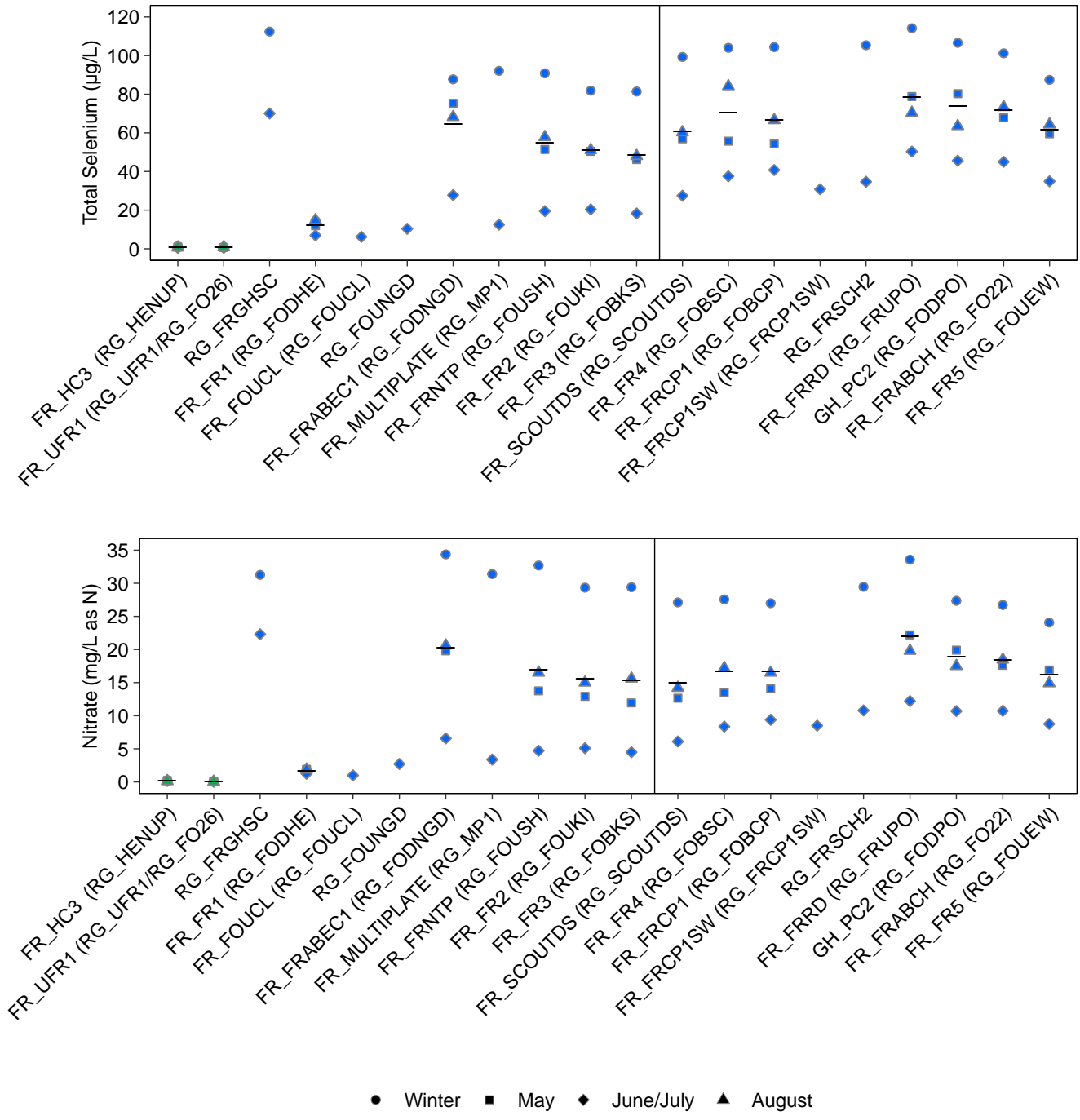


Figure 4: Seasonal Means for Select Water Quality Constituents, FRO LAEMP, 2022

Notes: Winter is comprised of December 2021 to March 2022. Only annual means are depicted with a black bar and are only presented when data is available from all four seasons. Reference areas are shown in green and mine-exposed areas are shown in blue. Censored values are shown with hollow shapes. Solid black line separates biological monitoring areas upstream (left side) and downstream (right side) of the FRO-S AWTF outfall location. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

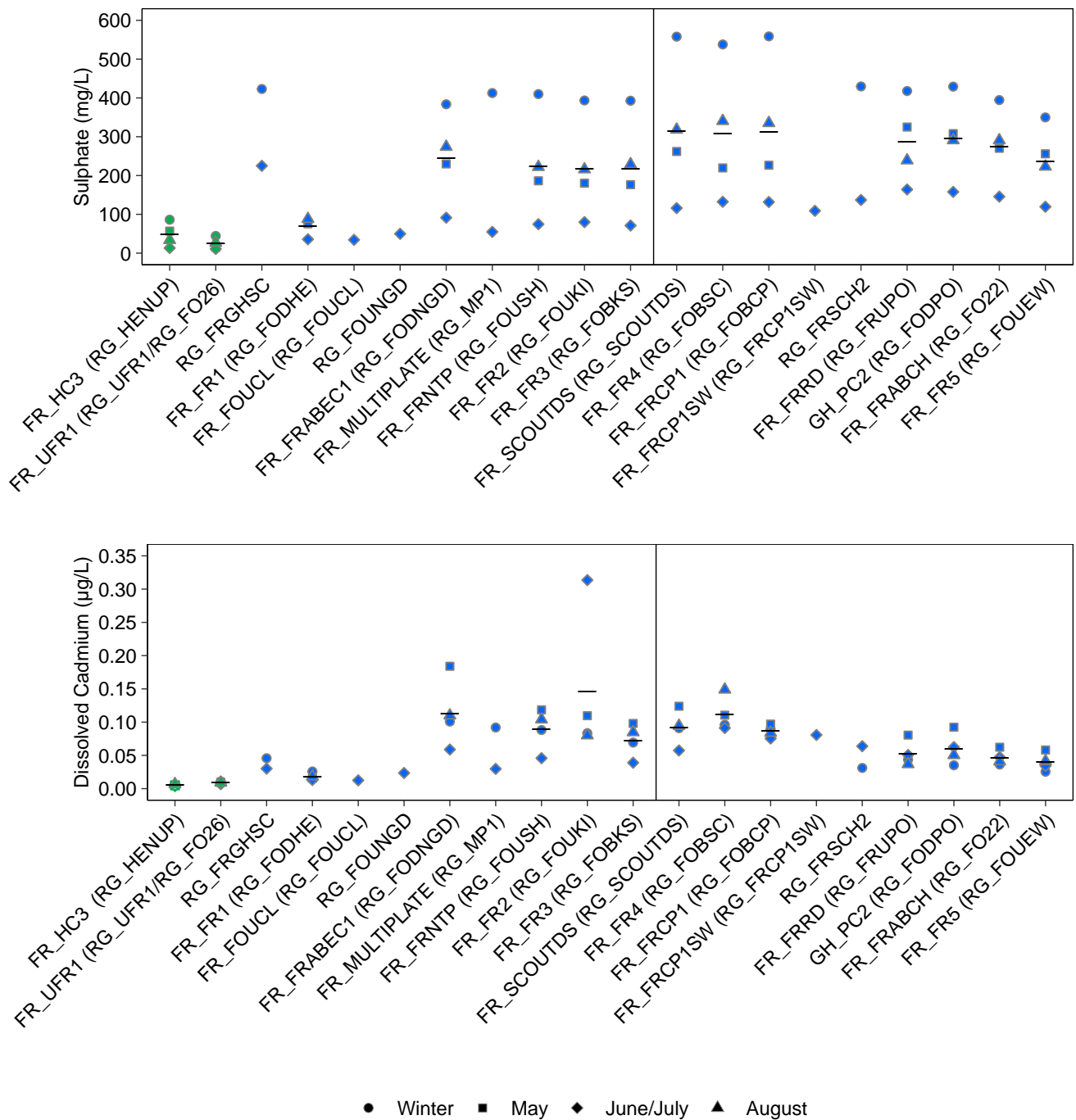


Figure 4: Seasonal Means for Select Water Quality Constituents, FRO LAEMP, 2022

Notes: Winter is comprised of December 2021 to March 2022. Only annual means are depicted with a black bar and are only presented when data is available from all four seasons. Reference areas are shown in green and mine-exposed areas are shown in blue. Censored values are shown with hollow shapes. Solid black line separates biological monitoring areas upstream (left side) and downstream (right side) of the FRO-S AWTF outfall location. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

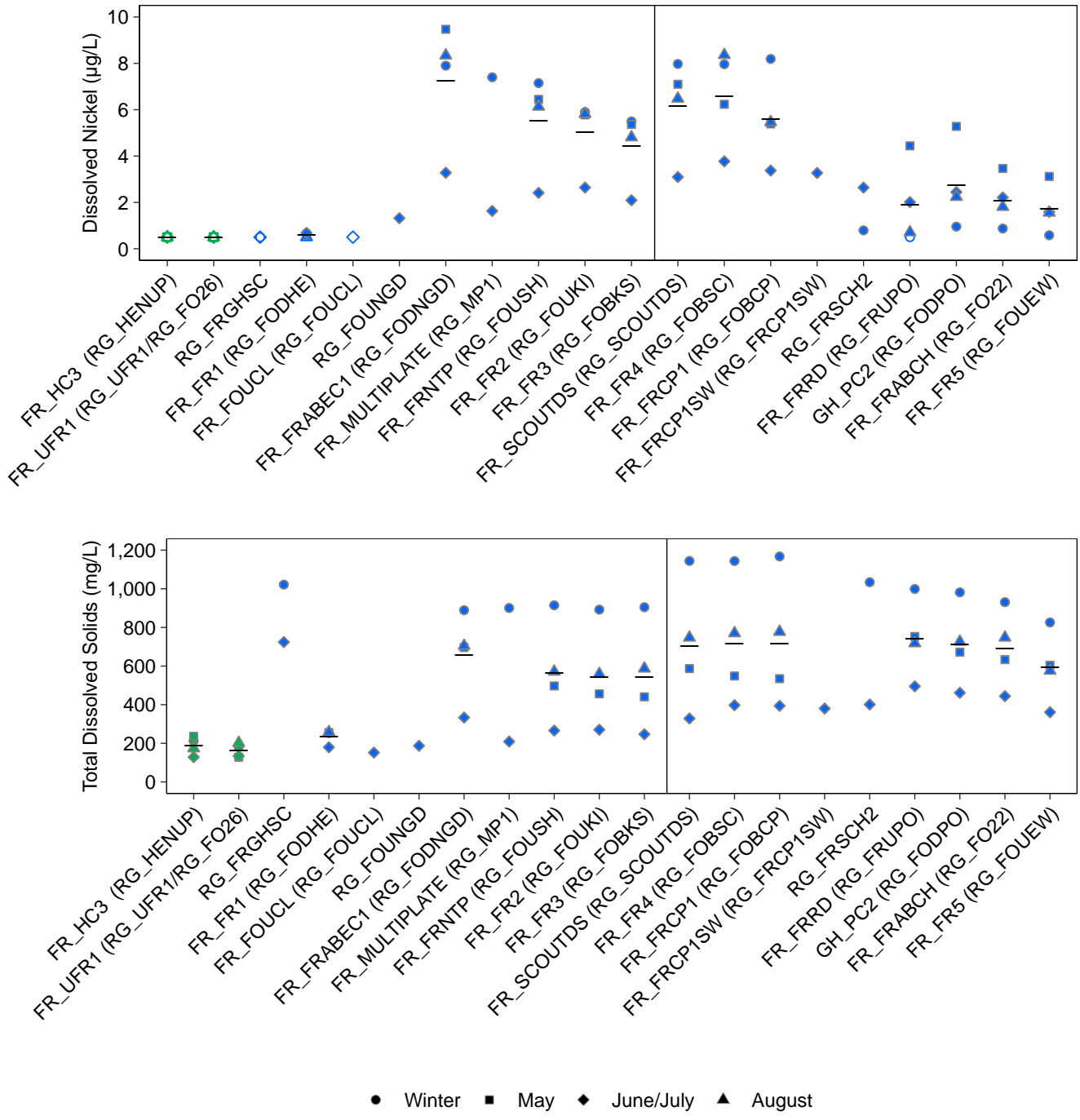


Figure 4: Seasonal Means for Select Water Quality Constituents, FRO LAEMP, 2022

Notes: Winter is comprised of December 2021 to March 2022. Only annual means are depicted with a black bar and are only presented when data is available from all four seasons. Reference areas are shown in green and mine-exposed areas are shown in blue. Censored values are shown with hollow shapes. Solid black line separates biological monitoring areas upstream (left side) and downstream (right side) of the FRO-S AWTF outfall location. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

in Section 3.6 below). Nitrate concentrations correlated strongly and negatively with Ephemeroptera (i.e., mayfly) endpoints, but correlated positively with Plecoptera (i.e., stonefly) endpoints, suggesting that if nitrate was contributing to differences in BIC structure among areas, its primary influence is on mayflies (Beketov 2004; Camargo et al. 2005), and other factors (e.g., substrate size, water temperature, depth, and velocity, channel width) may be influencing the presence and abundance of other taxa (Appendix Table H.2; Appendix Figures H.6 to H.10; more detail in Section 3.6 below). The lowest relative abundance of Ephemeroptera and the highest relative abundance of Plecoptera were observed through the middle and lower study areas, which stretch from downstream of the South Tailings Pond (STP; RG_FOUKI) to Ewin Creek (RG_FOU EW), with the biggest differences observed downstream of the Greenhouse side channel confluence in the lower study area (Figure 3.3; Appendix Figures G.1 to G.32). This difference in community structure may also be related, in part, to taxa differences in sensitivity to mine-related constituents (Clements et al. 2000; Clements 2004; Pond et al. 2008; Cormier et al. 2013; Boehme et al. 2016; Minnow and Lotic 2021b, 2022), including nitrate (Beketov 2004; Camargo et al. 2005), and taxa-differences in habitat preferences as the physical structure of the Fording River changes from upstream to downstream (Peckarsky 1979; Vannote et al. 1980; Kaller and Harman 2003; Dewson et al. 2007; Alvarez-Cabria et al. 2017; Leszczynska et al. 2017; Cummins 2019; Minnow and Lotic 2021b, 2022).

Before-after control-impact assessments of BIC related to water treatment did not identify any notable (i.e., increases or decreases in sensitive taxa) statistical changes in BIC endpoints related to FRO-S AWTF commissioning, even in the lower study area where nitrate concentrations decreased (Appendix Table G.1; Appendix Figures G.33 to G.48; more detail in Section 3.6 below).

3.2.2.2 Chronic Toxicity

Nitrate concentrations have been associated with adverse effects to biological endpoints under the Chronic Toxicity Program using water from stations within the FRO LAEMP study area in previous years, but recent chronic toxicity studies have not identified nitrate as a potential causative factor (Appendix Figure D.56; WSP 2023). At the station located downstream of the former Cataract Creek confluence with the Fording River (FR_FRCP1), adverse effects associated with nitrate concentrations have not been observed in any test since 2020 (Appendix Figure D.56). From 2015 to 2020, however, nitrate, combined with other constituents such as sulphate, TDS, and/or nickel, were identified as contributing to possible or likely effects to water flea (*C. dubia*) reproduction (most years) and amphipod (*H. azteca*) dry weight (2016, 2017, and 2018) during low flow periods, which were largely driven by concentrated water



from Cataract Creek prior to diversion in August 2019. In 2022, algae (*P. subcapitata*) cell yield was the only possible adverse effect identified at FR_FRCP1 (Q1 and Q4), but the cause of this effect was unknown. Fewer adverse effects from water quality in 2022 compared to previous years may be a result of water quality changes (nickel and selenium concentrations were lower at FR_FRCP1 post-commissioning of the FRO-S AWTF [Appendix Table D.4; Appendix Figure D.55]). Further downstream at the Compliance Point (FR_FRABCH), nitrate concentrations have not been associated with adverse effects to biota in recent years (Appendix Figure D.56). Overall, nitrate concentrations have not been identified as likely contributing to effects to biota within the FRO LAEMP study area based on quarterly chronic toxicity tests on algae, water fleas, amphipods, fathead minnow, and rainbow trout.

3.2.3 Summary

Although nitrate concentrations have increased throughout the FRO LAEMP study area, evidence for direct effects of nitrate on biota is limited and interpretation is confounded by the covariation of multiple mine-related constituents with nitrate and a change in habitat throughout the study area concurrent with changes in BIC structure. In addition, while nitrate concentrations exceeded one or more updated ECs at a number of areas within the FRO LAEMP study area during low flow months (i.e., late fall and winter), concentrations in the majority of samples were below concentrations expected to cause effects in sensitive species. Overall, no effects on taxa abundance were observed, and chronic toxicity studies identified very few effects with water from the study area, of which none were attributed to nitrate concentrations in recent years. In response to Study Question #1, monitoring under the FRO LAEMP has indicated that yes, nitrate concentrations have increased in the study area, but whether nitrate is having a direct effect on biota cannot be conclusively answered given the covariation among multiple stressors and habitat variables. As such, this part of Study Question #1 is more appropriately addressed under both Study Question #5 (Section 3.6) and Study Question #6 (Section 3.7). As treatment continues to be implemented in the FRO LAEMP study area, nitrate concentrations are expected to decrease, thus the potential for adverse effects to biota is expected to remain low.

3.3 Study Question #2

Study Question #2 (Is water treatment affecting biological productivity downstream in the Fording River?) was evaluated through monitoring of aqueous nutrient concentrations (i.e., total phosphorus and orthophosphate), periphyton presence and thickness, and benthic invertebrate biomass and density.



3.3.1 Aqueous Nutrient Concentrations

Total phosphorus and orthophosphate concentrations increased downstream of the FRO-S AWTF outfall relative to immediately upstream of treatment (RG_FOBKS). Before-after-control-impact analysis identified statistically significant increases in both total phosphorus and orthophosphate concentrations at RG_SCOUTDS (immediately downstream of the FRO-S AWTF outfall) to RG_FOBKP (downstream of the former Cataract Creek confluence) relative to concentrations pre-commissioning and relative to RG_FOBKS (Figure 3.5; Appendix Table D.4; Appendix Figures D.16, D.17, and D.55). These increases were spatially limited, however, and not observed further downstream.

3.3.2 Productivity

Benthic invertebrate productivity increased immediately downstream of the FRO-S AWTF outfall relative to upstream. Before-after control-impact analysis identified statistically significant increases in both benthic invertebrate biomass and density at RG_SCOUTDS relative to pre-commissioning and relative to RG_FOBKS, while biomass increased slightly at the Compliance Point (RG_FO22), density was similar relative to RG_FOBKS (Figure 3.6; Appendix Table G.2; Appendix Figures G.49 to G.53). Increased benthic invertebrate productivity did not correspond with a noticeable change in periphyton visual scores, as areas downstream of the outfall were similar to areas upstream and largely scored as a 2 (rocks slightly slippery, periphyton thickness between 0.5 mm and 1 mm) or 3 (rocks noticeably slippery, periphyton thickness between 1 mm and 5 mm; Appendix Table I.3).

3.3.3 Summary

An increase in aqueous phosphorus concentrations and benthic invertebrate productivity was identified post-commissioning of the FRO-S AWTF. Total phosphorous and orthophosphate concentrations were significantly elevated at monitoring areas between the FRO-S AWTF outfall to the Greenhouse side channel confluence but decreased with distance downstream. Increased benthic invertebrate productivity was localized to the area immediately downstream of the outfall location (RG_SCOUTDS) but visual periphyton assessments were not elevated downstream of treatment. The increased benthic invertebrate productivity was likely driven by higher phosphorus concentrations, however, values remained within the range observed throughout the study area, and no evidence of increased periphyton or algal growth was observed. In response to the study question, monitoring under the FRO LAEMP indicated that water treatment has led to an increase in secondary (benthic invertebrate) productivity downstream of the FRO-S AWTF outfall location based on the first year of



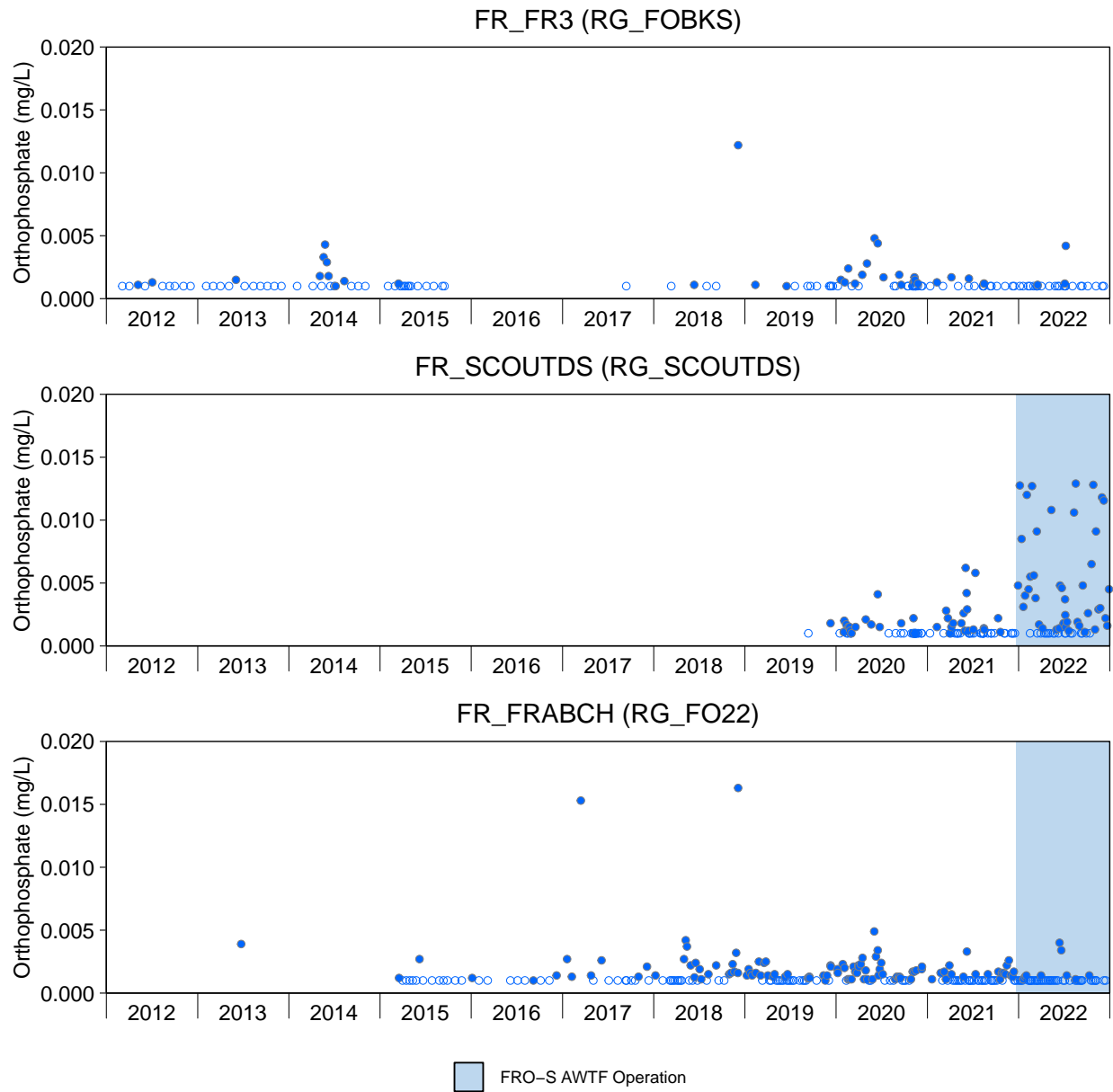


Figure 5: Time Series Plots for Orthophosphate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. The interim screening value for orthophosphate (0.006 mg/L) represent the 97.5th percentile of concentrations observed in reference areas over the growing season (Minnow 2020).

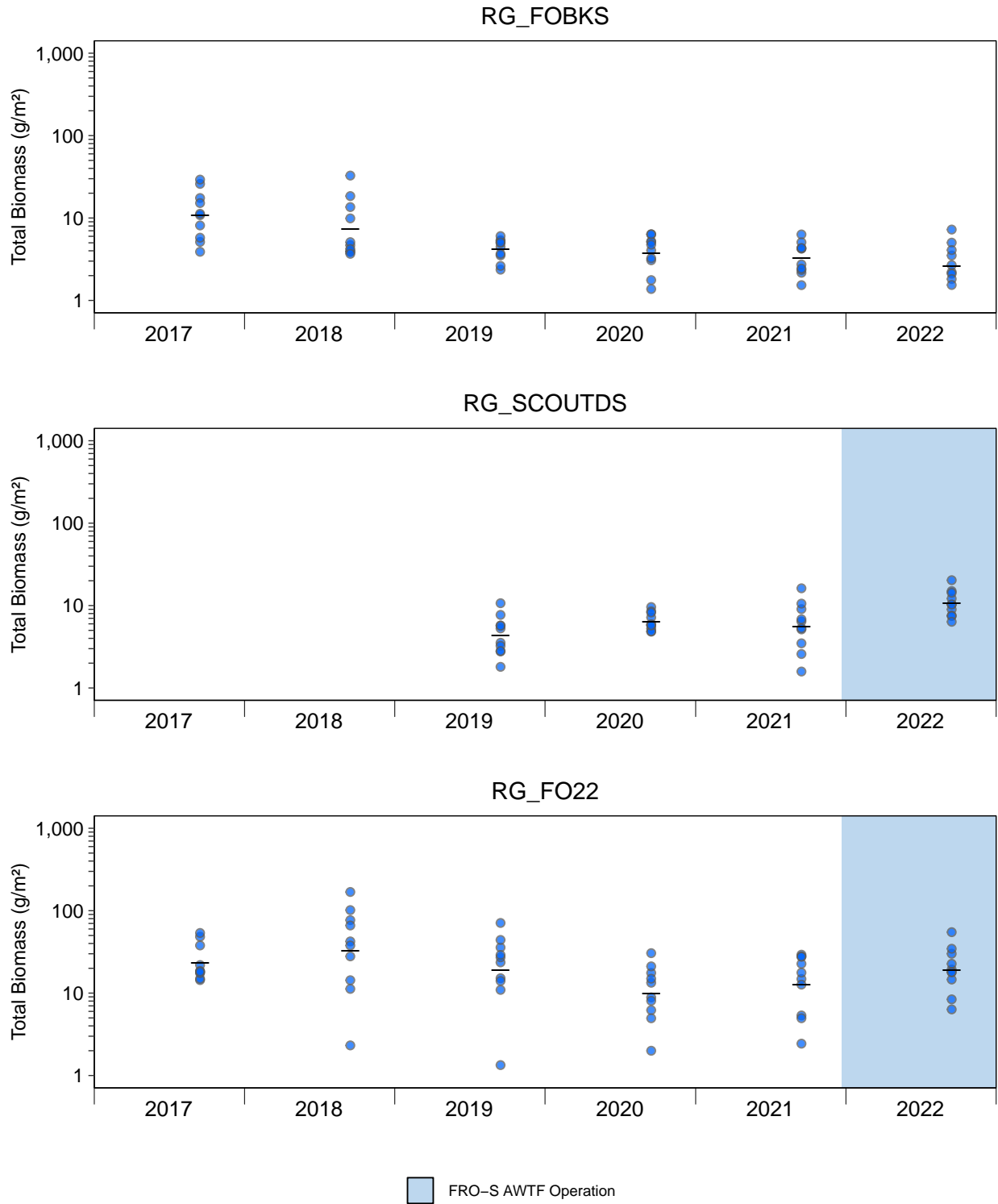


Figure 6: Total Benthic Invertebrate Biomass (Hess Sampling) by Year, FRO LAEMP, September 2017 to 2022

Note: Green represents reference areas and blue represents exposed areas. Black lines denote the geometric means.

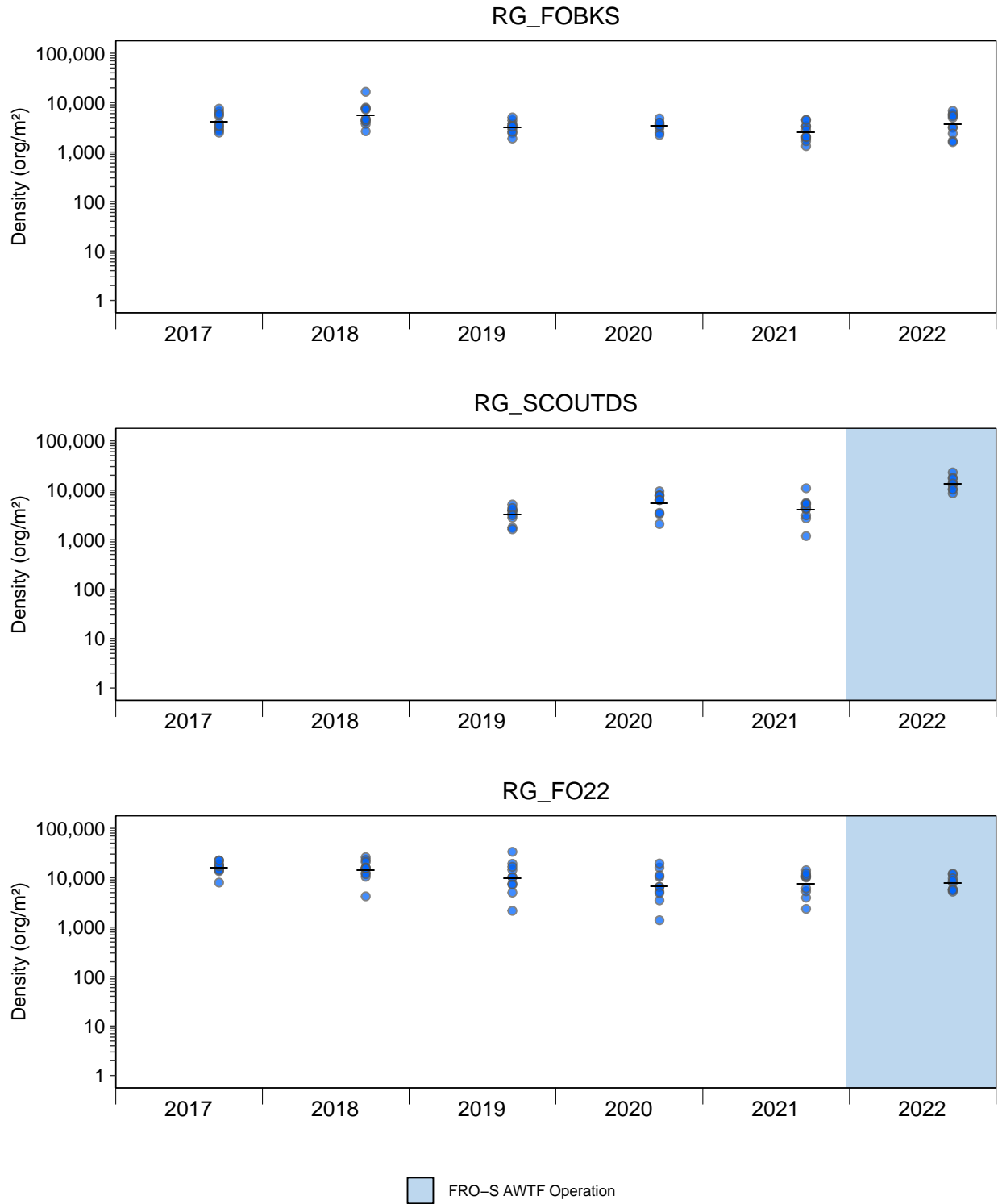


Figure 6: Total Benthic Invertebrate Density (Hess Sampling) by Year, FRO LAEMP, September 2017 to 2022

Note: Green represents reference areas and blue represents exposed areas. Black lines denote the geometric means.

commissioning. Future monitoring will continue to assess effects of the FRO-S AWTF and potential effects related to the future commissioning of the FRO-N SRF.

3.4 Study Question #3

Study Question #3 (Are benthic invertebrate tissue selenium concentrations downstream of FRO water treatment consistent with predictions, and if not, why?) was evaluated through monitoring of aqueous selenium concentrations, including selenium speciation, and composite-taxa benthic invertebrate tissue selenium concentrations throughout the study area.

3.4.1 Aqueous Selenium Concentrations

Total and dissolved selenium concentrations decreased at most areas downstream of the FRO-S AWTF outfall relative to immediately upstream of treatment (RG_FOBKS) in 2022 (Figure 3.7). No statistically significant differences were identified between pre- and post-commissioning for selenite and methylseleninic acid (MeSe(IV))⁶ concentrations, but qualitative observation of the data showed a notable increase in the frequency of detection of methylseleninic acid and, to a lesser extent, dimethylselenoxide (DMSeO) at some areas downstream of the AWTF during operation in 2022 compared to pre-commissioning (Figure 3.8; Appendix Table D.4; Appendix Figures D.25, D.27, and D.55). Overall, concentrations of organoselenium species were highest just downstream of the FRO-S AWTF, and decreased with distance to below detection limits within ~2 km of the outfall (Appendix Figure D.24 to D.27).

Consistent with previous years, total selenium concentrations were higher at three distinct areas within the Fording River in 2022 compared to other monitoring areas: 1) downstream of the Lake Mountain Creek influence (RG_FODNGD); 2) downstream of the FRO-S AWTF outfall (RG_SCOUTDS⁷); and 3) downstream of the Greenhouse Side Channel confluence (RG_FRUPO; Figure 3.4). Concentrations of selenite were also higher at RG_FODNGD and at RG_SCOUTDS compared to other monitoring areas but were lower downstream of the Greenhouse Side Channel confluence (Figure 3.9). Although seasonal differences in selenium concentrations were apparent (i.e., higher concentrations during low flows), spatial patterns were similar among monitoring areas throughout the year.

⁶ BACIs could not be conducted for organoselenium and DMSeO concentrations because there were not enough samples above detection limits. Statistical power was low for selenium speciation comparisons due to limited sampling during the pre-commissioning period.

⁷ The difference between the areas upstream (RG_FOBKS) and downstream (RG_SCOUTDS) of the outfall was much lower in 2022 compared to what the difference was last year (Minnow and Lotic 2022).



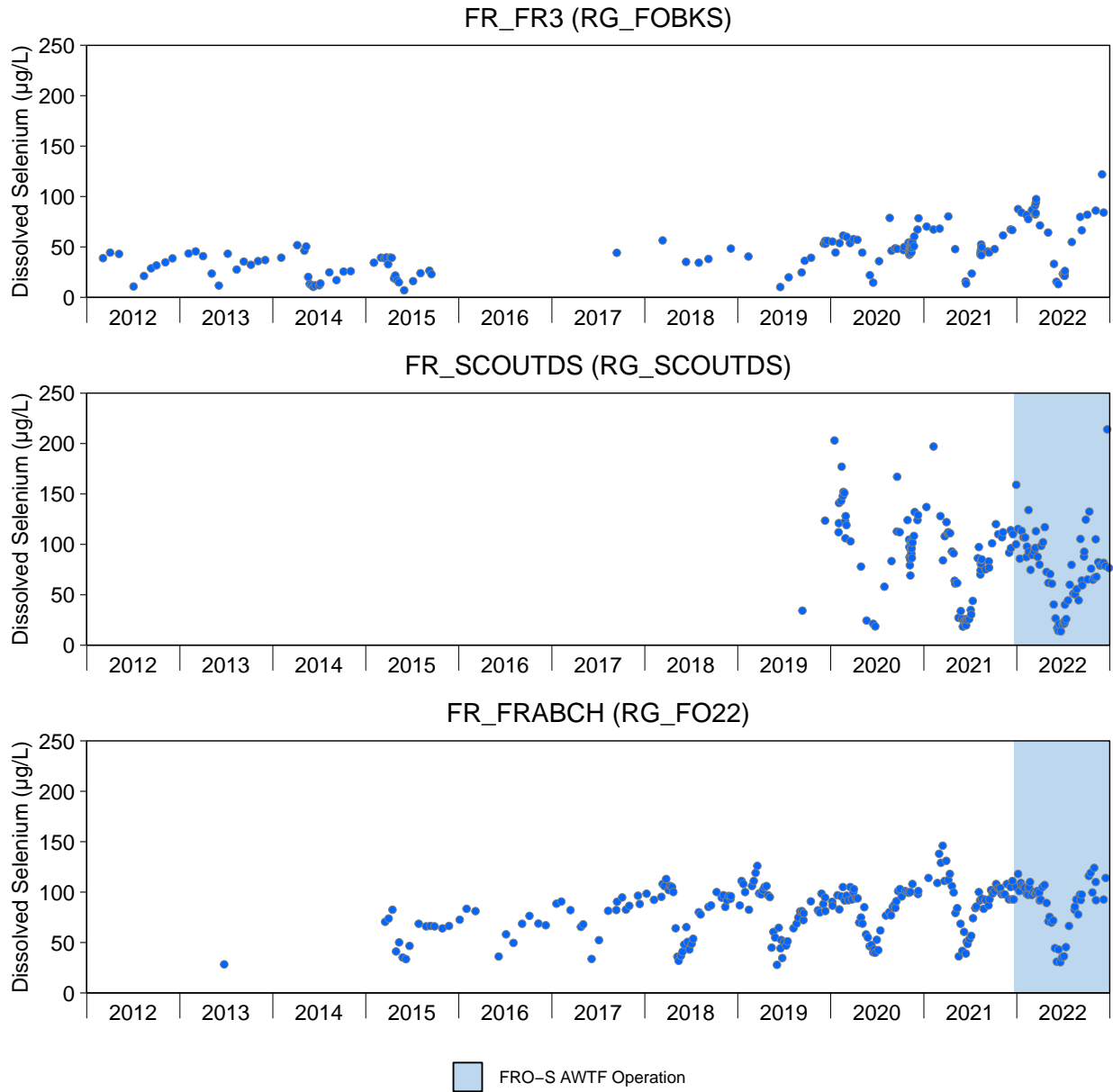


Figure 7: Time Series Plots for Dissolved Selenium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

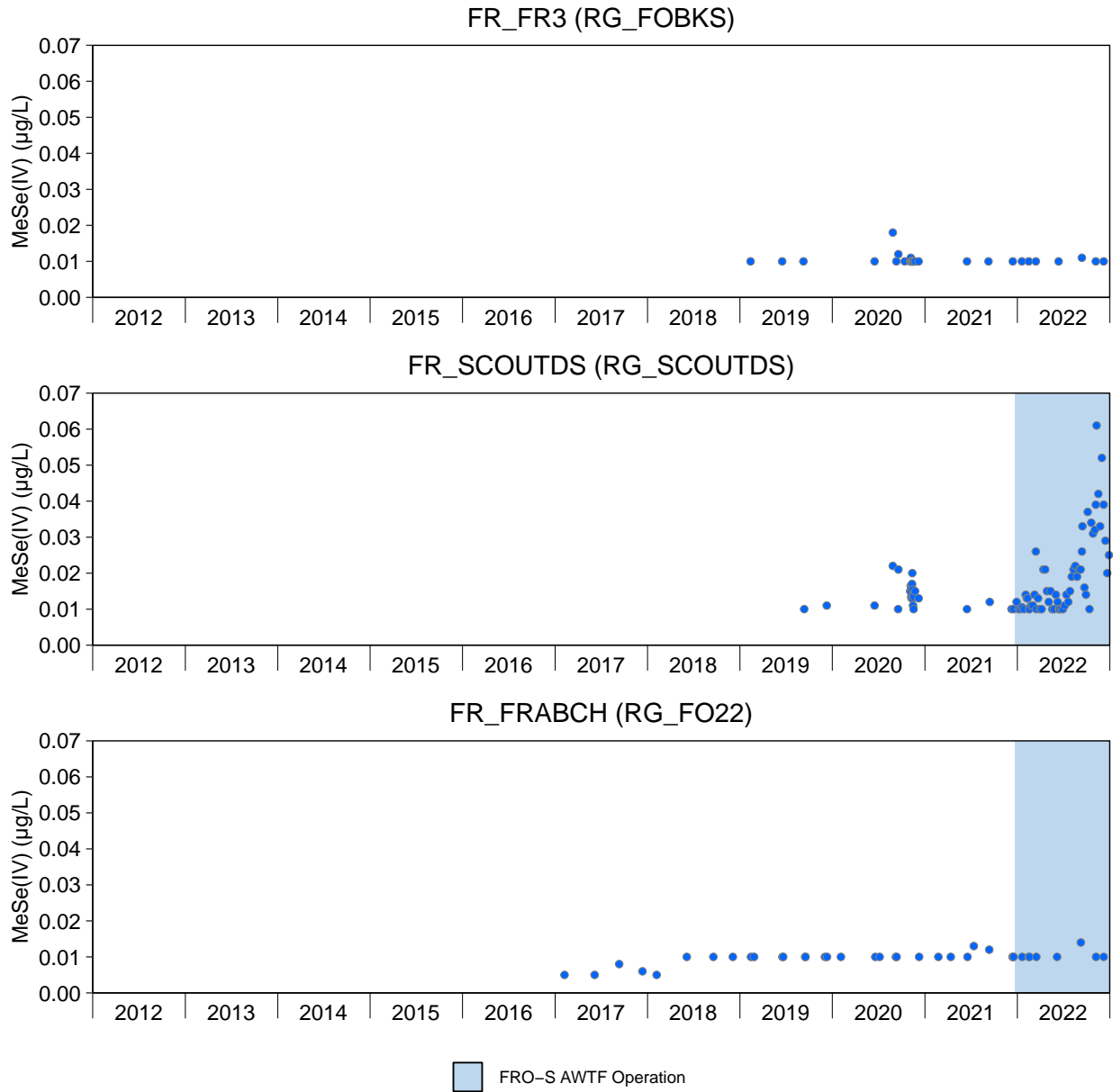


Figure 3.8: Time Series Plots for Methylseleninic Acid Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

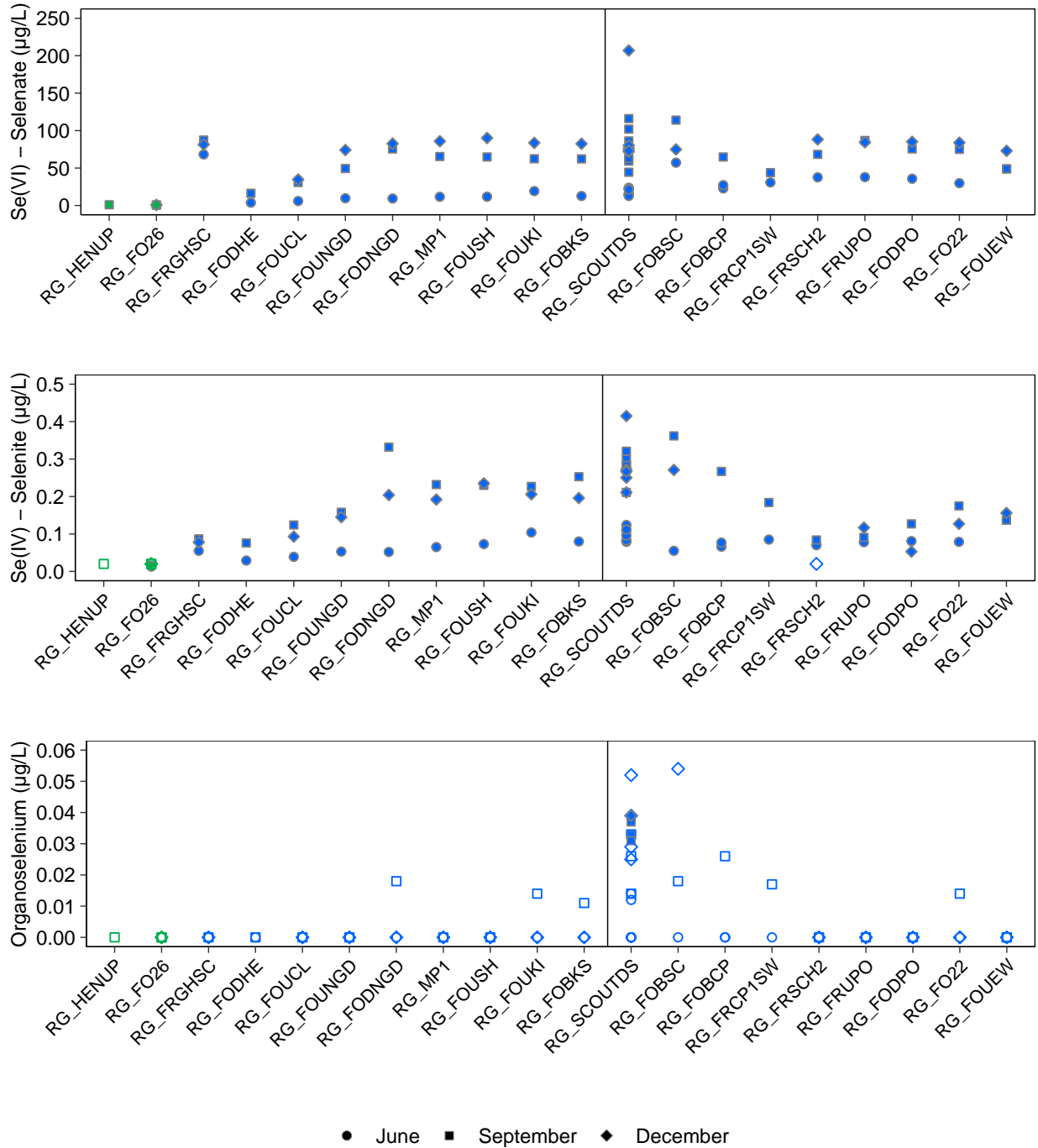


Figure 3.9: Concentrations of Selenium Species in June, September, and December, FRO LAEMP, 2022

Notes: Reference areas are shown in green and mine-exposed areas are shown in blue. Censored values (samples whose values were below the laboratory detection limits) are shown with open shapes. Selenium species always below the laboratory detection limit were not plotted. Solid black line separates biological monitoring areas upstream and downstream of the FRO-S AWTF outfall location. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

3.4.2 Benthic Invertebrate Tissue Selenium Concentrations

Selenium concentrations in composite-taxa benthic invertebrate tissue samples collected in the FRO LAEMP study area were largely below EVWQP benchmarks in 2022. Of the 444 benthic invertebrate tissue samples collected in 2022, 419 (94%) of them were below the EVWQP Level 1 benchmark for dietary effects to juvenile fish (11 mg/kg dw), and 11 of the 25 samples above benchmarks contained annelids (Figure 3.10; Appendix Table G.3) known to bioaccumulate selenium at a greater rate than other taxa (Luoma 2021). All non-annelid containing composite samples that were above a benchmark were above the Level 1 benchmark for dietary effects to juvenile fish but below the Level 1 benchmark for effects to benthic invertebrates, except for one of five samples collected in each of the January (above Level 2 benchmark for dietary effects to juvenile fish) and December (Level 1 benchmark for effects to benthic invertebrates) sampling events in the Greenhouse Side Channel (RG_FRGHSC). Of the seven sampling events in 2022, the highest selenium concentrations overall were observed in September (Appendix Figure G.54), which represents the end of the growing season and is consistent with previous years.

In response to a request from the EMC, composite-taxa benthic invertebrate tissue samples were collected within ~30 m of the FRO-S AWTF outfall in December 2022 to understand potential for localized effects on BIT selenium from aqueous organoselenium entering the Fording River from the FRO-S AWTF buffer pond. One of five replicates had tissue selenium concentrations above the EVWQP Level 1 benchmark for dietary effects to juvenile fish (11 mg/kg dw), while the other four replicates were below the benchmark (Appendix Table G.22). Overall, these benthic invertebrate tissue samples had selenium concentrations that were similar to the biological monitoring area (RG_SCOUTDS) ~200 m downstream.

3.4.3 Benthic Invertebrate Tissue Selenium Concentrations in Relation to Aqueous Selenium Concentrations

No changes in benthic invertebrate tissue selenium concentrations were identified downstream of the FRO-S AWTF outfall relative to immediately upstream (RG_FOBKS), despite changes in aqueous selenium concentrations (e.g., decrease in total and dissolved selenium, small increase in organoselenium). Before-after control-impact analysis determined that most comparisons⁸ of tissue selenium concentrations downstream of treatment were not significantly different than to concentrations upstream of treatment (RG_FOBKS) pre- and post-commissioning or different

⁸ The BACI was conducted by comparing the differences of tissue selenium concentrations for each sampling event pre- and post-commissioning at areas downstream of treatment relative to immediately upstream (RG_FOBKS); therefore, there are many comparisons for each monitoring area but most of them demonstrated no significant differences.



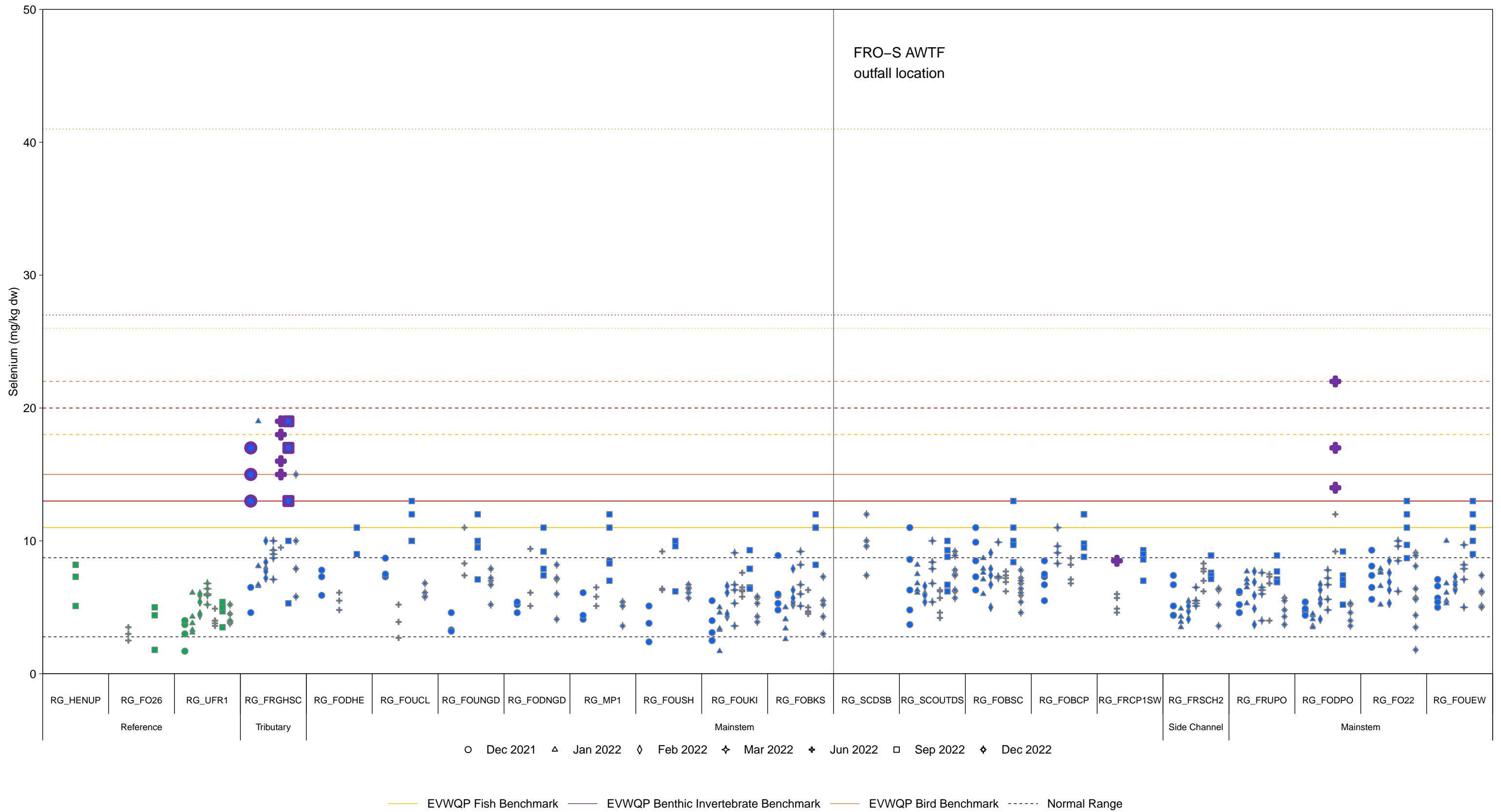


Figure 3.10: Composite-taxa Benthic Invertebrate Tissue Selenium Concentrations Pre- and Post-Commissioning of the Active Water Treatment Facility, FRO LAEMP, 2021 to 2022

Notes: Dashed black lines represent the normal range defined as the 2.5th and 97.5th percentiles of the 2012 to 2019 reference area data from the Regional Aquatic Environmental Monitoring Program (RAEMP). Green represents reference stations and blue represents mine-exposed stations. Level 1 benchmarks are shown with a solid line, Level 2 benchmarks are shown with a dashed line, and Level 3 benchmarks are shown with a dotted line. RG_FRCP1SW and RG_FOBCP could not be consistently sampled due to ice/dry conditions. Samples containing an Oligochaete in September 2022 and after are outlined in purple, samples prior to this date were not necessarily identified as having an Oligochaete. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO. Week 0 of the FRO-S AWTF commissioning sampling plan occurred in December 2021, while week 4, 8, and 12 sampling occurred in January, February, and March, respectively.

within the same area compared to the pre-commissioning period (Appendix Table G.4; Appendix Figures G.54 and G.55). Overall, 88% (340 of 387 comparisons) of tissue selenium concentration pre- and post-commissioning comparisons were not significant, and of the comparisons that were significantly different, most occurred relative to January 2022 when BIT selenium concentrations were unusually low at RG_FOBKS, or when annelids were present in composite samples (e.g., RG_FODPO in June 2022). Benthic invertebrate tissue selenium concentrations have not changed downstream of FRO-S AWTF treatment compared to pre-commissioning concentrations and compared to immediately upstream of treatment.

When considering the full study area, there was some indication that benthic invertebrate tissue selenium concentrations were higher in areas with higher concentrations of reduced selenium, however, this was not consistent across all areas. For example, areas in the upper part of the study area (e.g., upstream of RG_FODNGD) had relatively high benthic invertebrate tissue selenium concentrations compared to other areas but low selenite concentrations (Figure 3.9 and 3.10; Appendix Table G.3).

Benthic invertebrate tissue selenium concentrations in the FRO LAEMP study area have remained consistent with predictions based on aqueous total selenium concentrations. Except for composite-taxa samples containing annelids (n=3 at RG_FODPO in June; n=1 at RG_FRCP1SW in June; n=4 and n=3 at RG_FRGHSC in June and September, respectively), almost all (436 of 437) non-annelid tissue samples collected within the study area in 2022 were within the prediction limits of the selenium bioaccumulation model (Figure 3.11; Appendix Table G.5; Golder 2020a), which was consistent with previous years (Appendix Figure G.56). The only sample that did not contain annelids but was above the prediction limits was collected in the Greenhouse Side Channel and could not be explained by water chemistry, with no organoselenium detected and low selenite concentrations (Figure 3.9). Measured tissue selenium concentrations throughout the study area were also consistent with those predicted by the bioaccumulation tool (i.e., the 'B-tool'; predicts tissue selenium concentrations accounting for selenium speciation and sulphate concentrations [Golder 2020b]), except for samples that contained annelids (Appendix Table G.6). Overall, both models predicted higher benthic invertebrate tissue selenium concentrations in areas and/or seasons with the highest aqueous (total and reduced) selenium concentrations consistent with measured benthic invertebrate tissue selenium concentrations.

3.4.4 Summary

Total and dissolved selenium concentrations have decreased at most mainstem Fording monitoring areas downstream of the FRO-S AWTF outfall compared to the pre-commissioning period and immediately upstream at RG_FOBKS, however, there was a qualitative increase in



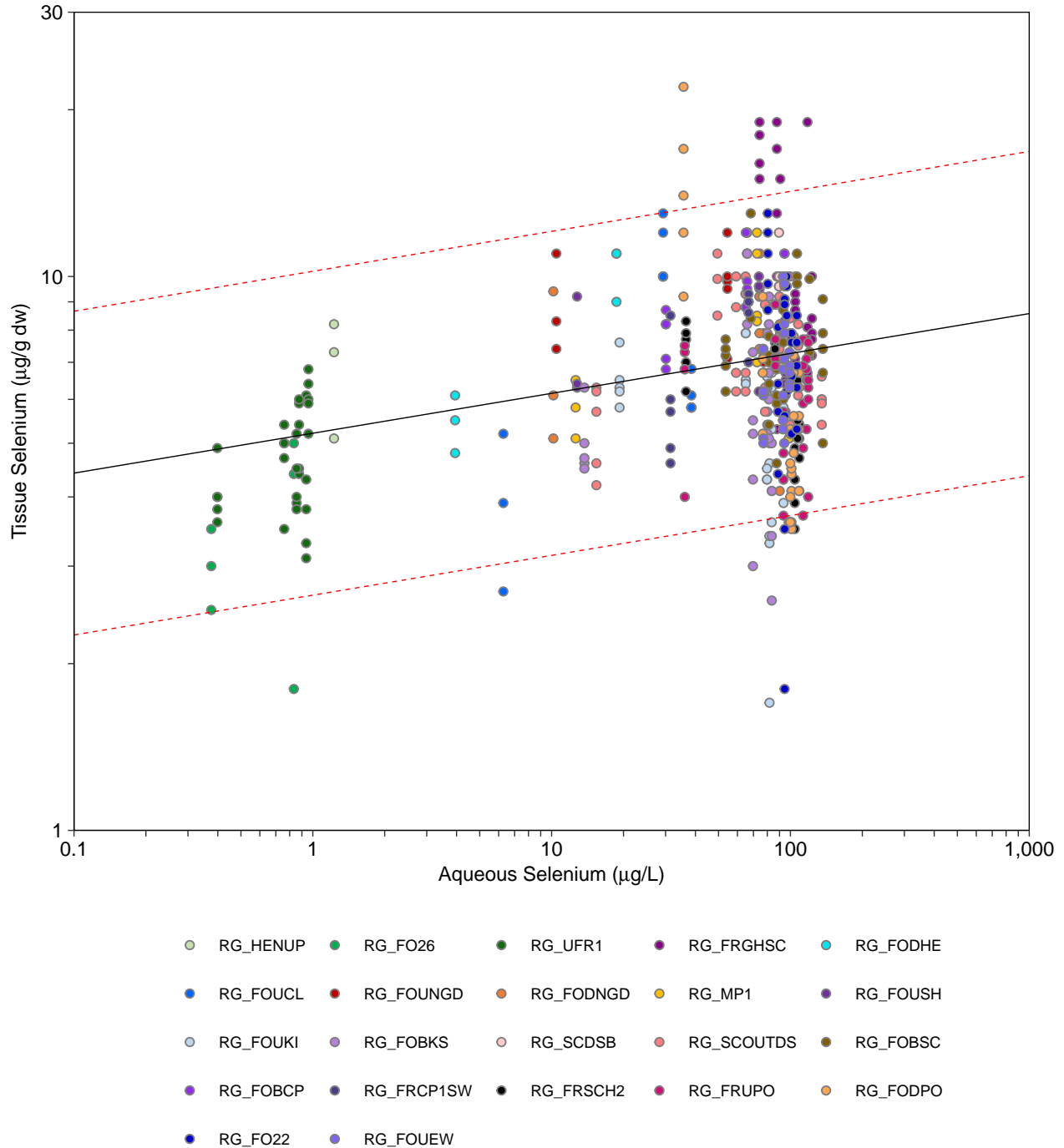


Figure 3.11: Observed and Modelled Selenium Concentrations in Benthic Invertebrate Composite Samples Relative to Aqueous Selenium Concentrations at Stations Upstream and Downstream of Fording River Operations, FRO LAEMP, 2022

Notes: Mean benthic invertebrate selenium concentrations (solid black line) were estimated using a one-step water to benthic invertebrate selenium accumulation model: $\log_{10}[\text{Se}]_{\text{benthic invertebrate}} = 0.717 + 0.072 \times \log_{10}[\text{Se}]_{\text{aq}}$ (Golder 2020). The 95% prediction limits for a single value from the one-step water to benthic invertebrate selenium accumulation model are plotted as dashed red lines. Reference areas are shown in green. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO

organoselenium concentrations downstream of treatment that decreased with distance from the outfall until it was no longer detected ~2 km downstream. Benthic invertebrate tissue selenium concentrations have remained unchanged at all areas downstream of treatment compared to upstream and pre-commissioning of the FRO-S AWTF, and concentrations have been consistent with predictions throughout the study area based on aqueous selenium concentrations. In response to the study question, monitoring under the FRO LAEMP has indicated that benthic invertebrate tissue selenium concentrations downstream of treatment (and throughout the study area) were consistent with predictions after the first year of FRO-S AWTF commissioning and continued monitoring will assess any potential future changes as well as changes associated with the future FRO-N SRF.

3.5 Study Question #4

Study Question #4 (How is temperature changing over time in the FRO LAEMP study area? 4a. Is water temperature measurably different [greater than 1 degree Celsius] downstream of the AWTF and/or SRF effluent discharge relative to the upstream baseline condition? 4b. If changes in water temperature are observed, are these changes attributed to mitigations [i.e., AWTF and/or SRF]?) was evaluated through monitoring of water temperature data collected from loggers located throughout the study area. Further information related to water temperatures associated with the FRO-S AWTF will be summarized in the FRO-S AWTF Outfall report (WSP Canada 2023).

3.5.1 Water Temperature

Water temperatures have remained stable throughout most of the FRO LAEMP study area since 2017⁹, except for three stations in the middle study area; upstream (RG_FOUKI) and downstream (RG_FOBKS) of the former Kilmarnock Creek confluence, and upstream of the former Cataract Creek confluence (RG_FOBSC), where small but statistically significant increases in temperature over time have been observed (Appendix Table E.1; Appendix Figure E.1). Temperatures at other stations within the middle study area (RG_SCOUTDS, RG_FOBCP, and RG_FRCP1SW) have not changed, suggesting that temperature changes are localized and not indicative of a shift in water temperatures within the larger watershed.

Water temperatures were above the 1°C threshold¹⁰ downstream of treatment compared to upstream post-commissioning of the FRO-S AWTF on only three occasions in 2022.

⁹ Temperatures loggers were installed at RG_UFR1, RG_FODHE, RG_FRDSCC1, and RG_SCOUTDS in August 2020, and at RG_FOUCL in April 2021.

¹⁰ The 1°C threshold difference of water temperature immediately downstream compared to immediately upstream of the FRO-S AWTF outfall was integrated into Study Question #4 after discussions with the EMC as an indicator of change when developing the 2021 to 2023 FRO LAEMP study design.



These occurred in late February 2022 when downstream daily mean water temperatures were approximately 1.2°C colder than upstream and in early December when the downstream daily mean water temperature was 1.01°C warmer than upstream (Figure 3.12; Appendix Table E.3).

Statistically, water temperatures were warmer¹¹ at RG_SCOUTDS downstream of treatment compared to RG_FOBKS upstream of treatment from March to July when comparing post-commissioning (2022) to pre-commissioning temperatures (2021 only), and colder from August to October comparing post-commissioning temperature differences to 2020 pre-commissioning data (Appendix Table E.2; Appendix Figure E.2 to E.4), but the differences were small (i.e., <1°C) so unlikely to be ecologically significant. Overall, water treatment has had minimal effects on water temperature downstream of the outfall location in the Fording mainstem.

3.5.2 Summary

With few exceptions, water temperatures have remained stable throughout the FRO LAEMP study area since 2017. Minor differences in water temperature were observed when comparing areas immediately downstream (RG_SCOUTDS) and upstream (RG_FOBKS) of treatment pre- and post-commissioning, but temperature differences were rarely (i.e., only 3 of 363 days post commissioning) greater than the 1°C threshold indicating minimal influence of FRO-S AWTF operation on water temperatures in the receiving environment downstream. Monitoring under the FRO LAEMP has indicated that water temperatures have increased at three of twelve mine-exposed stations in the study area but increases were not related to the FRO-S AWTF. Future monitoring will continue to assess changes in water temperatures and deviations from the 1°C threshold outlined in study question #4.

3.6 Study Question #5

Study Question #5 (What are the factors contributing to the variations in benthic invertebrate communities in the FRO LAEMP study area?) was evaluated through monitoring of BIC endpoints relative to water quality and habitat variables (e.g., calcite, substrate size, water depth, flow, and temperature).

3.6.1 Benthic Invertebrate Community Summary

The majority of BIC endpoints were similar among monitoring areas throughout the FRO LAEMP study area, although a clear spatial pattern from upstream to downstream was apparent for

¹¹ Differences were based on non-overlapping 95% confidence intervals of the estimated mean difference of water temperatures from the downstream (RG_SCOUTDS) and upstream (RG_FOBKS) areas for years of comparison.



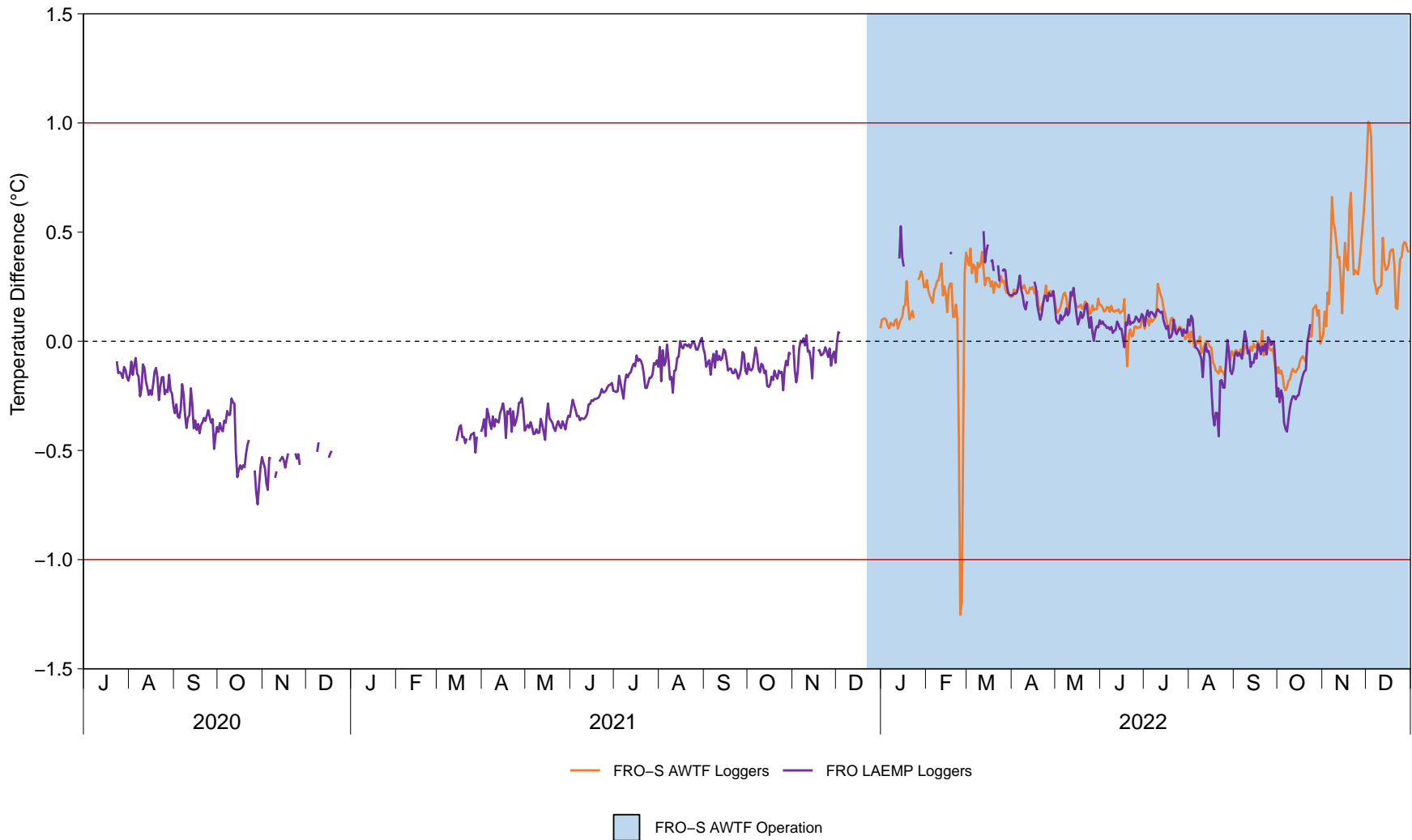


Figure 2: Mean Daily Temperature Difference Between Downstream (RG_SCOUTDS) and Upstream (RG_FOBKS) of the FRO-S AWTF , FRO LAEMP, 2020 to 2022

Notes: Temperature differences were calculated as RG_SCOUTDS – RG_FOBKS. A positive difference indicates a temperature increase downstream and a negative difference indicates a temperature drop downstream. The FRO-S AWTF loggers were managed by the water treatment facility and were supplemental to the FRO LAEMP loggers which were managed by Lotic Environmental and were a part of the original FRO LAEMP study design.

% EPT, % Ephemeroptera, and % Plecoptera, consistent with previous years (Minnow and Lotic 2019b, 2020b, 2021b, 2022). All other taxonomic endpoints assessed (e.g., total abundance, taxa richness, % Trichoptera and % Chironomids, and abundance of EPT, Ephemeroptera, Plecoptera, Trichoptera, Chironomidae, Baetidae, Heptageniidae, and Ephemerellidae) fell within the site-specific and/or regional normal ranges (Figure 3.13; Appendix Figures G.1, G.3 to G.8, G.11, G.12, G.16 to 25) and have not changed significantly over time (Appendix Table G.7, G.8, G.12 to G.21). Relative abundance of EPT, however, was below site-specific normal ranges from RG_FOUNGD downstream of the Concrete Arch to the lower extent of the FRO LAEMP study area (RG_FOU EW) in 2022, with the values also dropping below the regional normal range (except for RG_FOBKS) between RG_FOUSH (upstream of Shandley Creek) and RG_FOBSC (Figure 3.13). This represented a decrease in % EPT throughout the upper and middle study areas compared to previous years (Appendix Table G.9; Appendix Figure G.13). Percent Ephemeroptera was also below the site-specific normal ranges from RG_FOUSH to RG_FOU EW and was below regional normal ranges from RG_FRCP1SW (upstream of the Greenhouse Side Channel) to RG_FOU EW (Figure 3.13). Like % EPT, % Ephemeroptera was lower relative to normal ranges at some areas in the upper and middle study areas compared to previous years but followed a similar upstream to downstream pattern of decreasing relative abundance as previously identified (Appendix Table G.10; Appendix Figure G.14). Consistent with previous years, % Plecoptera was near or above the upper limit of the regional normal range from RG_FRCP1SW to RG_FOU EW but was below the normal range and lower than previous years at some areas in the upper and middle study areas (Appendix Table G.11; Appendix Figure G.15). The shift in community structure in the downstream section of the upper study area and the upstream section of the middle study area coincided with an increase in the total and relative abundance of fly larvae from the family Psychodidae compared to previous years (Minnow and Lotic 2021b, 2022), which also occurred at the reference area RG_FO26 (Figure 3.3) and may therefore be related to environmental conditions. The shift in community structure did not, however, result in the total abundance of any EPT taxa falling outside the respective normal ranges in any part of the study area. Instead, the decrease in the relative abundance of EPT taxa was related to an increase in other taxa. Percent EPT remained within the regional normal range in the lower study area despite low % Ephemeroptera, which is normally the most abundant EPT taxon, because of higher Plecoptera abundance relative to other areas, suggesting no effect on food availability for fish throughout the study area.

Few statistically significant and biologically meaningful changes in BIC endpoints were identified when monitoring areas downstream of the FRO-S AWTF outfall were compared to pre-commissioning and to RG_FOBKS immediately upstream, and none could be directly attributed to water treatment. Before-after control-impact analysis identified increases in taxa



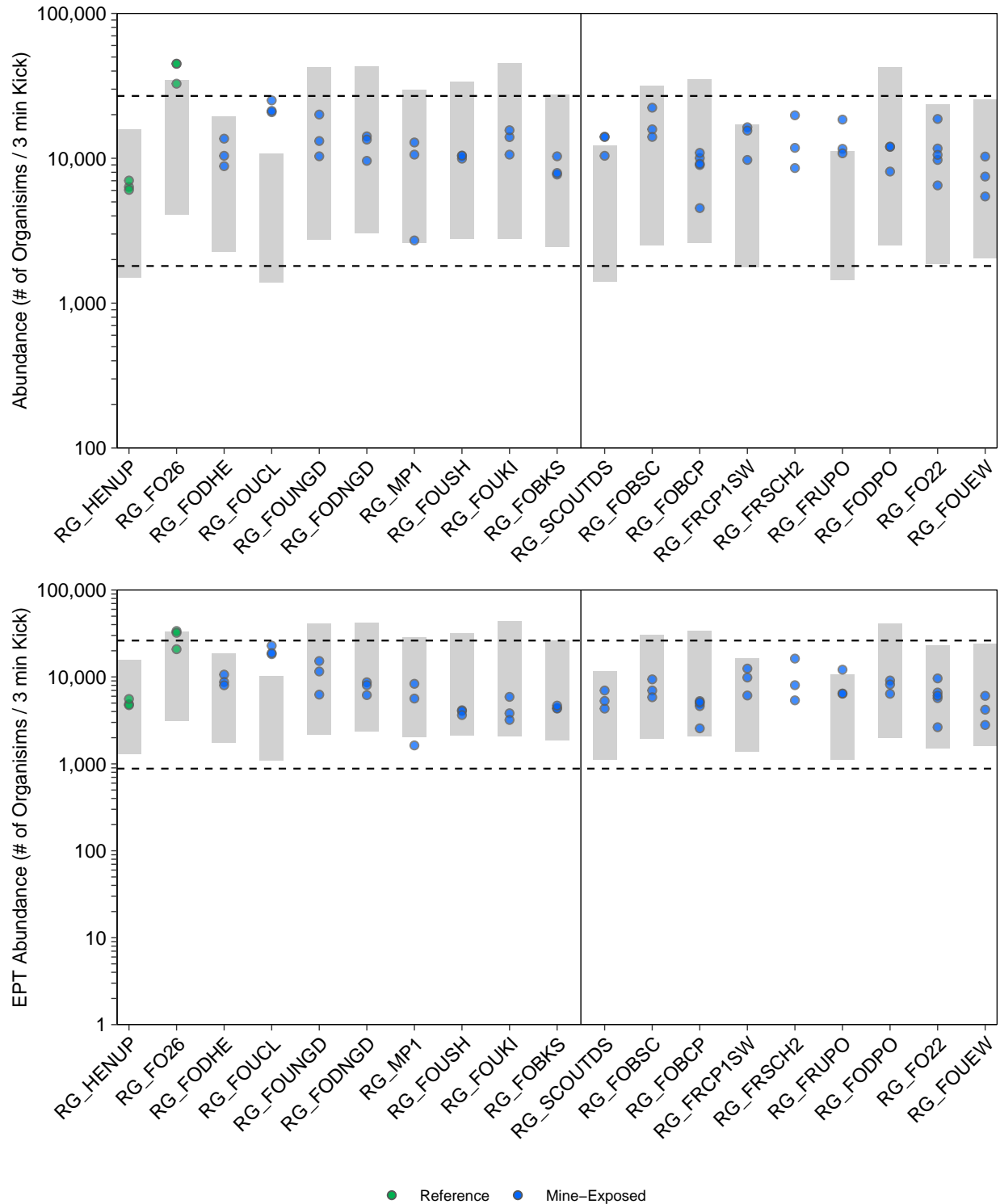


Figure 3.1 : Benthic Invertebrate Community Metrics, FRO LAEMP, September 2022

Notes: Vertical black line denotes upstream and downstream of the FRO-S AWTF outfall location. Site specific normal ranges developed using regression models for the RAEMP (Minnow 2020a) are shown, when applicable, with grey shading (Minnow 2020a). Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

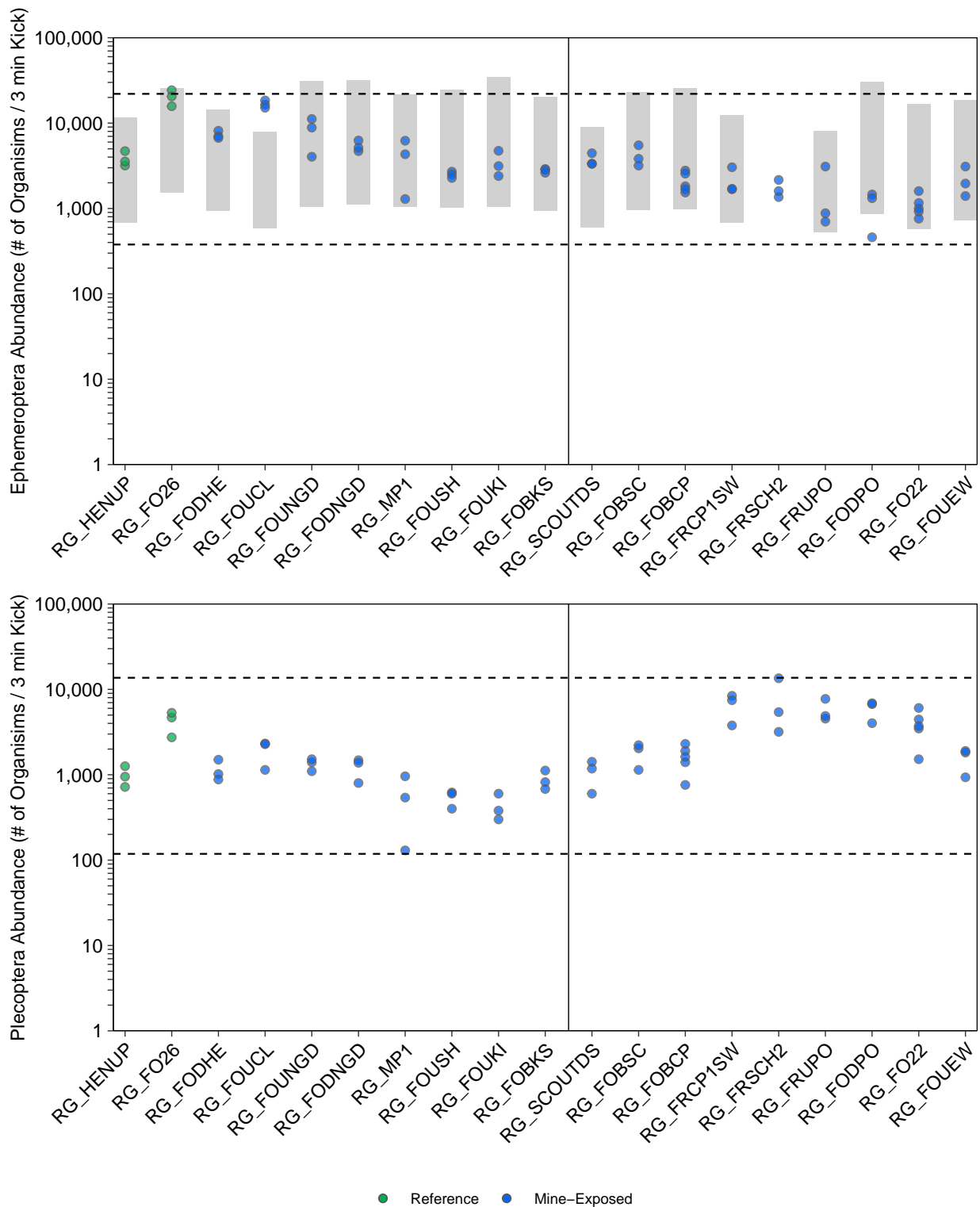


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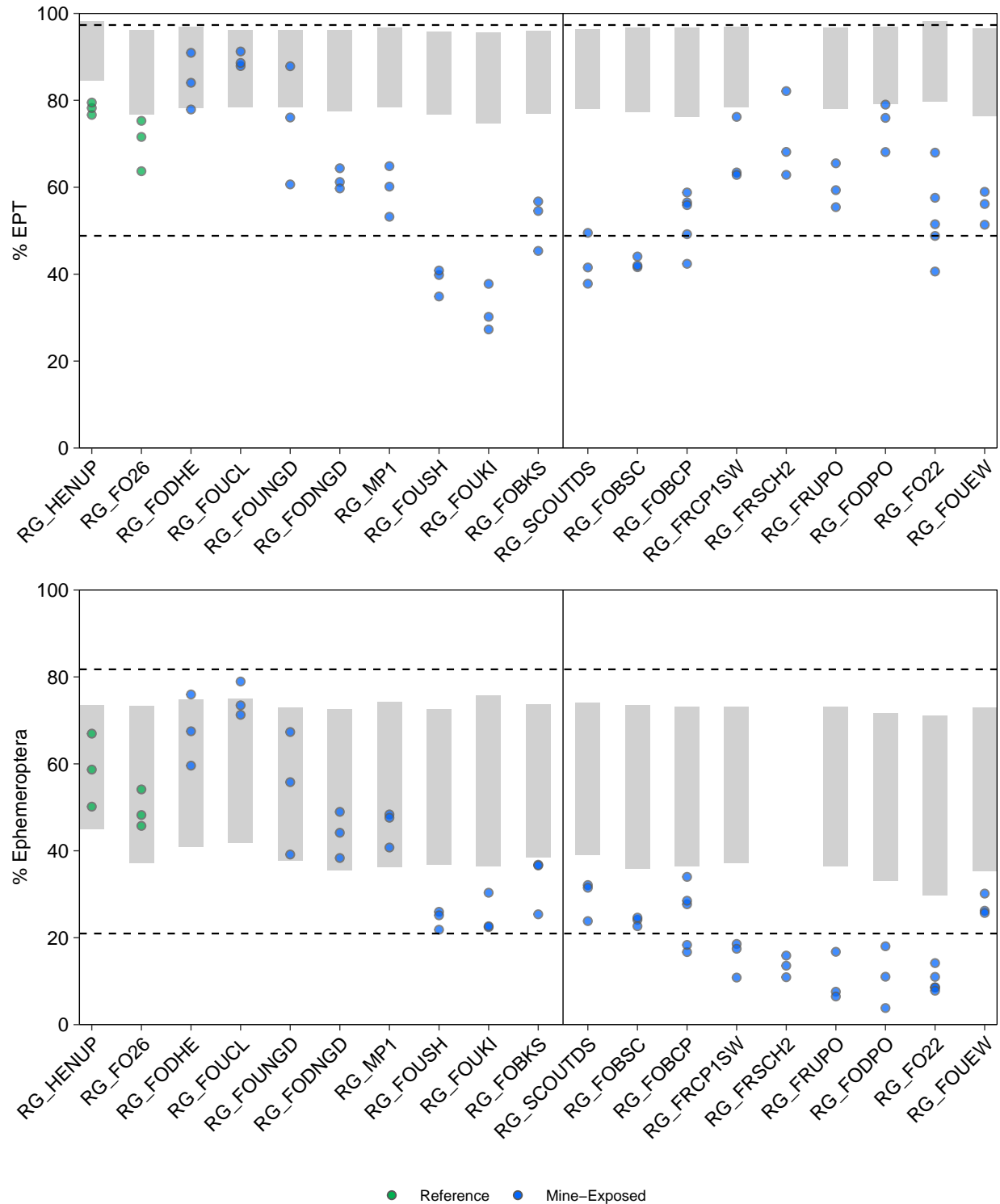


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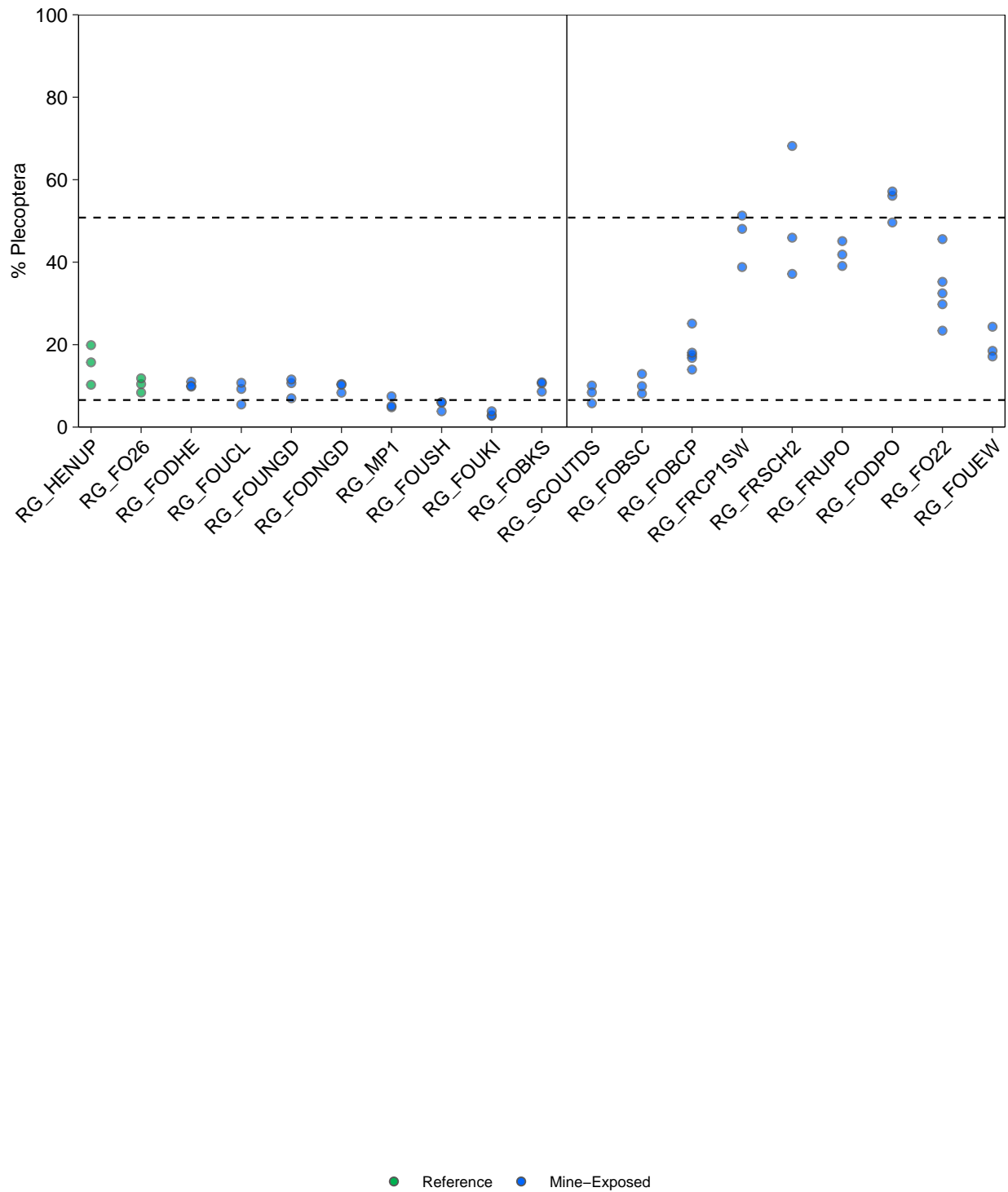


Figure 3.1 : Benthic Invertebrate Community Metrics, FRO LAEMP, September 2022

Notes: Vertical black line denotes upstream and downstream of the FRO-S AWTF outfall location. Site specific normal ranges developed using regression models for the RAEMP (Minnow 2020a) are shown, when applicable, with grey shading (Minnow 2020a). Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

richness at most but not all areas downstream of the FRO-S AWTF outfall relative to richness pre-commissioning and relative to RG_FOBKS, while Baetidae abundance (Ephemeroptera) and % Chironomidae were higher at RG_FOBSC compared to pre-commissioning, and higher at most areas in some years only (Appendix Table G.1; Appendix Figures G.33, G.34 to G48). Occasional significant comparisons were observed for % Ephemeroptera, depending on the pre-commissioning year in the comparison¹². Most other endpoints did not change significantly post-commissioning or changed only in a limited number of comparisons that likely reflected the annual variability in BIC data rather than an effect of treatment. In addition, the observed significant changes could not be explicitly explained by concurrent changes in water quality (also see Sections 3.6.5). Overall, commissioning of the FRO-S AWTF did not have a notable effect on BIC downstream.

3.6.2 Water Quality

Decreases in nitrate and selenium concentrations and increases in total phosphorus and orthophosphate concentrations were observed downstream of the FRO-S AWTF outfall, but did not result in any changes to BIC structure. Nitrate concentrations post-commissioning were similar among areas post-commissioning and compared to previous years between the outfall downstream and the Greenhouse Side Channel and were lower compared to upstream and pre-commissioning throughout the lower study area (see Section 3.2.1). Total and dissolved selenium concentrations were lower at all areas downstream of water treatment, while organoselenium and phosphorus (total phosphorus and orthophosphate) were higher from the outfall downstream to the Greenhouse Side Channel (see Sections 3.3.1 and 3.4.1) compared to pre-commissioning concentrations and compared to upstream (RG_FOBKS). Very few significant differences of other mine-related water quality constituents were observed downstream of treatment post-commissioning. Exceptions were decreases in dissolved nickel at three areas downstream (but an increase at one area downstream) post-commissioning and relative to RG_FOBKS upstream and increases in nitrite and total molybdenum (a component of anti-scalant) at most areas downstream (Appendix Table D.4; Appendix Figure D.55). Overall, no changes in water chemistry post commissioning of the FRO-S AWTF could be attributed directly to an influence on BIC structure downstream.

Concentrations of several key mine-related constituents, including most Order constituents, increased gradually from upstream to downstream between RG_FODNGD (downstream of Lake Mountain Creek influence) and the lower extent of the study area (RG_FOU EW). An exception to this is dissolved nickel concentrations and, to some extent dissolved cadmium, which were

¹² If there was an interaction between year and the treatment term (i.e., there was effect of year on treatment), rather than no effect of year, then comparisons were made per year.



lower throughout the lower study area (i.e., downstream of the Greenhouse Side Channel confluence) compared to concentrations in the middle study area where they were the highest (Figure 3.4). In the upper study area, concentrations of most mine-related constituents, including Order constituents, rarely exceeded their respective updated ECs, proposed benchmarks, or screening values, except for nitrate which was above the Level 1 updated EC from RG_FODNGD to RG_FOUSH (5% to 20% of samples across the range of monitoring areas) and dissolved nickel which exceeded the Level 2 proposed benchmark from RG_FOUNGD to RG_FOUSH (33% to 67% of samples; Appendix Table D.3). Throughout the middle study area, dissolved nickel exceeded the Level 2 proposed benchmark (up to 67% of samples) while TDS exceeded the Level 1 screening value (up to 48% of samples; Appendix Table D.3). Occasionally, nitrate and sulphate concentrations exceeded updated ECs between RG_SCOUTDS and RG_FOBCP (nitrate: Level 2 updated EC in 2% of samples at RG_FOBSC and RG_FOBCP; Level 3 updated ECs in 6% of samples at RG_SCOUTDS; sulphate: Level 1 updated ECs in 4% to 10% of samples between RG_SCOUTDS and RG_FOBCP) in the middle study area. In the lower study area, dissolved nickel only exceeded the Level 2 proposed benchmark at RG_FODPO (8% of samples), while TDS exceeded the Level 1 screening value from RG_FRUPO to RG_FO22 (4% to 25% of samples). Additionally, sulphate never exceeded updated ECs in the lower study area in 2022, but nitrate exceeded the Level 1 updated EC at RG_FRUPO (10% of samples) and Level 3 updated ECs at RG_FO22 (2% of samples). For EVWQP constituent benchmark concentrations see Appendix Table D.5.

Although concentrations of most mine-related constituents have remained unchanged over the time period assessed (2012 to present in most cases) throughout the FRO LAEMP study area, concentrations of several key mine-related constituents (i.e., dissolved cadmium, nitrate, total selenium, sulphate; dissolved nickel, and TDS) have increased since the base year (2012 in most cases), particularly in the downstream extent of the upper study area and the upstream extent of the middle study area (Appendix Table D.2; Appendix Figures D.1 to D.22) where shifts in BIC structure have occurred (Section 3.6.1).

3.6.3 Habitat

The morphological features of the Fording River vary from upstream to downstream in relation to spatial patterns in BIC structure throughout the FRO LAEMP study area. This change in habitat features can affect the habitat for benthic invertebrate communities (e.g., nutrient dynamics, physical habitat) and likely has an influence on the individual taxa present (Vannote et al. 1980, Cummins 2019). Specifically, the upper study area (Figure 2.1), is characterized by steep gradients (Ecofish 2022) facilitating shallow, fast flowing water with relatively



coarse substrate (Appendix Table I.2, and I.4). Additionally, water temperatures in the upper study area are typically lower in the winter and higher in the summer compared to the lower study area (Appendix Figure E.1) because of the shallower water depths and minimal groundwater influence (SNC Lavalin 2021). The middle study area is generally characterized by shallower gradients (Ecofish 2022) facilitating more slow flowing and deeper water compared to the upper study area (Appendix Table I.2), which supports finer substrate (Appendix Table I.4) and different nutrient dynamics (i.e., fine particulate organic matter from upstream; Vannote et al. 1980, Cummins 2019); however, the lower extent of the middle study areas is also prone to extensive seasonal drying because river gradients become more level (Ecofish 2022) and subsurface flows (SNC Lavalin 2021) cause water depths to become shallow, particularly during low flow seasons. The lower study area is characterized by slow flowing, deep water, and small substrate (Appendix Tables I.2 and I.4) as a result of an upward sloping riverbed gradient at the confluence of Chauncey Creek in the Fording River, slowing water down and allowing for more deposition (Ecofish 2022). These more depositional downstream areas have more allochthonous food sources (i.e., leaves, woody debris, particulate organic matter from upstream) ideal for shredders common to Plecopteran families (Cummins 2019). The smaller substrate size in these depositional waters is also ideal habitat for Plecopterans (Peckarsky 1979). The lower study area is also characterized by water temperatures that have smaller seasonal fluctuations (Appendix Figure E.1) that typically result from ambient cold and warm temperatures in the winter and summer, respectively, leading to a distinct temperature regime compared to the upper and middle study areas. Like water chemistry changes, these very distinct habitat changes from upstream to downstream closely follow spatial changes in BIC structure in the FRO LAEMP study area, and are likely influencing the composition of the community independent of water quality.

3.6.4 Substrate Quality

Concentrations of most metals and PAHs in sediment collected from mine-exposed areas in 2022 exceeded BCWSQGs (lower for metals and upper for PAHs) but did not change over time in most areas (Appendix Figures F.1 and F.2). Sediment metals and PAH concentrations were similar downstream of the FRO-S AWTF outfall post-commissioning compared to pre-commissioning and relative to the area (RG_FOBKS) immediately upstream, except for PAHs at RG_SCOUTDS and RG_FO22 (Appendix Table F.2; Appendix Figures F.3 and F.4). Further analysis of the sediment data, particularly from RG_SCOUTDS, demonstrated a strong relationship between moisture content, % fines, and PAH concentrations in the samples (Appendix Table F.1; Appendix Figure F.4). Results from confirmatory sampling at RG_SCOUTDS in February 2023 showed PAHs that were largely consistent with previous years (Appendix Figure F.5).



Although concentrations of some metals and PAHs did exceed BCWSQGs¹³, it is not expected that sediment is a dominant exposure pathway in erosional lotic environments such as the upper Fording River, where depositional material represents less than 10% of the substrate surface (Golder 2022). In addition, toxicity testing on both *Hyalella azteca* and *Hexagenia sp.* with sediments from the areas of the FRO LAEMP study area with the highest concentrations of both metals and PAHs (e.g., RG_FOUKI) did not identify any toxic effects that could be contributed to sediment chemistry (Golder 2022). As such, sediment toxicity is not a reliable predictor for explaining variations in BIC structure (Golder 2022).

Consistent with previous years, both the Regional Calcite Monitoring Program and the FRO LAEMP showed an increase in the presence of calcite, reflected in higher calcite index, moving from upstream to downstream within the FRO LAEMP study area in 2022 (Appendix Tables F.3 and F.4; Appendix Figure F.6). Overall, calcite scores have remained stable within each monitoring area throughout the study area since 2018 (Appendix Table F.3).

3.6.5 Integrated Analysis

Benthic invertebrate community structure was closely related to changes in both water quality and habitat from upstream to downstream, confounding the interpretation of the influence of individual variables, as indicated in previous FRO LAEMP reports. Correlations between BIC endpoints and water quality and habitat variables were explored to understand whether relationships could help explain the effects observed in BIC structure throughout the FRO LAEMP watershed. Correlations of water quality constituents with key BIC endpoints continue to identify strong, significant relationships with mine-related constituents, most notably through negative correlations with % Ephemeroptera, Ephemeroptera abundance and, to a lesser extent % EPT, but positive correlations with % Plecoptera (Figures 3.3 and 3.13; Appendix Table H.1; Appendix Figures H.1 to H.5). Other correlations between water quality constituents and BIC endpoints meeting the cutoff for significance and strength (i.e., $p < 0.001$; $Rho > \pm 0.6$) occurred infrequently and in no consistent pattern. Several habitat variables also correlated significantly with % Ephemeroptera and % Plecoptera, supporting previous findings indicating that habitat plays an important role in BIC structure in the FRO LAEMP study area. Substrate size was generally larger upstream where there was higher % Ephemeroptera and smaller downstream where there was higher % Plecoptera (Appendix Table I.4), resulting in a significant positive correlation with % Ephemeroptera and a significant negative correlation with % Plecoptera and Plecoptera abundance throughout the full study area (Appendix Table H.1; Appendix Figure H.1). Several habitat variables also significantly correlated with % Plecoptera and/or Plecoptera

¹³ Alert concentration for selenium in sediment.



abundance within the individual study areas, including calcite presence and index in the upper study area (positive), calcite concretion in the middle study area (positive), minimum winter water temperature in the middle (negative) and lower study (positive) area, and water depth in the lower study area (negative; Appendix Table H.1; Appendix Figure H.3). Taken together, a clear relationship between BIC endpoints and both water quality and habitat was apparent, but, similar to previous years, analyses have not been able separate the individual contributions of each variable as the majority of the explanatory power of water quality and habitat predictors are shared (Appendix Figure H.6) and difficult to separate. Canonical correspondence analysis identified a significant effect of all water quality stressors and habitat variables that were assessed on BIC variation in the full study area, except for calcite concretion (Appendix Table H.2; Appendix Figures H.7 to H.10). Overall variations in benthic invertebrate community structure was associated with only nitrate (after controlling for habitat) and several habitat variables (bankfull width, station gradient, watershed area) in the upper study area, but most water quality stressors (after controlling for habitat) and habitat variables had a significant influence on BIC variation in the middle study area (Appendix Table H.2; Appendix Figures H.7 to H.10), where water chemistry and habitat changed significantly (Section 3.6.2 and 3.6.3). In addition to nitrate, selenium, and sulphate concentrations, BIC variation in the lower study area was strongly associated with substrate size (D-16) and summer and winter mean water temperatures (Appendix Table H.2), and these habitat variables are markedly different throughout this section of the upper Fording River where very high % Plecoptera and low % Ephemeroptera are observed. Overall, analysis continues to suggest that both water quality and habitat variables are contributing to variations in BIC structure in the FRO LAEMP study area but the effects of individual variables remain hard to define given the covariation among the different factors and no causal link between individual water quality or habitat metrics and BIC structure is possible at this time.

3.6.6 Summary

Benthic invertebrate community data has been collected since 2012 throughout the FRO LAEMP study area to address questions around the factors affecting BIC variation. Monitoring since that time has continued to show spatial gradients in key relative abundance endpoints (e.g., % EPT, % Ephemeroptera, and % Plecoptera) from upstream to downstream within the FRO LAEMP study area but while a similar spatial pattern in Ephemeroptera abundance and relative abundance was observed, all abundance endpoints were within their respective reference normal ranges and have remained stable over time (Minnow and Lotic 2018, 2019b, 2020b, 2021b, 2022). Changes in the relative abundance of EPT taxa often corresponded to shifts in the abundance of other non-EPT taxa and, together with consistently high abundance in all key taxa, including EPT, represent no limitations of food available to fish throughout the study area.



Upstream to downstream changes in % EPT, % Ephemeroptera, and % Plecoptera continue to occur simultaneous with changes in concentrations of mine-related constituents, including those that were above established effects levels (nitrate and dissolved nickel in the lower section of the upper study area; nitrate, dissolved nickel, sulphate and TDS throughout most of the middle study area; nitrate, dissolved nickel, and TDS at some monitoring areas in the lower study area) during low flows, and variations of habitat, including substrate size, water temperature, water depth, and calcite. Both water quality stressors and habitat variables were associated with BIC structure variation, particularly through the full study area and the middle study area, but the effect from individual predictors was difficult to separate. While there was no clear indication of direct effects of water quality on BIC abundance (e.g., toxicity), benthic invertebrates more tolerant of mine-influenced stressors may opportunistically thrive compared to sensitive organisms (e.g., Psychodidae), leading to a shift in BIC structure. Most habitat variables affected BIC variation throughout the full study area, however, substrate size and water temperature had a particularly strong effect on BIC variation in the lower study area where high % Plecoptera and low % Ephemeroptera continue to be observed. Although the FRO-S AWTF changed the concentrations of phosphorus, nitrate, and selenium (total and reduced species) in 2022 relative to pre-commissioning, these changes did not cause any changes in BIC structure relative to pre commissioning. In direct response to the study question, monitoring under the FRO LAEMP continues to indicate that multiple factors, including both mine-related stressors and habitat features, contribute to the variation in BIC in the FRO LAEMP study area, but covariation among these factors precludes the determination of the contribution of each individually.

3.7 Study Question #6

Study Question #6 (What are the factors influencing fish health and population in the Upper Fording River?) was evaluated through an integration of fish studies in the upper Fording River (i.e., UFR WCT Population Monitoring Program) with relevant data (seasonal drying, benthic invertebrate tissue chemistry, and water chemistry) from the FRO LAEMP and the RAEMP (WCT muscle selenium concentrations, condition factor, and observations of external anomalies) within the FRO LAEMP study area.

3.7.1 Henretta Lake

3.7.1.1 Overview

Henretta Lake is a constructed lentic habitat within Henretta Creek that was built as part of the lower Henretta Valley watershed reclamation during the mid-1990's. Since its construction, the lake has undergone significant morphological change, most notably the realignment of its inlet channel and the rehabilitation of the creek, lake, and surrounding floodplains in 2017



(Evaluation of Cause 2021). Henretta Lake has been identified as providing important overwintering habitat for WCT in the upper Fording River (Cope et al. 2016), as well as habitat for resident WCT (that have been observed within Henretta Lake during the summer and early fall; Penman et al. 2022). Previous monitoring has identified low dissolved oxygen (DO) concentrations occurring during winter months at the bottom of Henretta Lake (Teck 2021b), which can reduce the amount of available overwintering habitat for WCT. Monitoring in 2022 was focused on better characterizing water quality, lake mixing, and the potential for selenium bioaccumulation within Henretta Lake.

3.7.1.2 Henretta Lake Bathymetry

Henretta Lake has a total volume of 97,046.8 m³ and a maximum depth of 9.4 m (Table 3.1, Appendix Figure L.1). The deepest area of the lake is located along the northwest shoreline, where the bathymetry is steep (sharply decreasing to the maximum depth of the lake in approximately 16 m from the shoreline). The northeast and southern areas of the lake have a more gradual change in water depth, with the majority of the lake area south of the Henretta Creek inflow having a maximum depth of 5 m or less (Appendix Figure L.1). Data from the recent bathymetry survey of Henretta Lake suggest that there is a relatively small amount of lake volume in areas of the lake where the maximum depth is > 7.5 m (Table 3.1). Specifically, the volume of the lake below the depth of 7.5 m represents ~3.5% of the total lake volume.

The assessment of lake bathymetry was conducted in 2022 to better understand the suitability of the *in situ* logger chain location, which was deployed at FR_HENLAKE3 on May 4, 2022 as a continuous all-season monitoring location (Appendix Figure B.1). The logger chain at FR_HENLAKE3 supports a maximum logger depth of 7.5 m; however, there was concern that the deepest portion of the lake (where DO concentrations would be lowest) was not adequately captured. Data from the 2022 bathymetric survey indicates that the *in situ* logger deployment at FR_HENLAKE3 is suitable in capturing conditions throughout the Henretta Lake water column (only excluding conditions in a relatively small proportion of the lake compared to the total lake volume). Relocating the *in situ* deployment to the deepest area of the lake may also be problematic as this area occupies a narrow footprint (~20 m wide; Appendix Figure L.1) so the likelihood of the deepest loggers drifting into shallow areas (and becoming buried in sediment) is higher. Thus, moving the logger deployment to the deepest area of the lake is not recommended as it would only provide a small amount of additional data, may present data quality challenges, and would compromise the ability to make temporal comparisons before and after relocation.



Table 3.1: Henretta Lake Bathymetry, 2022

Depth (m)	Volume (m ³)	% of Total Lake Volume
0	97,047	100
0.5	87,572	90
1	78,645	81
1.5	70,198	72
2	62,149	64
2.5	54,517	56
3	47,279	49
3.5	40,461	42
4	34,173	35
4.5	28,397	29
5	23,138	24
5.5	18,429	19
6	14,298	15
6.5	10,699	11
7	7,463	8
7.5	4,606	5
8	2,296	2
8.5	936	1
9	157	0

3.7.1.3 Summary of *In Situ* Measures and Habitat Availability Assessment

During the winter of 2022, the water column of Henretta Lake was inversely stratified with the top 3 m of the water column well-oxygenated during all sampling events (ranging between 8 and 10 mg/L). In January, DO concentrations decreased to below the critical threshold of 5 mg/L for the protection of aquatic life (BC MOE 1997) at depths below 3.5 m, and in February and March, DO concentrations were typically < 1 mg/L below a depth of 5.5 m. The data-logger deployment in Henretta Lake in May 2022 presented unusual temporal and vertical trends in temperature and oxygen within the lake (Brooks et al. 2022a), that were atypical of expected conditions following ice-out (Wetzel 2001). Specifically, the warmest temperatures, highest DO concentrations, and highest measures of conductivity were present at the bottom of Henretta Lake (at a depth of 7.5). These unusual oxythermal dynamics may be indicative of a high-density water source, such as a groundwater intrusion, that would sink under the well-mixed epilimnion and result in isolated effects to hypolimnetic water quality. The atypical oxythermal regime was somewhat transient during early spring as an incomplete mixing effect occurred in the top 6 m of the water column between May 27th and 29th, 2022, and a full mixing event occurred between June 5th and 6th, 2022.

The temperature, DO, and conductivity data from July to October (summarized below) are presented in Brooks et al. 2022b, Brooks and Gordon 2022a, and Brooks and Gordon 2022b. During July and August, temperatures at all logger depths warmed in Henretta Lake following the June mixing event (Brooks et al. 2022b). By early August, warmer temperatures were typically observed at a depth of 6.25 m relative to shallower loggers. Moving into September, temperatures at 6.25-m and 7.5-m depth were higher than rest of the water column above, with temperatures at 6.25-m depth slightly warmer than those measured at 7.5 m depth (Brooks and Gordon 2022a). This phenomenon persisted until the last data download, at the end of October, despite cooling water temperatures measured at the lakes surface to a depth of 5 m (Brooks and Gordon 2022b).

In situ profiles collected in January, June and October of 2022 were compared to assess spatial variability in measures of temperature, DO, and conductivity (Appendix Table L.1). *In situ* measures were collected in eleven locations in January, and at three locations (FR_HENLAKE1, FR_HENLAKE2, and FR_HENLAKE3) in June and October. On average, spatial differences in temperature and DO were less than 1 °C and 1 mg/L, respectively (Appendix Table L.1). Conductivity measures varied spatially by 16.7 µs/cm in June and 19.2 µs/cm in October on average (Appendix Table L.1). Greater spatial variability in conductivity was observed during February, however this is likely associated with measures collected from 5-m depth (which ranged from 359 to 803 µs/cm; Appendix Table L.1). These data support the conclusion made



by Arnett 2023 (Appendix N), that the FR_HENLAKE3 data logger location is representative of lake-wide conditions.

For most of the deployment period (i.e., May to October), 100% of the Henretta Lake volume was considered to have low to no DO risk to WCT (i.e., above the chronic DO BC WQGL of 8 mg/L; Figure 3.14). Dissolved oxygen concentrations were below the chronic DO BCWQG (8 mg/L) in early May (prior to water column mixing) and during the June mixing event; however, ~60% and ~40% of the lake volume was still characterized as having little risk to WCT during those periods, respectively (Figure 3.14). Despite the reduction in the amount of high-DO habitat in June, the mixing event was brief, and thus chronic effects to WCT are not expected; however, additional logger data are required to identify low-oxygen risk during the overwintering prior to spring mixing (these data were collected over the 2022 to 2023 winter but were not available for inclusion in this report). Dissolved oxygen concentrations suggestive of an acute risk to WCT (i.e., < 5 mg/L) were only observed in early May prior to mixing and were isolated to ~10% of the lake volume (Figure 3.14). During September, the bottom data logger in the deployment was buried in sediment and thus, it is only possible to confidently state that ~90% of the lake had DO concentrations that would present low to no risk to WCT (as an assessment of the entire lake was not possible; Figure 3.14). The assessment of WCT habitat availability focused on DO concentrations since temperatures in Henretta Lake were consistently lower than the lethal temperature criteria for WCT between May and October (maximum temperature observed in Henretta Lake was 10.08 °C; Appendix N).

Overall, DO measures collected under ice were below the critical threshold of 5 mg/L DO for the protection of aquatic life when vertical profiles were collected in January, February, and March of 2022. Anoxic conditions (DO < 1 mg/L) were also present in February and March between the maximum depth of 8.5 and 5.5 m depth, and DO concentrations were less than the 5 mg/L DO criteria below a depth of ~ 3.5 m. In contrast, the continuous logger data from May to October 2022 suggest that Henretta Lake had suitable oxygenated habitat for resident WCT (at all depths) during the open-water season.

3.7.1.4 Summary of Water Chemistry Data

Water chemistry samples were collected in Henretta Lake from three locations (FR_HENLAKE1, FR_HENLAKE2, and FR_HENLAKE 3; Appendix Figure B.1) and at three depths (1 m, 3.5 m, and 7 m) in February, June, and October 2022 (Appendix Figure L.2). Water chemistry data are summarized in Minnow 2022 and Arnett 2023 (Appendix N). In brief, the concentrations of various water quality constituents increased with depth in February 2022. Among constituents of interest (i.e., Order constituents and nickel), concentrations of nitrate, sulphate, total and dissolved cadmium, nickel, and selenium were highest in the water sample collected from 7-m depth



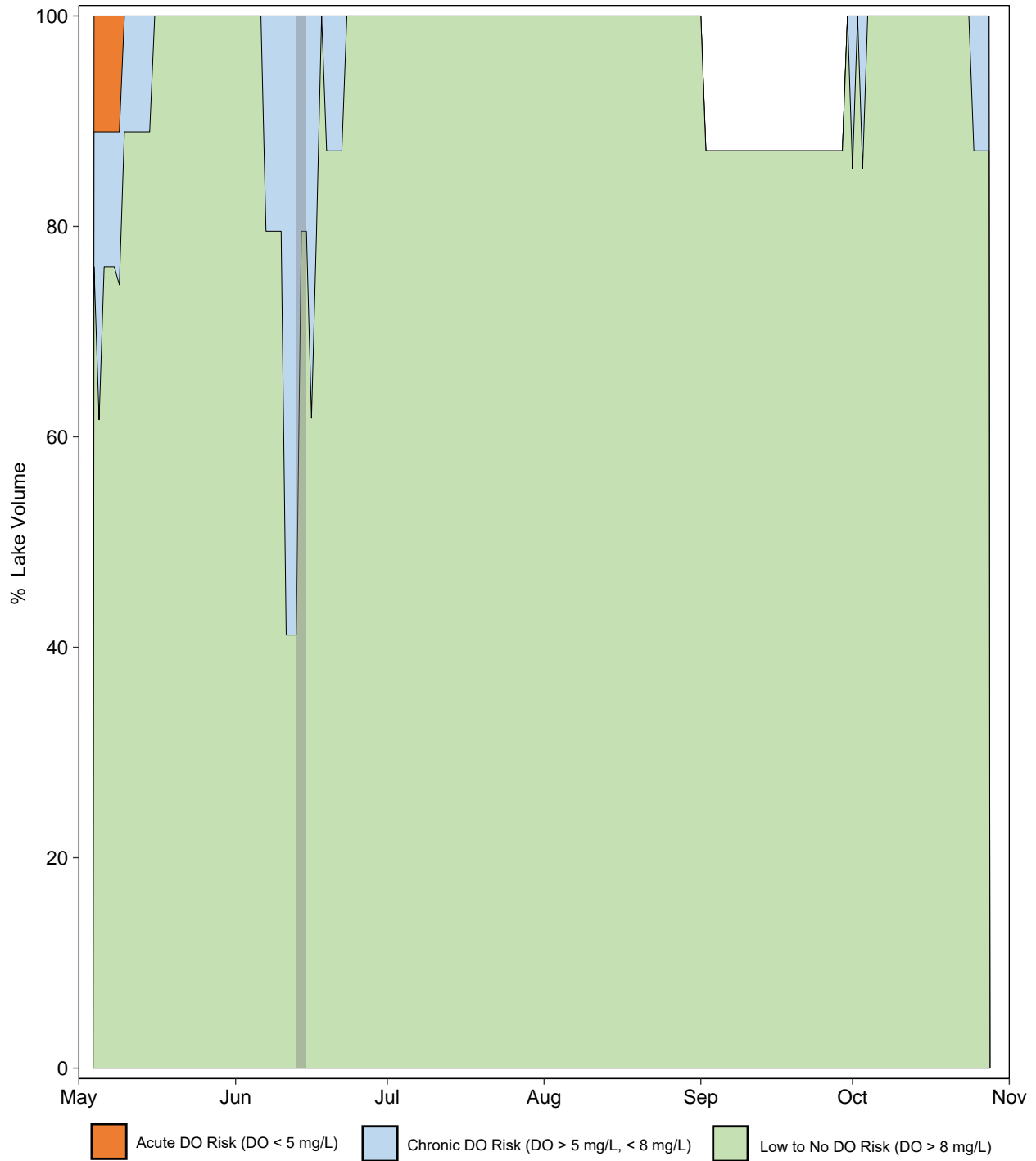


Figure 3.1 : Westslope Cutthroat Trout Habitat Availability using Dissolved Oxygen Criteria, Henretta Lake, May to October 2022

Notes: DO = dissolved oxygen. Suitability was assessed based on daily means. Loggers were deployed at 1.25 m, 2.5 m, 3.75 m, 5 m, 6.25 m, and 7.5 m. Shaded grey area indicates the June mixing event. To assess the proportion of lake suitable for westslope cutthroat trout, total lake volume was divided into horizontal strata based on logger deployment depths. Dissolved oxygen for a given horizontal slice as estimated based on data recovered at the base of the lake strata (e.g., temperature measure at 1.25 m depth was assumed to be constant for the 0 to 1.25 m depth horizontal slice). The deepest interval encompassed both 6.25 m to 7.5 m water depth as well as 7.5 m to the maximum depth of the lake; no data logger was deployed at the maximum lake depth. In some cases the total volume assessed does not represent 100% of the lake due to missing data.

(Appendix Figure L.2). Concentrations of nitrate exceeded the level 2 updated EC at 7-m depth and concentrations of dissolved nickel exceeded the proposed level 2 nickel benchmark at 7-m depth. It is atypical to observe relatively higher concentrations of nitrate and sulphate under anoxic conditions (such as those observed at depth when Henretta Lake is ice covered) as nitrate should be reduced to ammonia and sulphate should be reduced to sulphide (Wetzel 2001). Concentrations of ammonia also increase with depth in February 2022 (Minnow 2022; Appendix N) and confirm anoxic conditions at depth in Henretta Lake. The water chemistry data, particularly nitrate and sulphate results, suggest there is another input to Henretta Lake occurring at depth.

Concentrations of selenite also increased with depth during the winter of 2022 (consistent with 2021 findings summarized in Minnow 2022; Appendix N). The water chemistry sample collected from 7-m depth in February 2022 had detectable concentrations of both dimethylselenoxide and methylseleninic acid (with concentrations above the interim screening value for bioavailable selenium; Appendix Figure L.2). All other samples had concentrations of selenium species below the LRL.

The June water chemistry data had similar constituent concentrations with depth and were indicative of a well-mixed water column (Appendix Figure L.2). These water chemistry data support the *in situ* logger data which suggest a homogeneous water column following the early-June mixing event. Concentrations of Order constituents and nickel do not exceed respective screening criteria (i.e., updated EC, EVWQP benchmarks [dissolved cadmium], or proposed benchmarks [dissolved nickel]) at any depth or sampling station in June. There were also no changes in selenite with depth, and concentrations of organoselenium species were all below the LRL (Appendix Figure L.2).

Patterns in water chemistry were similar in October and February, with concentrations of Order constituents (nitrate, sulphate, total selenium, total cadmium) and total and dissolved nickel increasing with depth (Appendix Figure L.2). Concentrations of nitrate and dissolved nickel were above the level 1 updated EC and proposed level 1 benchmark, respectively, in all sampling areas at a depth of 7 m. Aqueous concentrations of selenite, dimethylselenoxide, and methylseleninic acid were also higher at 7-m depth relative to concentrations observed at 1-m and 3-m depth (Appendix Figure L.1) despite the absence of reducing conditions (DO concentrations were > 12 mg/L at 7.5-m depth; Appendix Table L.1). Despite the presence of detectable concentrations of organoselenium species, modelled benthic invertebrate tissue selenium concentrations (derived using the Golder 2022b B-tool) were below the Level 1 benchmark for effects to juvenile fish (based on water chemistry data collected at all depths in Henretta Lake; Appendix Figure L.3).



3.7.2 Drying Surveys

After five years of drying surveys in the FRO LAEMP study area, there is now a comprehensive understanding of the spatial and temporal extent of drying within the FRO LAEMP study area, including in Henretta Creek upstream of FRO operations and water use licenses. Specifically, multiple years of monitoring have identified year-to-year variability on the timing of drying (Appendix Table E.4); however, once low flows are established in early winter, dry sections expand but no new dry areas are observed throughout the season (Figure 3.15; Appendix Figures E.5 to E.13; Minnow and Lotic 2019b, 2020b, 2021b, 2022). The timing and location of drying in the FRO LAEMP study area in 2022 was similar to previous years and may have limited fish movement. Drying was first observed in the Fording River upstream of the Greenhouse Side Channel confluence (southern survey area) in late September and downstream of the Clode Creek confluence (northern survey area) in mid-October (Figure 3.15; Appendix Table E.4; Appendix Figures E.5 to E.9¹⁴). Consistent with previous years, areas in Henretta Creek upstream of the FRO boundary dried first in 2022 and had the largest number of dry days over the year (Appendix Table E.5).

3.7.3 Westslope Cutthroat Trout Health

3.7.3.1 Tissue Selenium Concentrations

Tissue selenium concentrations from WCT captured in Henretta Lake and mine-exposed areas in the Fording River under the RAEMP indicated low risk to fish health. Except for one anomalously high tissue selenium concentration collected at the Multiplate (RG_MP1) in each of 2021 (29 mg/kg dw) and 2022 (17 mg/kg dw), selenium concentrations in all tissue samples collected from mine-exposed areas (4.7 mg/kg dw to 12 mg/kg dw; n=38 fish), including Henretta Lake (5.3 mg/kg dw to 11 mg/kg dw; n=5 fish), were below the species-specific WCT benchmark¹⁵ (15.5 mg/kg dw; muscle equivalent based on egg EC10; Nautilus and Interior

¹⁴ Although Figures E.9 and E.10 show drying in the northern survey area in August and September, respectively, drying in these areas were in sections of the former mainstem of the Fording River but the river was still connected by an adjacent avulsion channel.

¹⁵ Measurement of selenium in eggs or ripening ovaries is the most direct way to evaluate potential effects of selenium on fish reproduction compared to measurement of selenium in water or other tissue types (Janz et al. 2010; Golder 2014; USEPA 2016). For this reason, a site-specific benchmark was derived based on the EC10 for fish egg/ovary concentrations (25 mg/kg dw; Nautilus and Interior Reforestation, 2011). Non-lethal expression of eggs is not always possible, therefore, monitoring of selenium in fish has often involved non-lethal collection of muscle plugs for selenium analysis and compared to the site-specific benchmark converted to a muscle-equivalent based on the muscle:egg selenium concentration ratio of 1:1.6 in WCT (Nautilus and Interior Reforestation 2011). Typically, non-lethal muscle sampling is conducted during the same timeframe just prior to spawning, however, a comparison of WCT muscle selenium concentrations from May (i.e., prior to spawning) and late August/September (i.e., post-spawning) in 2015 under the RAEMP showed no differences among seasons (Minnow 2018a).



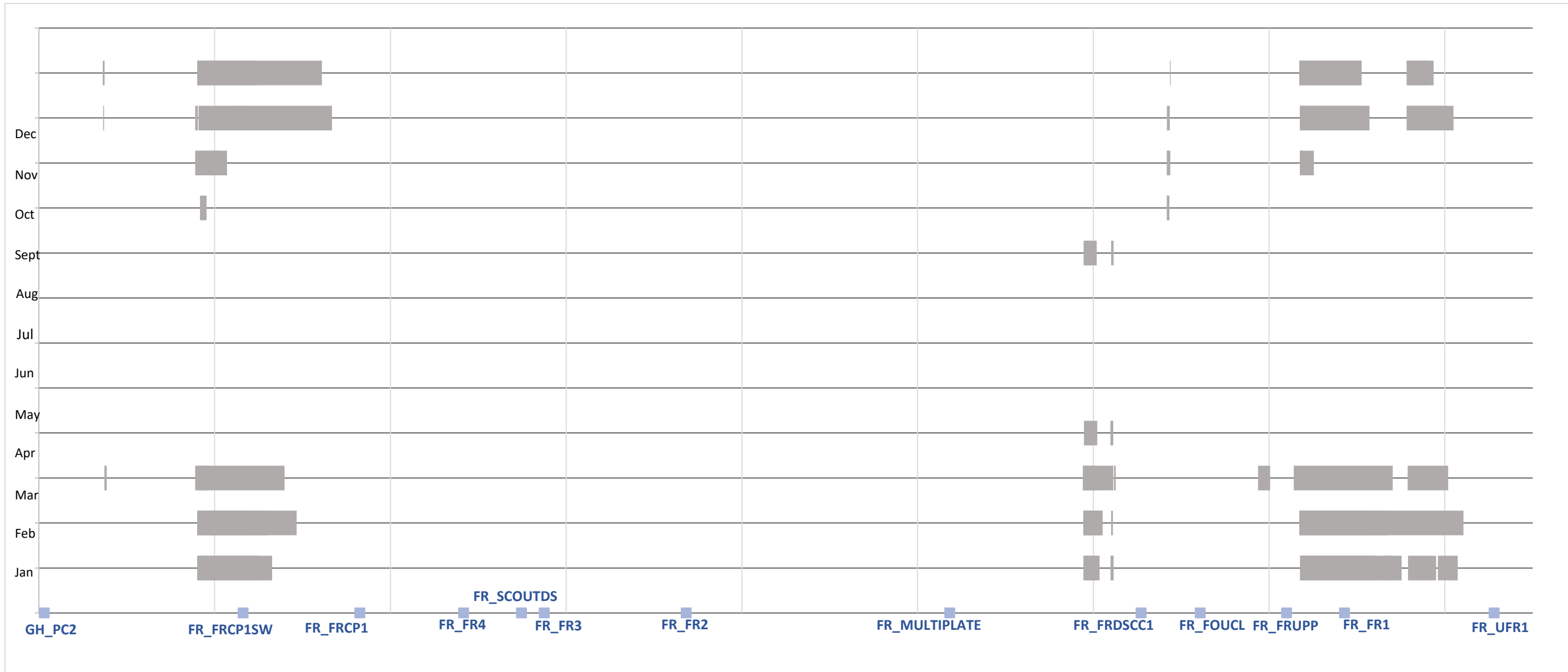


Figure 3.15: Summary of Seasonal Drying Along the Fording River, FRO LAEMP, 2022

Notes: Figure includes both the drying survey and stranding survey drying data along the Fording River, but does not include side channels or the Henretta Creek drying data. Hydrometric stations are located along the x-axis.

Reforestation 2011) for potential effects of selenium on reproduction (Figure 3.16; Appendix Table J.1). These results indicate a low potential risk of effects to WCT egg and embryo development. Selenium concentrations in muscle tissue from WCT caught in Henretta Lake in 2022 were generally lower than those collected from fish at the Multiplate culvert (RG_MP1) and lower than those collected from fish captured at other mine-exposed areas within the FRO LAEMP study area in previous years (2018 and 2021; Figure 3.16; Appendix J.1). The cause of the two elevated tissue selenium concentrations from fish captured at the Multiplate culvert (one in 2021 and one in 2022) is currently unknown (i.e., selenium concentrations in water and benthic invertebrate tissue could not explain the elevated selenium concentration in fish muscle) and confirmatory sampling in 2022 resulted in similar results (1 of 8 samples above level 1 benchmark).

Similar to the previous year, muscle samples were collected from WCT incidental mortalities found during routine monitoring or fish salvage and sampling programs within the FRO LAEMP study area in 2022. Overall, twenty-one fish were recovered for tissue selenium analysis, eighteen of which were mortalities opportunistically sampled from fish sampling or salvage programs and three of which were mortalities found during routine monitoring programs (Appendix Table J.2; Appendix Figure J.1). If fish were in a suitable condition to be sampled (i.e., little to no decomposition), dorsal muscle tissue was analyzed for selenium concentrations; however, the data should be interpreted with caution due to uncertainty around several factors (e.g., size class of fish, where fish may have lived or moved from prior to being found, duration between mortality and sampling) that may influence accuracy or interpretation of results. Only four fish were found in 2022 that were too decomposed to complete additional analysis. The study team is currently looking into how to prioritize sampling of incidental fish mortalities to maximize value of this dataset, including methods of interpreting the data in meaningful ways.

3.7.3.2 RAEMP WCT Anomalies, Meristics, and Condition Factor

Westslope Cutthroat Trout sampled by angling for non-lethal tissue plugs under the RAEMP were also assessed for external anomalies and meristic data (weight and fork length, used to calculate Fulton's condition factor). Of the WCT captured within mine-exposed areas in the FRO LAEMP study area under the RAEMP in 2022 (13 total fish), an anomaly (substantially shortened/missing operculum on one side of the fish) was detected in one fish from the Multiplate culvert (Appendix Table J.1); however, condition factor for this fish was similar to other fish captured within the study area (Figure 3.17 Appendix Table J.1), suggesting it was otherwise healthy.



WCT Caught Under the RAEMP

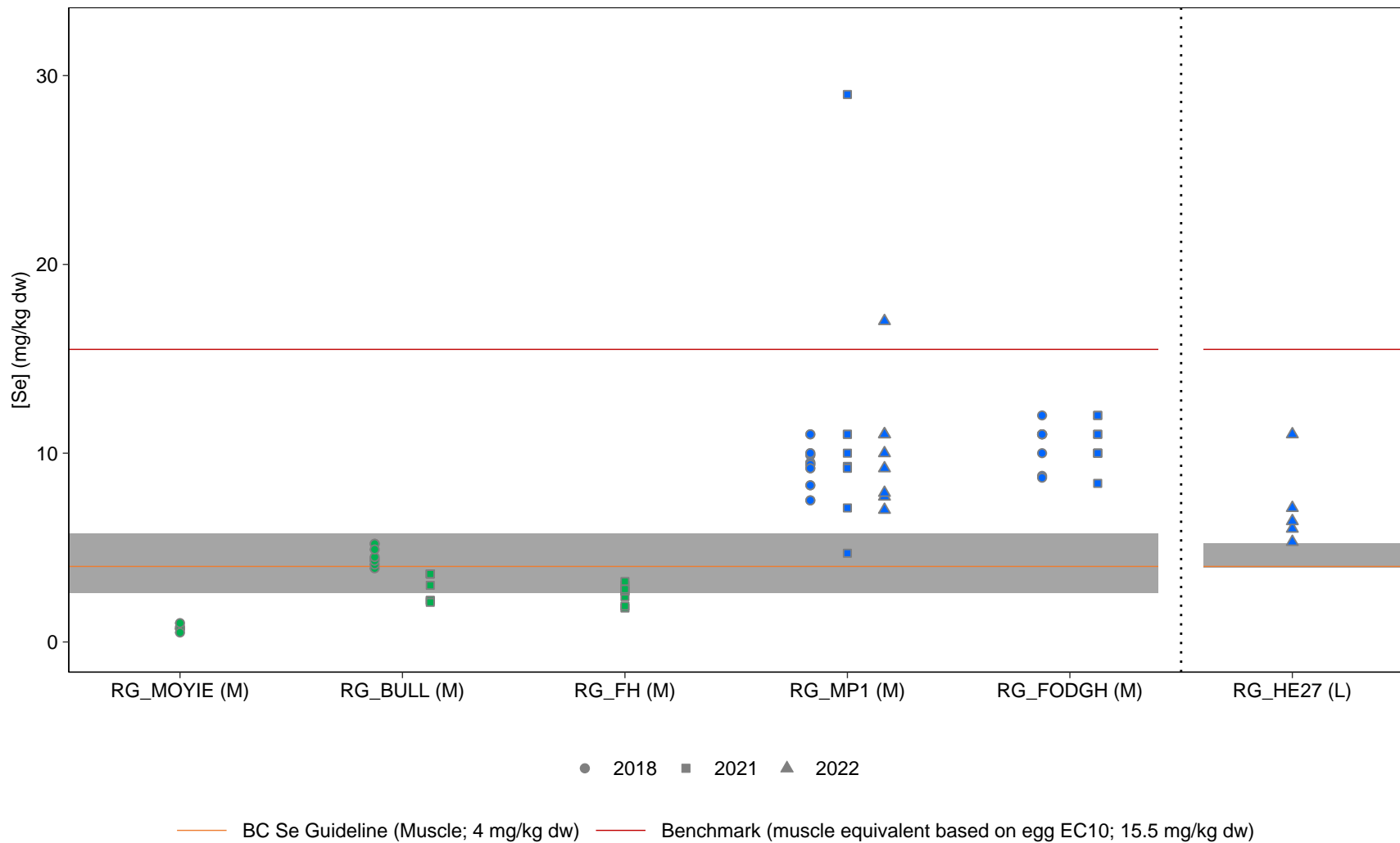


Figure 3. : Westslope Cutthroat Trout Muscle Selenium Concentrations, FRO LAEMP, 2018, 2021, and 2022

Notes: Green represents reference stations and blue represents mine-exposed stations. All muscle samples were collected as non-lethal muscle plugs. Gray shading represents the reference area normal range of lotic/lentic environments defined as the 2.5th and 97.5th percentiles of the distribution of reference area data (pooled 1996 to 2019 data) reported in the RAEMP. M = Mainstem, T = Tributary, (L) = Lentic.

WCT Caught Under the RAEMP

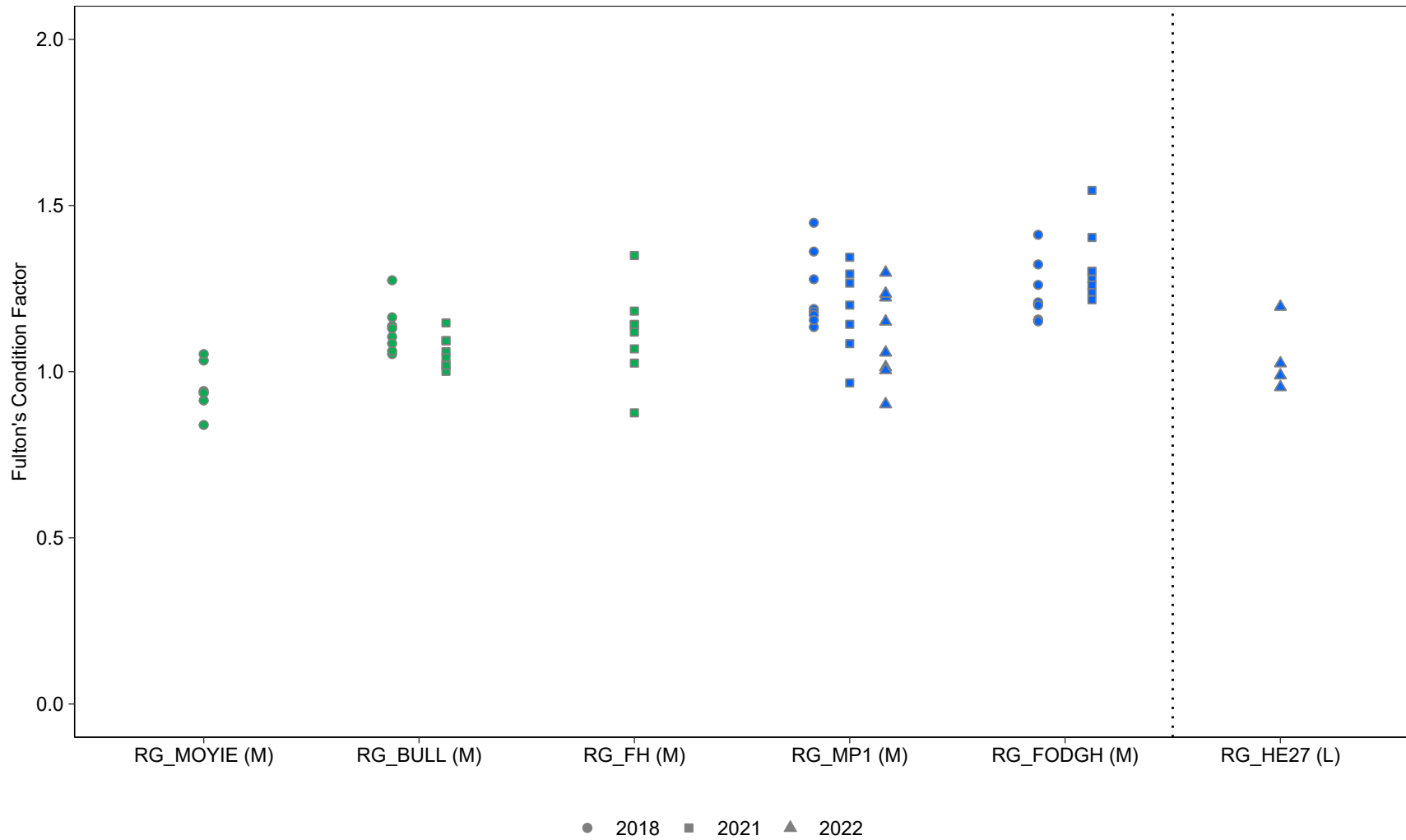


Figure 7: Westslope Cutthroat Trout Condition, FRO LAEMP, 2018, 2021, and 2022

Notes: Green represents reference stations and blue represents mine-exposed stations. M = Mainstem, T = Tributary, L = Lentic. A Fulton's Condition Factor greater than 1 was considered a healthy fish based on comparisons to other healthy freshwater salmonids (He et al. 2008)

Fulton's¹⁶ condition factor for all WCT captured at mine-exposed areas under the RAEMP, as well as fish angled from Henretta Lake, were similar or slightly higher than those captured at reference areas (Figure 3.17; Appendix Table J.1) and were similar to other healthy freshwater salmonids (He et al. 2008). Fish captured under other programs were also assessed for anomalies, but data are currently being processed and will be reported under the RAEMP. Anomalies and condition factor were not assessed for fish sampled from incidental mortalities (Appendix Table J.2). Overall, based on the information available for WCT under the RAEMP within the FRO LAEMP study area, there was no indication of mine-related effects on fish health.

3.7.3.3 Chronic Toxicity Testing

Chronic toxicity testing of water collected from stations throughout the upper Fording River indicated that concentrations of mine-related constituents were unlikely to cause toxicity to fish. At FR_FRCP1, downstream of the former Cataract Creek confluence, and FR_FRABCH, the Compliance Point upstream of Chauncey Creek, no adverse effect to any rainbow trout (*O. mykiss*) or fathead minnow (*P. promelas*) reproduction, survival, or health endpoint was observed in 2022 (Appendix Figure D.56). Although there were several fish endpoints affected by water quality at FR_FRCP1 prior to the diversion of Cataract Creek¹⁷, few chronic toxicity tests have had adverse effects since diversion, and most that demonstrated adverse effects were confounded by microbial contamination (Appendix Figure D.56). Likewise, very few adverse effects have been identified in water from FR_FRABCH in previous years, and most that demonstrated adverse effects were a direct result of microbes or confounded by microbial contamination. Furthermore, in previous years adverse effects to fish health endpoints occurred during Q1 and Q4 and these seasons do not align with when WCT early life stages are expected to be present in the upper Fording River (Evaluation of Cause Team 2021). Chronic toxicity testing was conducted on 30-d early life stage rainbow trout and fathead minnow, and observed adverse effects are not expected to translate to other life stages present during Q1 and Q4.

3.7.4 Westslope Cutthroat Trout Population Monitoring

3.7.4.1 Redd Surveys

The distribution of redds, each of which may have more than one nest, was widespread throughout the mainstem and into tributaries of the upper Fording River, including LCO Dry Creek,

¹⁶ Fulton's condition factor was used to summarize body conditions for WCT captured under the RAEMP because adult fish were targeted (different than the age classes summarized in the Population Monitoring Program) and to retain comparability of data to other fish captured under the RAEMP and the Aquatic Data Integration Tool (ADIT).

¹⁷ Cataract Creek was diverted through Swift Ponds to Swift Creek (i.e., upstream of FR_SCOUTDS and FR_FR4) in August of 2019.



Ewin Creek¹⁸, and Chauncey Creek in both 2021 and 2022 (Figure 3.18). The distribution of redds in 2020 was more limited than either 2021 or 2022, but due to a difference in methods the number of estimated nests cannot be directly compared. The estimated total unique nest counts in most subpopulations in 2022 were lower than those in 2021, particularly for Chauncey and Fish Pond Creeks (Figure 3.19). In 2021, there were an estimated 240 unique nests (95% CI 172-338) which can be compared with an estimated 118 unique nests (95% CI 75-174) in 2022. This decrease in nest counts in 2022 relative to 2021 may be associated with the cold early season water temperatures (Thorley et al 2023a). Spawning was estimated to have started on June 8th and continue until August 8th in 2022, which was later in the season than usual in some streams (Thorley et al. 2023a). Redds were first recorded in early July in the mainstem UFR, rather than early June as seen in 2021. Only Fish Pond Creek and Greenhills Creek recorded redds before mid-June.

3.7.4.2 Length at Age-0

The size of age-0 fish at the onset of winter has implications for population dynamics, with WCT less than ~28 mm fork length expected to have poor overwinter survival¹⁹ (Coleman and Fausch 2007a, 2007b). Relatively little data are available for age-0s over the years from monitoring in the upper Fording River as sampling methodologies have not historically targeted age-0s, though dip-net sampling that targets this age-class fish was implemented in 2022. All fish lengths are fork lengths unless otherwise stated.

The estimated average fork length of an age-0 fish in the mainstem UFR on October 1st varied between a low of 40 mm (95% CI 32-54) in 2022 and a high of a 46 mm (95% CI 36-66) in 2019 (Figure 3.20). The low in 2022 can be compared with fork lengths of ~46 (95% CI 35-63) in 2020 and 2021. The short age-0s in 2022 are consistent with the shorter growing season due to colder than usual early season temperatures.

The length of age-0 fish is sensitive to local conditions, in particular temperature, as indicated by the range of length at age-0s measured across the UFR (Figure 3.21). The estimated fork lengths for age-0 fish in tributaries in an average year were longest in lower Greenhills Creek at 64 mm (95% CI 58-69) and Lake Mountain and lower Henretta, all of which are pond (or lake) influenced and likely have warmer summer water temperatures. The estimated fork lengths were

¹⁸ It is not clear if Ewin Creek was surveyed in 2020, but it is likely that Chauncey Creek was up to the highway culvert (Cope 2020).

¹⁹ The total length reported by Coleman and Fausch 2007a, 2007b was converted to fork length using a base on Mayhood 2012



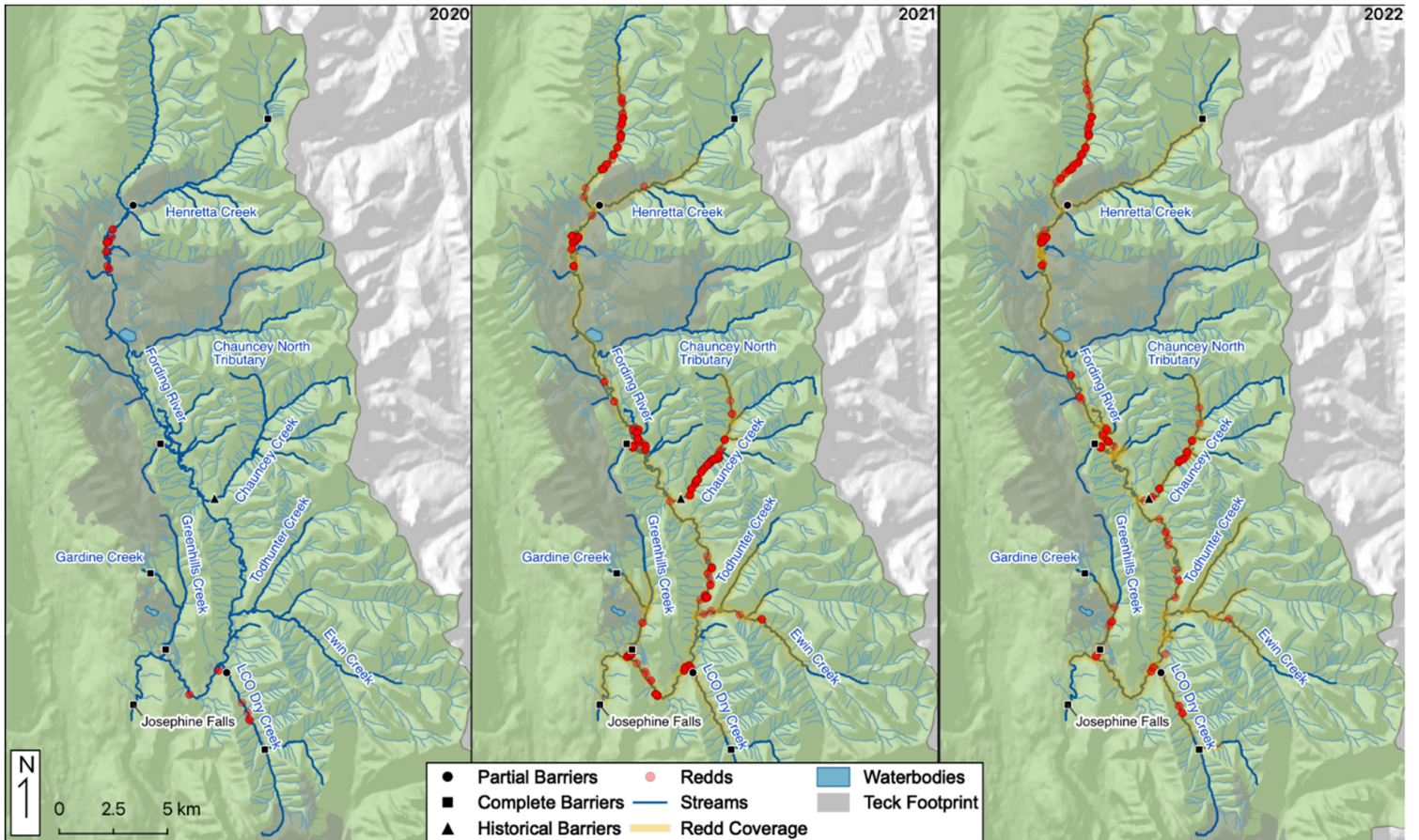


Figure 3.18: The Recorded Definitive Redds by year with Redd Survey Coverage

Notes: Redds are indicated as transparent points so that more intense color indicates higher densities.

Source Thorley et al. 2023a.

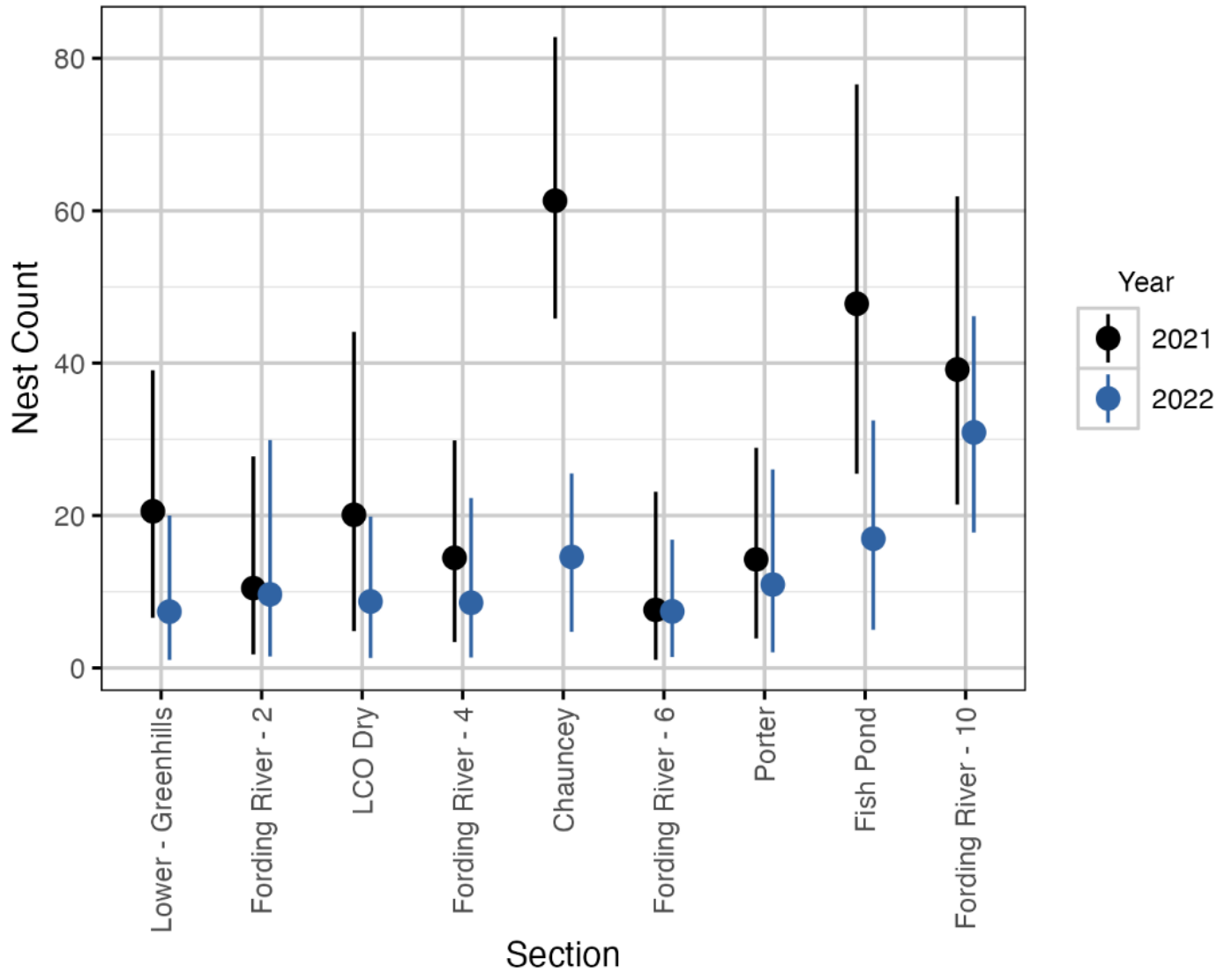


Figure 3.19: The Estimated Total Unique Nest Count in 2022 by Stream (with 95% CIs)

Source Thorley et al. 2023a.

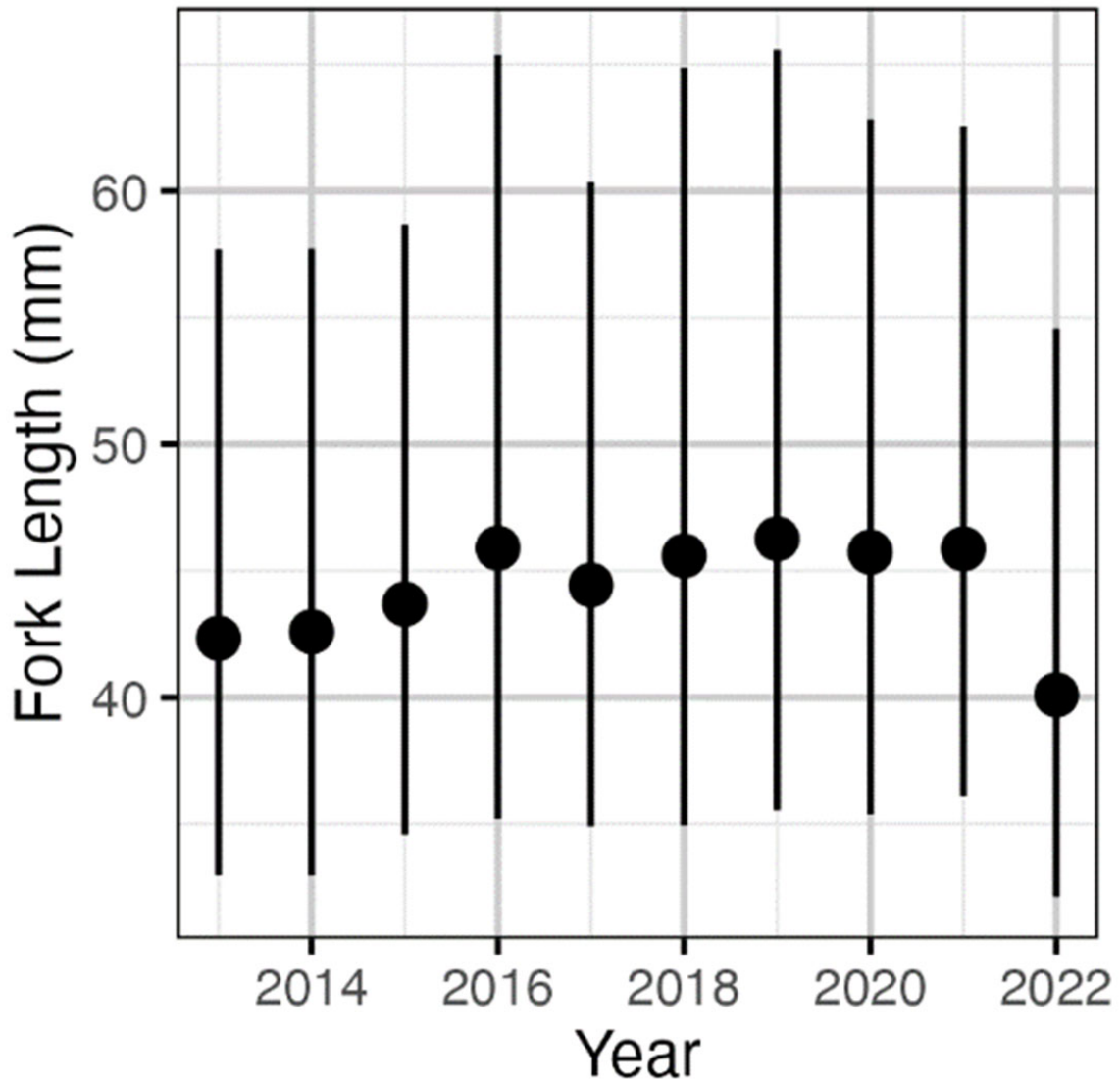


Figure 3.20: Estimated Annual Average Fork Length of Age-0 Fish in the Mainstem Upper Fording River, October 1st (with 95% CI)

Source : Thorley et al. 2023a.

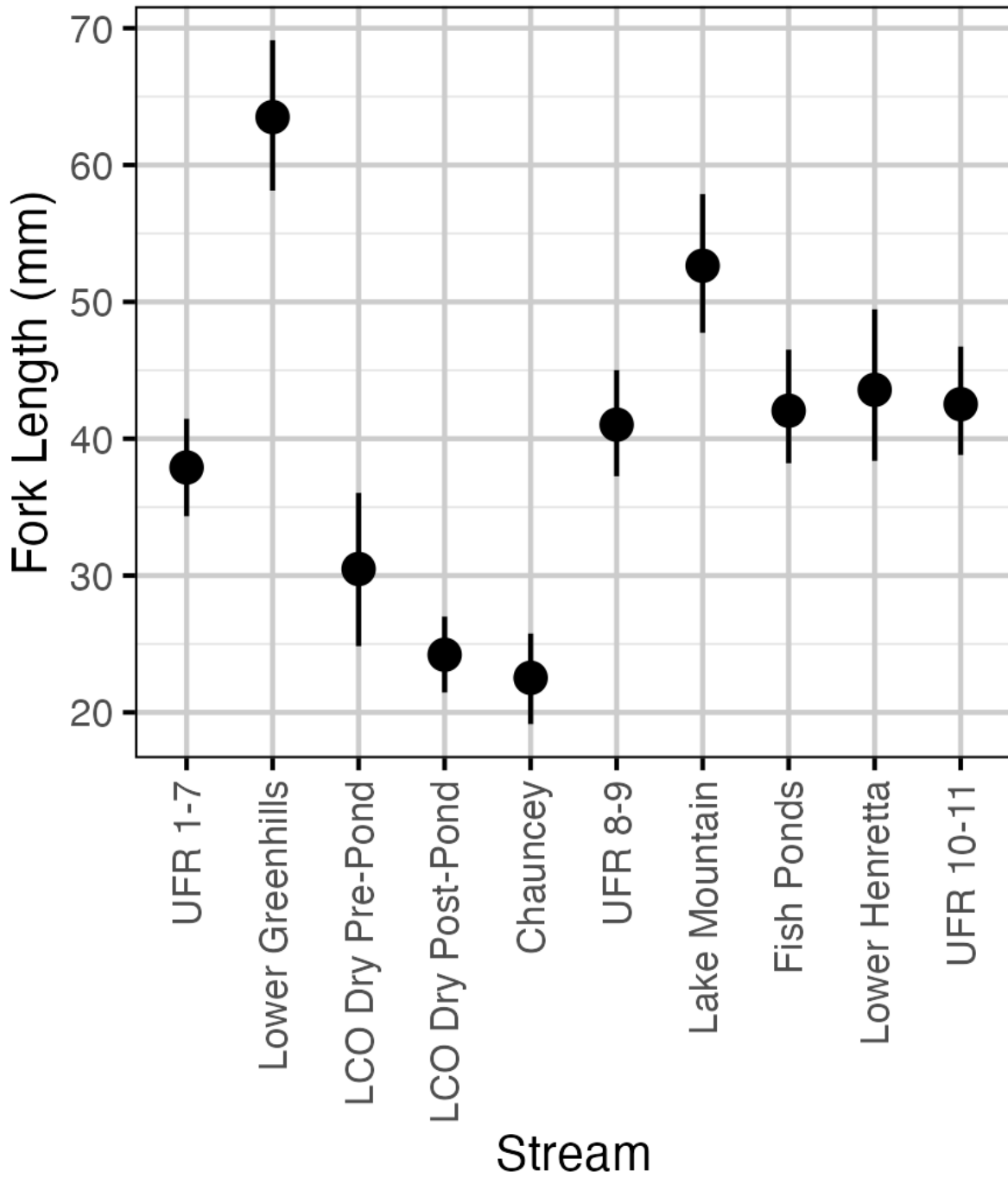


Figure 3.21: Estimated Fork Length for Typical Age-0 fish on October 1 in a Typical Year by Subpopulation (with 95% CI)

Source: Thorley et al. 2023a.

shortest for Chauncey Creek, at 23 mm (95% CI 19-26) and in LCO Dry after the main channel was bypassed around the sediment ponds in 2020 (LCO Dry Creek-Post Pond), at 24 mm (95% CI 21-27). Prior to 2020 the estimated fork length for the age-0 fish in LCO Dry Creek in an average year was 30 mm (95% CI 25-36) (Thorley et al 2023a). The relationship between age-0 growth and water temperatures will be a focus of the population monitoring program going forward.

3.7.4.3 Body Condition

Body condition is a measure of fish health based on the ratio of fish weight to length. All else being equal, fish with higher body condition would be expected to have more energy stores for growth, reproduction, and metabolic processes than fish of a similar length but lower body condition. Body condition of age-1 and age-2+ (90 to 169 mm fork length) was estimated using an allometric mass-length model that uses a site-specific scaling factor based on data from the population monitoring program for this size class. It is expressed as the predicted weight of a 100 mm WCT to estimate the percent difference in body condition relative to the average for the sub-populations in an average year (Thorley et al 2023a). Body condition was estimated to be slightly above average in 2022 at 1% (95% CI -6-6; Figure 3.22). Fish condition was estimated to be slightly higher for fish in UFR 1-7, Upper Greenhills Creek, LCO Dry Creek and Fish Pond Creek whereas condition was lower for fish in Lower Greenhills Creek, UFR sections 8-9, and Lower Henretta Creek although the differences were small relative to the uncertainty (Figure 3.23 Appendix Figure J.2). The estimated body condition of a 100 mm fish in 2022 was higher than in 2021 for all sub-populations except for UFR 8-9 (Figure 3.6).

3.7.4.4 Abundance

In 2022, the total age-1 abundance of the upper Fording River population was estimated to be 2,300 fish (95% CI 1,200-5,100) and the age-2+ abundance was estimated to be 4,100 fish (95% CI 2,300-8,800). These values are similar to 2021 and within the historical range of variability (Figure 3.24), although still below the highest estimated abundance for age-1 fish in 2015 at 8,400 fish (95% CI 4,100-23,000) and in 2017 for age-2+ fish at 21,000 individuals (95% CI 12,000-45,000; Thorley et al 2023a).

(Sub)adult (>300 mm) abundance followed a similar trend as age-1 and age-2+ fish and peaked in 2017, at 5,200 fish, before dropping by ~93% to 330 fish in 2019 after the population decline (Figure 3.25; Thorley et al 2023a). Snorkel data indicated a continued increase in the subadult and adult population in 2022, which has increased from ~330 in 2019 to ~2,300 fish in 2022 and was higher in 2022 than in 2021 (Figure 3.25). The fork length distribution of fish counted in the



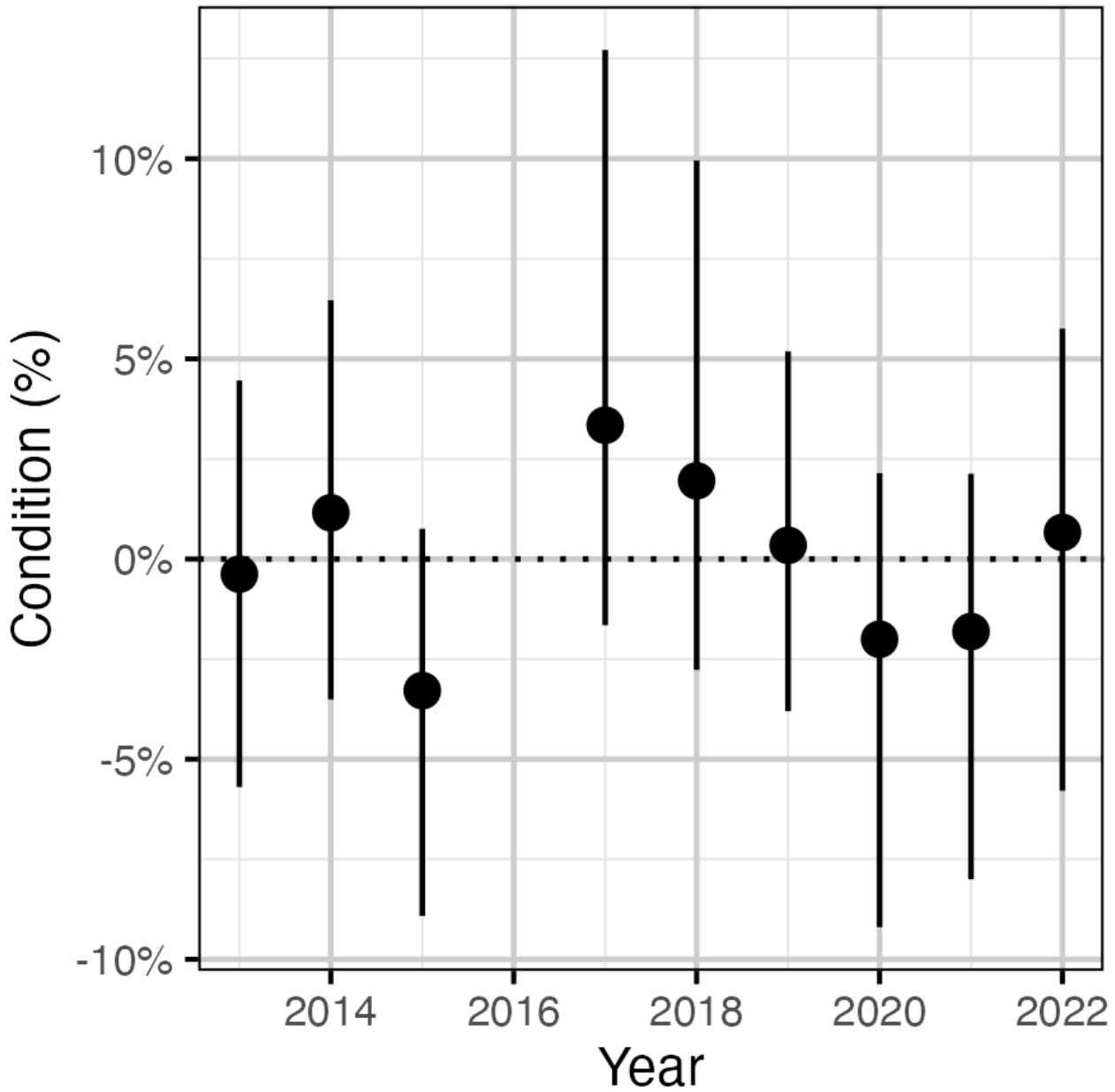


Figure 3.22: The Estimated Percent Difference in Body Condition Relative to the Average for Subpopulations in an Average Year by Year (with 95% CIs)

Source: Thorley et al. 2023a.

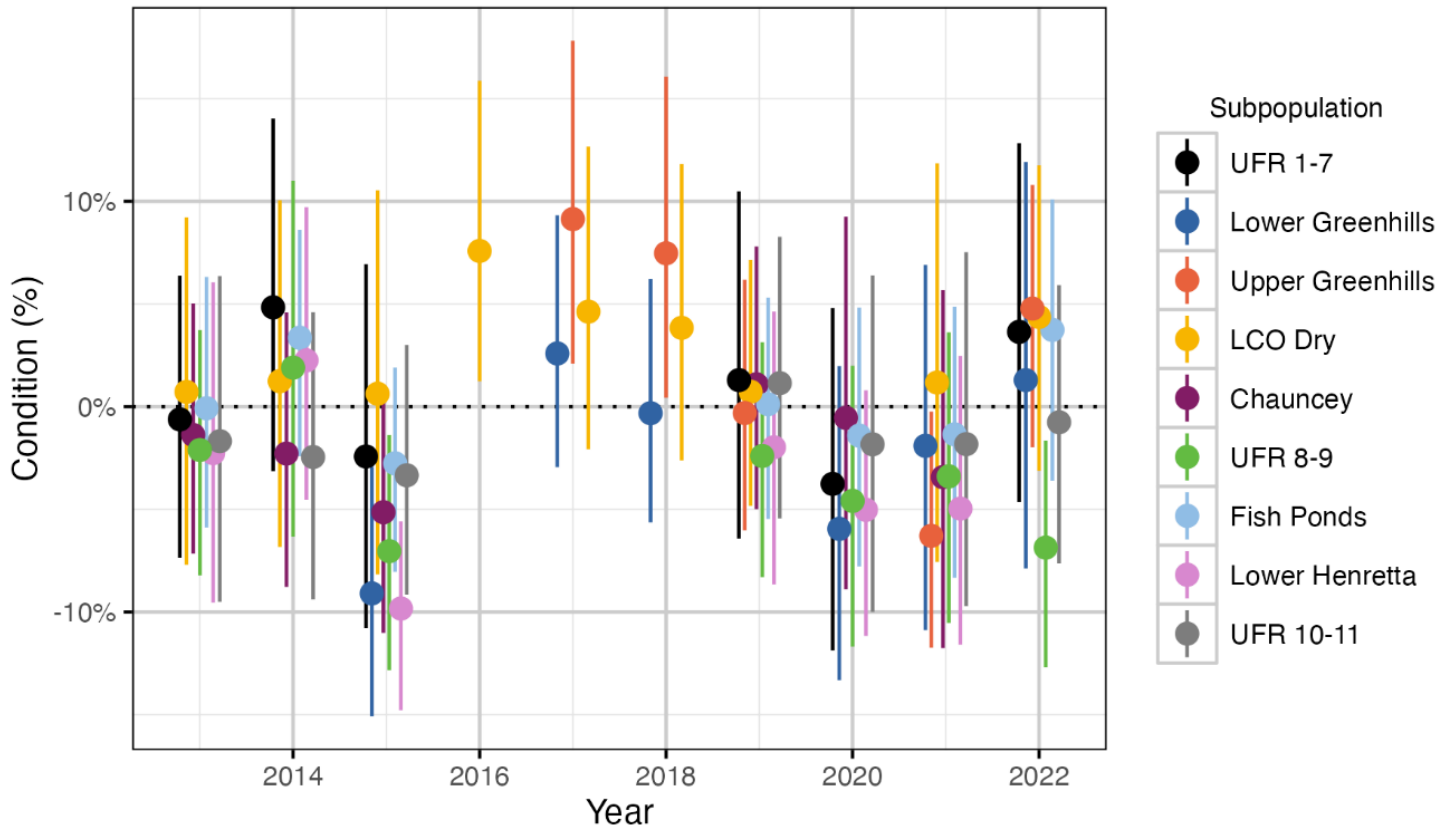


Figure 3.23: The Estimated Percent Difference in the Body Condition Relative to the Average Subpopulation in an Average Year by Year by Sub-population (with 95% CIs)

Source: Thorley et al. 2023a.

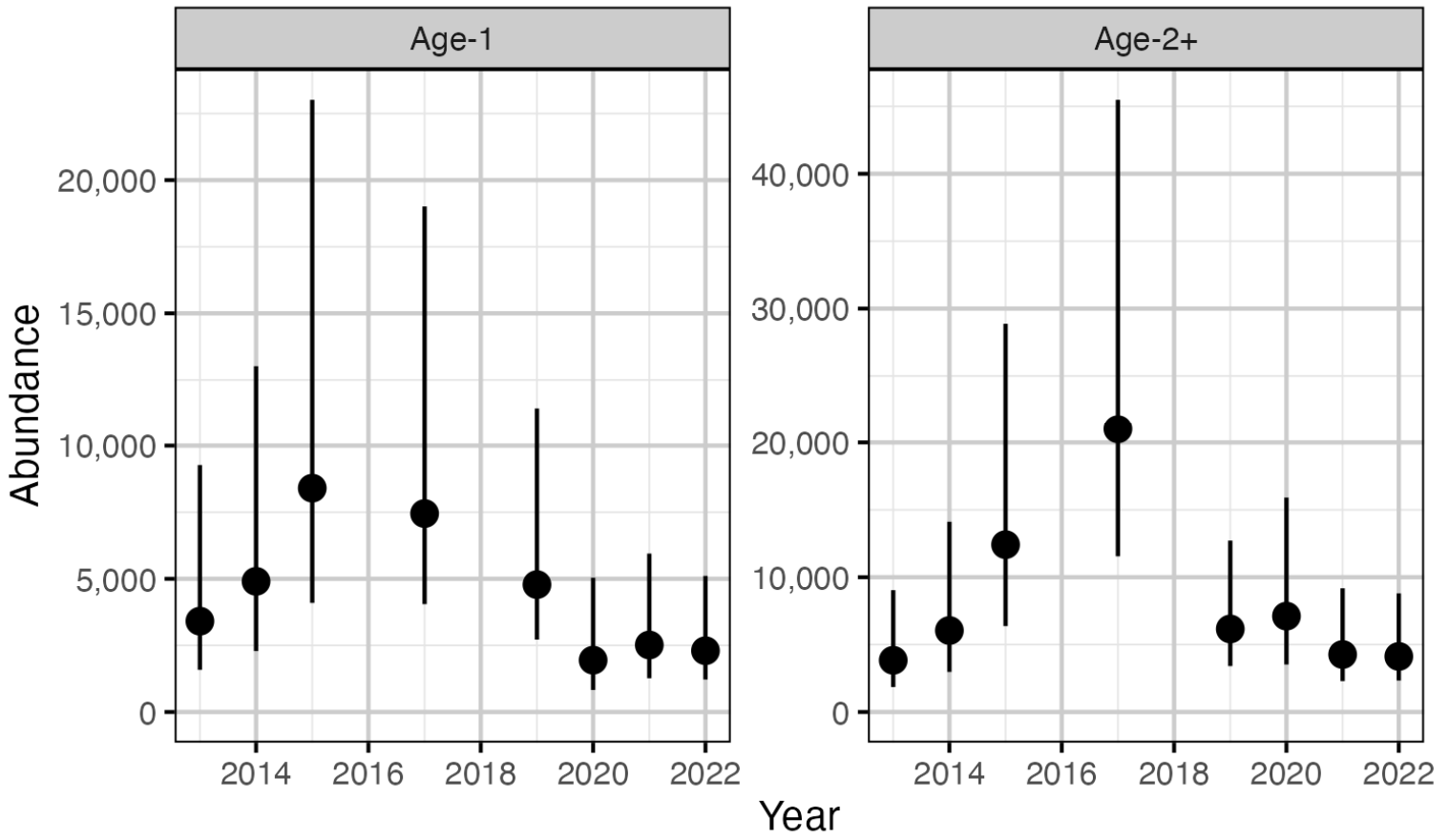


Figure 3.24: The Estimated Abundance Age-1 and Age-2+ WCT by Year and Life-Stage (with 95% CIs)

Source: Thorley et al. 2023a.

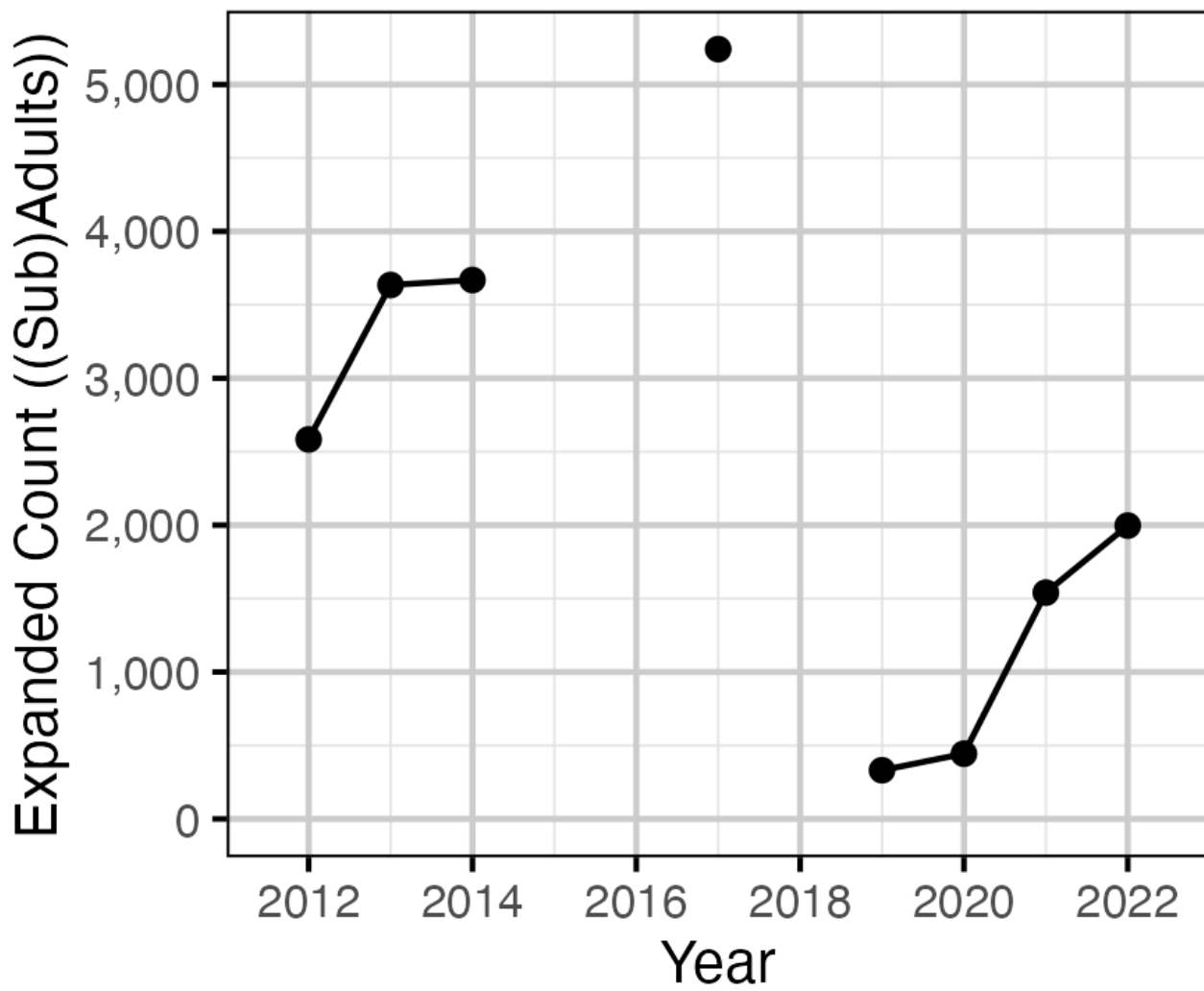


Figure 3.25: The Estimated Fall (Sub)Adult Abundance by Year Assuming an Efficiency of 42% for 2012, 23% for 2012 and 32% for 2014, 2017 and 2019 to 2022

Source: Thorley et al. 2023a.

upper Fording River also showed a greater proportion of fish in the age-2+ size range as well as more adults >300 mm in 2022 than in 2021 (Figure 3.26).

In addition to the annual population monitoring surveys, in 2022 an angling survey was conducted in Henretta Lake to improve the understanding of WCT use in that waterbody. According to subadult and adult population estimates, approximately 4% of the adult WCT UFR population was caught and sampled during the Henretta Lake angling survey (65 unique WCT caught /1,500 estimated WCT population size; Thorley et al. 2022b). Mean fork length of WCT was 363 ± 83 mm and the range was 227-502 mm, which suggests that large, old WCT use Henretta Lake (Penman et al 2022).

3.7.4.5 Egg to age-1 Survival

Egg to age-1 survival refers to the number of age-1 fish present in the fall of a given year, which were produced by spawning in the previous year (i.e., the spawn year). The estimated egg to age-1 survival rates are plotted in Figure 3.27. Survival was lower for the 2021 spawning cohort, at 1% (95% CI 1-2) than the previous two spawn years which were at ~3%. Egg to age-1 survival was highest for the 2019 spawning cohort at 4% (95% CI 2-10; Figure 3.27), after the population decline when egg densities were very low (Thorley et al 2023a). Survival trends show a density dependent relationship, with high survival rates in years of low egg deposition, and lower survival in years of high egg deposition.

3.7.5 Summary

The FRO LAEMP aims to provide an integrated understanding of WCT health and population in the study area using relevant fish and fish habitat data collected under multiple programs. With respect to fish habitat, Henretta Lake has been identified as providing important overwintering habitat for WCT in the upper Fording River watershed (Cope et al. 2016), as well as habitat for resident WCT (Penman et al. 2022). While anoxic conditions were present in January, February and March under the ice in Henretta Lake at the lowest depths (i.e., below 5.5 m) and additional information on water quality under ice is required to assess overwintering habitat for WCT, there were high volumes of suitable oxygenated habitat for resident WCT during the open-water season. Instream drying has been observed since surveys began in the Fording River (2017 and 2019 in the southern and northern survey areas, respectively) and Henretta Creek (2020) upstream of the FRO mine boundary. Annual monitoring of seasonal drying identified year-to-year variability on timing of drying that may, at times, limit WCT movement, but once low flows are established in early winter, dry sections only expand spatially with no new dry areas appearing. Overall, based on muscle selenium concentrations, meristic, and anomaly data from adult fish collected under the RAEMP, as well as information



collected from chronic toxicity testing, WCT in the FRO LAEMP study area, including Henretta Lake, appears to be in good health. Population monitoring has indicated a continued increase in the subadult and adult population in the upper Fording River in 2022, now up to ~2,300 fish from ~330 in 2019. The estimated number of eggs deposited by WCT has increased steadily since 2019 (inferred from adult abundance and size). The 2022 age-1 abundance was similar to the previous two years, while the number of fish in the 100 to 200 mm range (age-1 and age-2+) increased between 2021 and 2022, which may lead to continued increases in adult abundance. A decline in estimated egg to age-1 survival for the 2021 cohort relative to 2019 and 2020 suggests there may be a density-dependent response as the population approaches its carrying capacity. The decrease in the estimated number of nests in 2022 compared to 2021 is likely associated with cold early season water temperatures. A more detailed presentation and discussion of the 2022 upper Fording River Population monitoring program are provided in Thorley et al. (2023b). Overall, monitoring in the FRO LAEMP study area will continue to provide information to evaluate WCT health and populations in the upper Fording River.



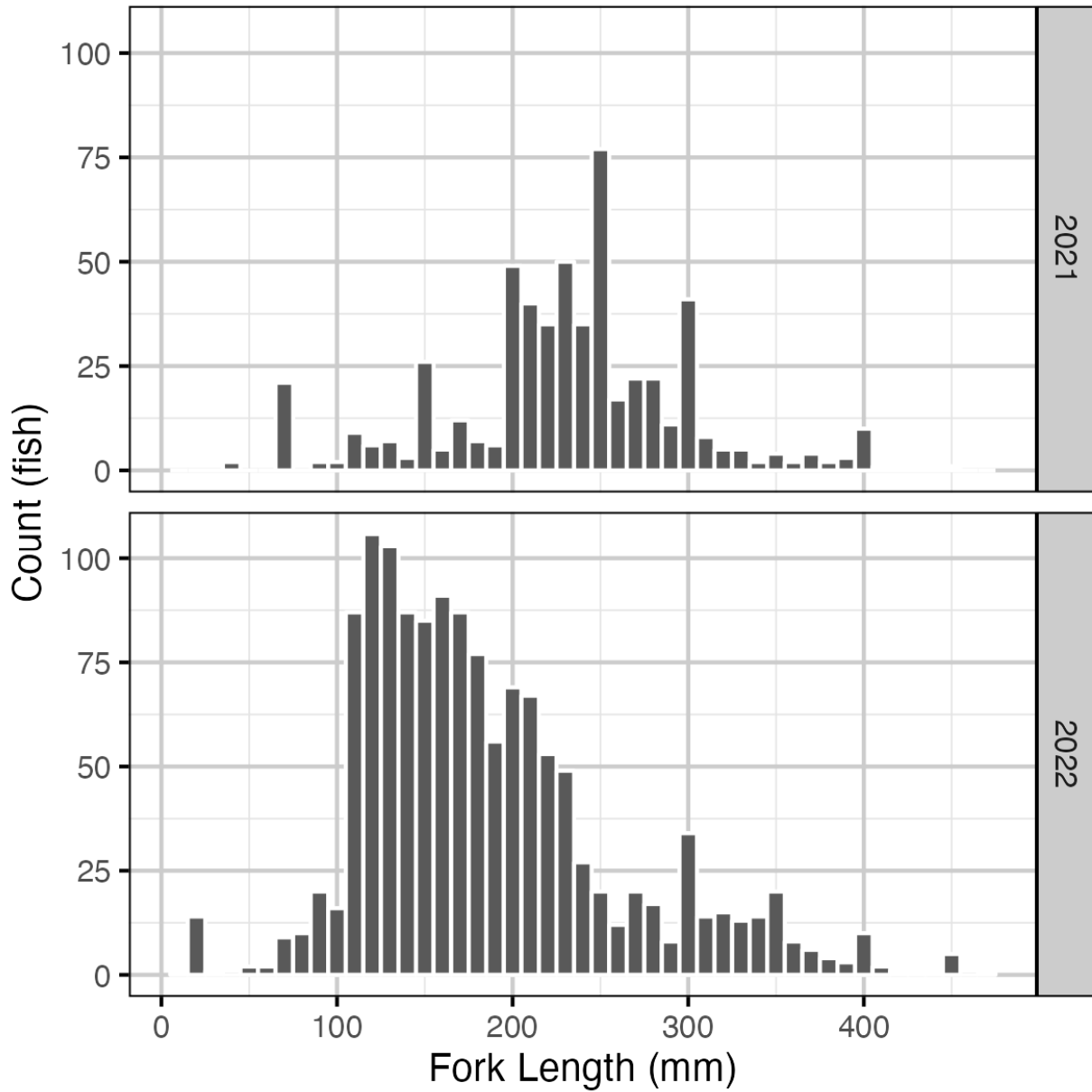


Figure 3.26: Fork Length Distribution for Fish Counted in the UFR in 2021 and 2022

Source: Thorley et al. 2023a.

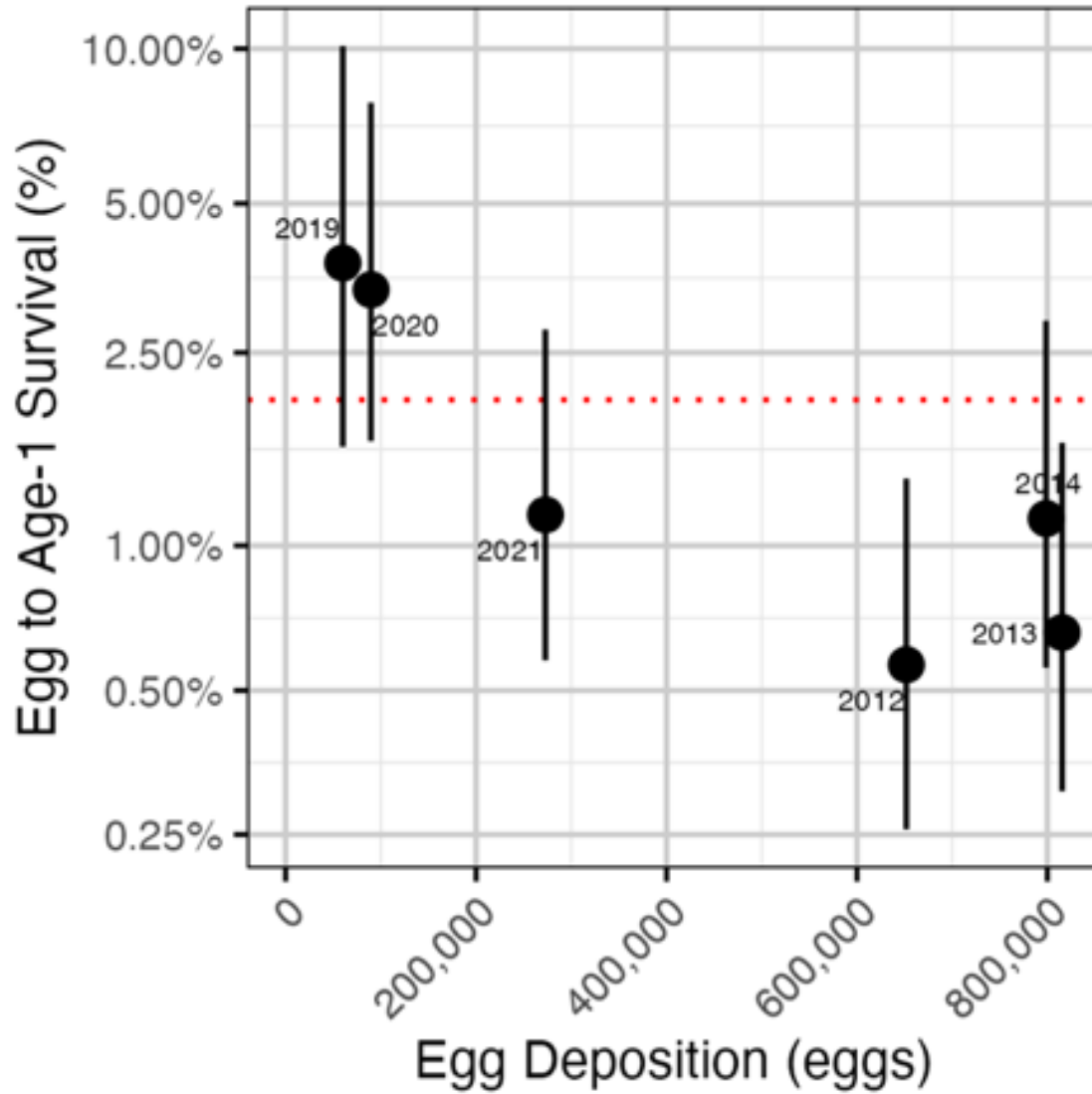


Figure 3.27: The Egg to Age-1 Survival (on a Logistic Scale) by Egg Density and Spawn Year

Note: The dashed red line indicates the egg-to-fry survival required for replacement based on Ma and Thompson (2021). Error bars represent 95% CIs.

Source: Thorley et al 2023a.

4 INTEGRATED SUMMARY AND CONCLUSIONS

The FRO LAEMP report outlines current biological conditions within the study area in relation to the study questions and also from a Management Unit perspective in the upper Fording River. The following findings are of importance when considering the FRO LAEMP study area and the upper Fording River in general, as a whole:

- The temporally consistent spatial shift in BIC structure from upstream to downstream;
- Changes in measurement endpoints (used to support evaluation and interpretation of each assessment endpoint) following the commissioning of the FRO-S AWTF; and,
- The status of WCT health and population in the upper Fording River.

A key finding of the FRO LAEMP is the distinct shift in the spatial (i.e., upstream to downstream) pattern of BIC structure that was first identified in 2015 (relative to 2012) and has since persisted (Minnow 2018, 2017; Minnow and Lotic 2018, 2019b, 2020b, 2021b, 2022). Root-cause investigations since 2015 have failed to identify one individual causal factor. Instead, the weight-of-evidence approach suggests the temporal shift in BIC structure is largely driven by distinct changes in habitat from upstream to downstream, and may be related to elevated concentrations of mine-related constituents, namely nitrate and nickel, that are periodically greater than effects concentrations in some areas (i.e., during low flow periods).

The shift in BIC structure was primarily characterized by a decrease in the relative abundance of Ephemeroptera (mayflies) from upstream to downstream, which was partially attributed to a decrease in the abundance of Heptageniidae and Ephemerellidae. Members of these Ephemeroptera families are clingers that prefer fast-flowing waters (USGS 2016) and are sensitive to anthropogenic stressors including metals (Clements et al. 2000; Clements 2004; Pond et al. 2008; Cormier et al. 2013) and nitrate (Beketov 2004). The shift in community structure, however, also corresponded with increases in the abundance of other taxa, which exacerbated the observed difference in % Ephemeroptera throughout the study area more so than when abundance was taken into consideration. A notable increase in the abundance of individuals from the Family Psychodidae (Order Diptera) was observed in 2022 compared to previous years within the upper and middle study areas, leading to lower % Ephemeroptera and % EPT in those areas. Although no direct causal pathway to explain the increase in Psychodidae was identified, Psychodids are highly tolerant of anthropogenic contaminants based on the Hilsenhoff Biotic Index (HBI; Hilsenhoff 1987) which may allow them to thrive in areas where other organisms may not. When considering the changes in community composition throughout the study area, the lower study area (downstream of the Greenhouse side channel confluence) has distinctly different habitat relative to the upper and middle study areas, which may be further contributing



to the observed variations in BIC. The lower study area is characterized by lower gradients associated with the Chauncey Creek alluvial fan (e.g., slower flow, deeper water, smaller substrate; Ecofish 2022), groundwater influences (SNC Lavalin 2021) leading to smaller seasonal fluctuations (i.e., warmer winter and cooler summer) in water temperatures compared to other areas, and an increase in allochthonous food sources such as leaves, woody debris, and particulate organic matter (Cummins 2019). These habitat features likely contribute to the higher absolute abundance and relative abundance of Plecoptera (stoneflies) observed in this area compared to upstream. Despite the changes in BIC structure identified above, total abundance and abundance of key BIC endpoints remain high throughout the study area, resulting in no limitations of food available to fish.

The 2022 FRO LAEMP report covered the first year of monitoring post-commissioning of the FRO-S AWTF and included a thorough evaluation of measurement endpoints downstream of treatment compared to both upstream and pre-commissioning conditions. Changes in the concentrations of several water quality constituents were identified downstream of treatment, namely nutrients (total phosphorus and orthophosphate), selenium (total and dissolved; organoselenium species), and nitrate. Total phosphorus and orthophosphate concentrations increased with treatment immediately downstream of the outfall and were associated with a concurrent increase in benthic invertebrate density and biomass, indicating an increase in secondary productivity, although no change in primary production (periphyton coverage) was detected. Despite a spatially limited (only within a few hundred meters of the FRO-S AWTF outfall) increase in secondary productivity immediately downstream compared to pre-commissioning, the overall biomass and density was within the range observed across the full study area, and returned to pre-commissioning conditions with distance further downstream, indicating that the change was unlikely to be ecologically meaningful on a regional scale. Following the commissioning of the FRO-S AWTF, concentrations of total and dissolved selenium decreased at most monitoring areas downstream of the outfall location within the FRO LAEMP study area; however, bioavailable selenium (e.g., methylseleninic acid) concentrations increased directly downstream of the outfall and concentrations between the outfall and the Greenhouse Side Channel confluence were qualitatively higher than pre-commissioning and upstream concentrations. Overall, benthic invertebrate tissue selenium concentrations were unchanged relative to areas upstream of treatment and historical concentrations within each area and were consistent with expectations based on water quality. No changes in nitrate concentrations were detected immediately downstream of treatment but significant decreases in nitrate concentrations compared to pre-commissioning were observed in the lower study area. No changes in BIC structure could be directly attributed to FRO-S AWTF commissioning in 2022, but annual



monitoring of benthic invertebrate endpoints will provide information to understand any changes to the community that may be associated with continued water treatment.

The status of the WCT population in the upper Fording River has been under more routine evaluation since the population decline was identified in 2019 (Evaluation of Cause Team 2021). In addition to monitoring the population itself, key habitat features such as overwintering habitat (e.g., Henretta Lake) and seasonal drying have been identified in the context of population recovery under various ongoing programs. The need to evaluate and understand metrics of fish health historically captured under the RAEMP has also been highlighted as an important consideration when assessing WCT population. Overall, population monitoring has indicated that the abundance of sub-adult and adult WCT has been increasing since 2019. An increase in the number of fish in the 100 to 200 mm range (age-1 and age-2+) between 2021 and 2022, may lead to continued increases in adult abundance which would in turn result in increased egg deposition. Estimated egg to age-1 survival declined in 2022 presumably due to a density-dependent response as the population approaches its carrying capacity. The assessment of fish condition under the RAEMP suggests that fish in the upper Fording River are in good health and in 2022 body condition was better than the historic average. All but one fish sampled in 2022 under the RAEMP had tissue selenium concentrations that were below the benchmark for potential effects of selenium on reproduction (15.5 mg/kg dw; muscle equivalent based on egg EC₁₀; Nautilus and Interior Reforestation 2011) and selenium concentrations in fish tissue were consistent with expectations based on benthic invertebrate tissue selenium concentrations and aqueous selenium concentrations (bioaccumulation model and B-tool model). Furthermore, quarterly chronic toxicity testing conducted on rainbow trout and fathead minnow with water collected from within the FRO LAEMP study area in 2022 demonstrated no effects on fish reproduction, survival, or health endpoints. Overall, based on assessments of fish health endpoints reported in the LAEMP, there is little indication of a risk to WCT health within the FRO LAEMP study area.

The results from the FRO LAEMP were summarized (Tables 4.1 and 4.2) to support Teck's Adaptive Management Program (Teck 2018). The results from this study also supported the evaluation of biological triggers, which are intended to identify unexpected monitoring results that may lead to responses under the AMP response framework. Of the areas within the FRO LAEMP study area that were assessed for biological triggers, the monitoring area downstream of Henretta Creek in the Fording River (RG_FODHE) was the only one that had replicates (two of three) that did not reach biological triggers for % EPT (Table 4.3; Appendix K). Uncertainty remains around the cause of biological responses associated with the change in % EPT at the areas where biological triggers were reached. Therefore, the % EPT biological trigger, along with other BIC endpoints, will continue to be monitored as part of the 2023 FRO LAEMP and the RAEMP.



Table 4.1: Summary of Results, FRO LAEMP, 2022

Evaluation	Assessment Endpoint	Indicator Type	Measurement Endpoint	Evaluation Criteria	Results	Conclusion
1. Are nitrate concentrations in the study area changing and do they have the potential for adverse effects on biota?	Benthic invertebrate abundance and assemblage	Direct	Benthic invertebrate community (BIC) endpoints	Benthic invertebrate community relative to nitrate concentrations in the upper Fording River	Nitrate concentrations correlated strongly and negatively with Ephemeroptera endpoints and positively with Plecoptera endpoints; however, other mine-related constituents were also correlated along with several habitat variables (e.g., substrate size, water temperature). Covariation among water chemistry, including nitrate concentrations, and habitat meant the contribution of nitrate could not be separated. Lower nitrate concentrations from FRO-S AWTF commissioning were not related to a direct change in BIC.	Nitrate concentrations have increased over time in parts of the FRO LAEMP study area, and were higher than UECs in most areas where %Ephemeroptera was below normal ranges; however, other mine-related constituents were also elevated in these areas in addition to simultaneous changes in habitat, thus confounding the contributions and a direct causal link from nitrate. Covariation among water quality and habitat variables makes contributions from nitrate alone difficult to determine, and while nitrate likely contributes to BIC variation, it cannot be considered the sole cause of effects to BIC endpoints.
		Semi-indirect	Chronic Toxicity Testing	<i>Ceriodaphnia dubia</i> , <i>Hyalella azteca</i> , <i>Oncorhynchus mykiss</i> , and <i>Pimephales promelas</i> relative to water samples at FR_FRCP1 and the Compliance Point (FR_FRABCH).	Recent chronic toxicity studies have not identified nitrate as a potential causative factor in any observed adverse effects at FR_FRCP1 or FR_FRABCH. Previous (2015 to 2020) studies have identified multiple constituents (nitrate, sulphate, TDS, and/or nickel) as simultaneously contributing to possible or likely effects to flea reproduction and amphipod dry weight in water collected during low flow periods.	
		Indirect	Surface water nitrate concentrations	Evaluate changes to nitrate concentrations and concentrations relative to updated effects concentrations (UECs)	Nitrate concentrations have gradually increased throughout the FRO LAEMP study area since 2012 but concentrations were below UECs, except for a portion of samples in the lower section of the upper study area, throughout the middle study area, and in some areas in the lower study area during low flow seasons. Commissioning of the FRO-S AWTF reduced nitrate concentrations in monitoring areas throughout the lower study area.	
2. Is water treatment affecting biological productivity downstream in the Fording River?	Benthic invertebrate biomass and density	Direct	Benthic invertebrate biomass and density	Evaluate benthic invertebrate biomass and density downstream of treatment relative to pre-commissioning and relative to RG_FOBKS upstream of the outfall.	Benthic invertebrate biomass and density increased at the area (RG_SCOUTDS) immediately downstream of the FRO-S AWTF outfall relative to pre-commissioning and relative to RG_FOBKS, and biomass (not density) increased slightly at the Compliance Point RG_FO22.	An increase in aqueous phosphorus concentrations and benthic invertebrate productivity was identified post-commissioning of the FRO-S AWTF, however, productivity increases were localized to the area (RG_SCOUTDS) immediately downstream of the outfall location.
		Semi-indirect	Visual Periphyton Assessments	Evaluate any changes in periphyton CABIN (visual) scores	Periphyton (CABIN) scores did not change relative to areas upstream or previous years.	
		Indirect	Surface water total phosphorus and orthophosphate concentrations	Evaluate total phosphorus and orthophosphate concentrations downstream of treatment relative to pre-commissioning and relative to RG_FOBKS upstream of the outfall	Total phosphorus and orthophosphate concentrations increased from RG_SCOUTDS to RG_FOBCP relative to pre-commissioning and relative to RG_FOBKS upstream of the outfall but these increases did not occur further downstream past the Greenhouse Side Channel confluence.	

Note: NR = Normal Range. BIC = Benthic Invertebrate Community. CA = Correspondence Analysis. CI = Calcite Index. EPT = Ephemeroptera,-Plecoptera-Trichoptera. EVWQP = Elk Valley Water Quality Plan. FRO = Fording River Operations. LPL = Lowest Practical Level. PCA = Principal Component Analysis. TDS = Total Dissolved Solids. CCA = canonical correspondence analysis. WCT = Westslope Cutthroat Trout.

Table 4.1: Summary of Results, FRO LAEMP, 2022

Evaluation	Assessment Endpoint	Indicator Type	Measurement Endpoint	Evaluation Criteria	Results	Conclusion
3. Are benthic invertebrate tissue selenium concentrations downstream of FRO water treatment consistent with predictions, and if not, why?	Benthic invertebrate tissue selenium concentrations	Direct	Benthic invertebrate tissue selenium concentrations	Benthic Invertebrate tissue selenium concentrations relative to EVWQP benchmarks, selenium bioaccumulation mode, and Bioaccumulation Tool (B-tool) predictions	Benthic invertebrate tissue selenium concentrations did not change downstream of water treatment despite changes in aqueous selenium concentrations. In 2022, tissue selenium concentrations were below EVWQP benchmarks in 94% of samples and many that were above benchmarks contained annelids. Except for samples containing annelids, tissue selenium concentrations were consistent with predictions based on the aqueous total selenium (i.e., the selenium bioaccumulation model) and aqueous reduced selenium (i.e., B-tool) concentrations.	Total and dissolved selenium concentrations have decreased at most monitoring areas downstream of the FRO-S AWTF outfall compared to pre-commissioning and the area (RG_FOBKS) immediately upstream, but there has been a qualitative increase in organoselenium concentrations at some areas immediately downstream. Despite this, benthic invertebrate tissue selenium concentrations have remain unchanged at all areas downstream of treatment and concentrations have been consistent with predictions based on aqueous selenium concentrations throughout the study area
		Indirect	Aqueous total and reduced selenium concentrations	Evaluate aqueous total and selenium concentrations relative to benthic invertebrate tissue selenium concentrations	Total and dissolved selenium concentrations decreased at most areas downstream of the FRO-S AWTF outfall relative to immediately upstream at RG_FOBKS, but qualitative observation of the data identified notable increases of organoselenium concentrations in areas between the outfall and Greenhouse Side Channel confluence. When considering the full study area, total selenium and selenite concentrations were higher at areas downstream of the Lake Mountain Creek influence (RG_FODNGD) and downstream of the FRO-S AWTF outfall (RG_SCOUTDS), and while total selenium was higher downstream of the Greenhouse Side Channel confluence (RG_FRUPO), selenite was lower.	
4. How is temperature changing over time in the FRO LAEMP study area? 4a. Is water temperature measurably different (greater than 1 degree Celsius) downstream of the AWTF and/or SRF effluent discharge relative to the upstream baseline condition? 4b. If changes in water temperature are observed, are these changes attributed to mitigations (i.e., AWTF and/or SRF)?	Water Temperature	Direct	Water temperature	Evaluate changes in water temperature throughout the study area and assess whether water temperature was greater than 1°C different downstream compared upstream of the FRO-S AWTF outfall	Water temperatures have remained stable throughout most of the FRO LAEMP study area, except for three stations in the middle study area where small but statistically significant increases in temperature have been observed since 2017. Water temperatures downstream of treatment compared to upstream only exceeded the 1°C threshold for three days post-commissioning.	With few exceptions, water temperatures have remained stable throughout the FRO LAEMP study area since 2017. Minor differences in water temperature were observed when comparing the areas immediately downstream (RG_SCOUTDS) and upstream (RG_FOBKS) of treatment pre- and post-commissioning, but they rarely exceeded the 1°C threshold indicating minimal influence of FRO-S AWTF operation on water temperatures in the receiving environment.

Note: NR = Normal Range. BIC = Benthic Invertebrate Community. CA = Correspondence Analysis. CI = Calcite Index. EPT = Ephemeroptera,-Plecoptera-Trichoptera. EVWQP = Elk Valley Water Quality Plan. FRO = Fording River Operations. LPL = Lowest Practical Level. PCA = Principal Component Analysis. TDS = Total Dissolved Solids. CCA = canonical correspondence analysis. WCT = Westslope Cutthroat Trout.

Table 4.1: Summary of Results, FRO LAEMP, 2022

Evaluation	Assessment Endpoint	Indicator Type	Measurement Endpoint	Evaluation Criteria	Results	Conclusion
5. What are the factors contributing to the variations in benthic invertebrate communities in the FRO LAEMP study area?	Benthic invertebrate abundance and assemblage	Direct	Benthic invertebrate community endpoints (abundance, richness [LPL taxonomy], percent [%] and total abundance of Ephemeroptera-Plecoptera-Trichoptera [EPT], Ephemeroptera, Plecoptera, Trichoptera, and Chironomidae, total abundance of key Ephemeroptera families [Baetidae, Heptageniidae, Ephemerellidae])	Spatial and temporal comparisons to site-specific and regional normal ranges and evaluations over time; evaluation of BIC endpoint changes downstream of treatment post-commissioning of the FRO-S AWTF	Most BIC endpoints assessed, including all abundance endpoints, were within site-specific and/or regional normal ranges and have not changed significantly over time. Percent EPT was below site-specific normal ranges from RG_FOUNGD to RG_FOU EW and below the regional normal range from RG_FOUSH and RG_FOBSC (except RG_FOBKS), while % Ephemeroptera was below the site-specific normal range from RG_FOUSH to RG_FOU EW and below the regional normal range from RG_FRCP1SW to RG_FOU EW. Both %EPT and % Ephemeroptera decreased in sections of the upper and middle study area compared to previous years. Consistent with previous years, % Plecoptera was near or above the upper limit of the normal range from RG_FRCP1SW to RG_FOU EW but was lower than previous years at some areas in the upper and middle study areas. There were few significant and meaningful changes in BIC endpoints downstream of water treatment post-commissioning of the FRO-S AWTF.	Monitoring has continued to show spatial gradients in key relative abundance endpoints (% EPT, % Ephemeroptera, and % Plecoptera) from upstream to downstream within the FRO LAEMP study area but while a similar spatial pattern in Ephemeroptera abundance and relative abundance was observed, all abundance endpoints were within their respective reference normal ranges and have remained stable. Changes in the relative abundance of EPT taxa often corresponded with shifts in the abundance of other non-EPT taxa and, together with consistently high abundance in all key taxa, including EPT, represent no limitation of food available to fish throughout the study area. Consistent with previous years, spatial changes in key relative abundance endpoints occurred simultaneous with changes in concentrations of mine-related constituents, including those that exceeded effects levels during low flows, and variations of habitat, including substrate size, water temperature, water depth, and calcite. Both water quality stressors and habitat variables affected BIC variation, particularly through the full study area and the middle study area, but the effect from individual predictors was difficult to separate. Most habitat variables influenced BIC variation throughout the full study area, however, substrate size and water temperature had a particularly strong effect on BIC variation in the lower study area where very high % Plecoptera and low % Ephemeroptera continue to be observed. Although some nutrient and mine-related constituent concentrations have changed in relation to water treatment, these changes did not cause any notable changes in BIC structure.
	Benthic invertebrate abundance and assemblage	Indirect	Surface water chemistry	Concentrations of mine-related constituents relative to EVWQP effect benchmarks, UECs, proposed benchmarks, screening values, and past observations; evaluation of water quality changes in relation to FRO-S AWTF commissioning	Decreases in nitrate, selenium, and to some extent dissolved nickel concentrations, and increases in total phosphorus, orthophosphate, nitrite, and total molybdenum were observed downstream of the FRO-S AWTF post-commissioning. In the upper study area, concentrations of most mine-related constituents, including Order constituents, rarely exceeded their respective UECs, proposed benchmarks, or screening values, except for nitrate which was above the Level 1 UEC from RG_FODNGD to RG_FOUSH and dissolved nickel which exceeded the Level 2 proposed benchmark from RG_FOUNGD to RG_FOUSH. The middle study area had the most exceedances as the Level 2 proposed benchmark for dissolved nickel, Level 1 screening value for TDS, multiple levels of UECs for nitrate, and Level 1 UECs for sulphate were exceeded at most areas and during the low flow season. The lower study area had fewer exceedances than the middle study area but exceedances included Level 1 screening value for TDS from RG_FRUPO to RG_FO22, Level 1 UECs for nitrate at RG_FRUPO and Level 3 UECs at RG_FO22, and the proposed benchmark at RG_FODPO.	
				Water Temperature	Continuous Monitoring of temperature and discharge at FR_UFR1, FR_FR1, FR_FOUCL, FR_FRDSSC1, FR_FR2, FR_FR3, FR_SCOUTDS, FR_FR4, FR_FRCP1, FR_FRCP1SW, FR_FRRD, GH_PC2, FR_FRABCH evaluated over time and in integrated analyses	

Note: NR = Normal Range. BIC = Benthic Invertebrate Community. CA = Correspondence Analysis. CI = Calcite Index. EPT = Ephemeroptera,-Plecoptera-Trichoptera. EVWQP = Elk Valley Water Quality Plan. FRO = Fording River Operations. LPL = Lowest Practical Level. PCA = Principal Component Analysis. TDS = Total Dissolved Solids. CCA = canonical correspondence analysis. WCT = Westslope Cutthroat Trout.

Table 4.1: Summary of Results, FRO LAEMP, 2022

Evaluation	Assessment Endpoint	Indicator Type	Measurement Endpoint	Evaluation Criteria	Results	Conclusion
<p>5. What are the factors contributing to the variations in benthic invertebrate communities in the FRO LAEMP study area?</p>	<p>Benthic invertebrate abundance and assemblage</p>	<p>Indirect</p>	<p>Calcite</p>	<p>Calcite index relative to known or suspected effect levels and past observations</p>	<p>Calcite indices increased from upstream to downstream in the FRO LAEMP study area but was generally similar to or lower than the previous year and below 1.0 at each area.</p>	
			<p>Correlations between physical and chemical factors, and BIC metrics</p>	<p>Physical: CI, calcite presence, concretion Score, embeddedness, pebble size (D16 and D84), water velocity, water depth, minimum winter temperature, maximum summer temperature, annual temperature; Chemical: PC1, PC2, individual constituents; BIC metrics: total abundance, richness, % Ephemeroptera, % Plecoptera, % Trichoptera, % EPT, and % Chironomidae, Abundance Ephemeroptera, Plecoptera, Trichoptera, EPT, and Chironomidae, Habitat Model Residuals for Abundance, Richness, % Ephemeroptera, % EPT, Ephemeroptera abundance, and EPT abundance, Feeding and Habitat Indices</p>	<p>Consistent with previous years, key BIC endpoints had strong, significant relationships with mine-related constituents, most notably negative correlations with % Ephemeroptera, Ephemeroptera abundance and, to a lesser extent % EPT, but positive correlations with % Plecoptera. Significant correlations with several habitat variables also occurred, including a positive correlation of substrate size and % Ephemeroptera but a negative correlation with % Plecoptera and Plecoptera abundance. Within individual study areas % Plecoptera and/or Plecoptera abundance correlated with calcite presence and index in the upper study area (positive), calcite concretion in the middle study area (positive), minimum winter water temperature in the middle and lower study area (negative and positive, respectively), and water depth in the lower study area (negative).</p>	
			<p>Canonical Correspondence Analysis</p>	<p>Habitat Variables: bankfull width, mean depth, mean velocity, substrate size D16, station gradient, watershed area, station gradient; Stressor Variables: calcite presence, calcite concretion, summer mean temperature, winter mean temperature, total nickel, nitrate, total selenium, sulphate, total dissolved solids, total uranium, dissolved cadmium</p>	<p>Habitat and water quality variables, along with calcite and water temperature, explained 37% of the BIC variation but 22-23% was shared by the predictor groups, making individual contributions difficult to separate. Except for calcite concretion, every habitat and water quality stressor was flagged as influencing BIC variation in the full study area which may be related to the large gradient in the data. The fewest number of habitat and water quality stressors affected BIC variation in the upper study area, while most habitat and water quality stressors affected BIC variation throughout the middle study area. In the lower study area, substrate size and summer and winter mean water temperatures were strongly associated with BIC variation, and these habitat variables are markedly different throughout this section of the Fording River. Notably, dissolved nickel and cadmium were not associated with BIC variation in the lower study area, despite significant contributions in the middle study area.</p>	

Note: NR = Normal Range. BIC = Benthic Invertebrate Community. CA = Correspondence Analysis. CI = Calcite Index. EPT = Ephemeroptera,-Plecoptera-Trichoptera. EVWQP = Elk Valley Water Quality Plan. FRO = Fording River Operations. LPL = Lowest Practical Level. PCA = Principal Component Analysis. TDS = Total Dissolved Solids. CCA = canonical correspondence analysis. WCT = Westslope Cutthroat Trout.

Table 4.1: Summary of Results, FRO LAEMP, 2022

Evaluation	Assessment Endpoint	Indicator Type	Measurement Endpoint	Evaluation Criteria	Results	Conclusion
6. What are the factors influencing fish health and population in the upper Fording River?	WCT health and population	Direct	WCT population	WCT population monitoring within the study area, including redd surveys, length at age-0, body condition, abundance, egg to age-1 survival (Thorley 2023)	Population monitoring has indicated a continued increase in the subadult and adult population in the upper Fording River in 2022, now up to ~2,300 fish from ~330 in 2019. The estimated number of eggs deposited by WCT has increased steadily since 2019 (inferred from adult abundance and size). The 2022 age-1 abundance was similar to the previous two years, while the number of fish in the 100 to 200 mm range (age-1 and age-2+) increased between 2021 and 2022, which may lead to continued increases in adult abundance. A decline in estimated egg to age-1 survival for the 2021 cohort relative to 2019 and 2020 suggests there may be a density-dependent response as the population approaches its carrying capacity. The decrease in the estimated number of nests in 2022 compared to 2021 is likely associated with cold early season water temperatures. A more detailed presentation and discussion of the 2022 upper Fording River Population monitoring program are provided in Thorley et al. (2023).	Westslope Cutthroat Trout captured within the study area under the RAEMP were considered to be in good health, indicated by low observations of external anomalies and condition factor similar or higher than that of reference areas. Monitoring under the Population Monitoring Program indicated that the WCT population is recovering since the steep population decline of 2019, and overall, the abundance of sub-adult and adult WCT has been increasing since the decline.
		Indirect	Chronic Toxicity Testing	<i>Oncorhynchus mykiss</i> and <i>Pimephales promelas</i> relative to water samples at FR_FRCP1 and the Compliance Point (FR_FRABCH).	No adverse effect to rainbow trout (<i>O. mykiss</i>) or fathead minnow (<i>P. promelas</i>) reproduction, survival, or health endpoints were observed from water collected within the FRO LAEMP study area in 2022, indicating that concentrations of mine-related constituents were unlikely to cause toxicity to fish.	
		Indirect	WCT Critical Habitat (Henretta Lake)	Evaluate WCT habitat quantity and quality using <i>in situ</i> measures (temperature, oxygen, conductivity) and supporting water chemistry data	For most of the 2022 monitoring period, high concentrations of dissolved oxygen (above the 8 mg/L chronic BC WQGL) suggest that Henretta Lake contains high volumes of oxygenated habitat (suitable for resident WCT) during the open-water period.	
		Indirect	Seasonal drying	Determination of timing and spatial extent of drying within the Fording River	Drying was first observed in the Fording River upstream of the Greenhouse Side Channel confluence in late September and downstream of the Clode Creek confluence in mid-October in 2022. The timing and location of drying in the FRO LAEMP study area in 2022 was similar to previous years and may represent a barrier to fish movement. Multiple years of monitoring have identified year-to-year variability on the timing of drying; however, once low flows were established in early winter dry sections expanded but no new dry areas were observed throughout the season.	
		Direct	WCT anomalies	Observation of external anomalies on WCT captured for muscle tissue sampling	Only one of thirteen fish captured in the study area in 2022 had anomalies.	
		Indirect	WCT condition factor	Observation of overall fitness in WCT caught for muscle tissue sampling	WCT condition at mine-exposed areas was similar or higher than those caught at reference areas in 2018 and 2022.	
		Indirect	WCT tissue selenium concentrations	Muscle selenium concentrations of WCT caught at mine-exposed areas within the upper Fording River	Muscle selenium concentrations in all but one WCT sampled in 2022 under the RAEMP were below the site-specific effects benchmark	

Note: NR = Normal Range. BIC = Benthic Invertebrate Community. CA = Correspondence Analysis. CI = Calcite Index. EPT = Ephemeroptera,-Plecoptera-Trichoptera. EVWQP = Elk Valley Water Quality Plan. FRO = Fording River Operations. LPL = Lowest Practical Level. PCA = Principal Component Analysis. TDS = Total Dissolved Solids. CCA = canonical correspondence analysis. WCT = Westslope Cutthroat Trout.

Table 4.2: Summary of Findings, Responses and Adjustments Related to the FRO LAEMP in 2022

Program Name	Study Question(s)	Data Evaluation Process	Outcome(s)	Responses & Adjustments in 2022	EMC Engagement
FRO LAEMP	1. Are nitrate concentrations in the study area changing and do they have the potential for adverse effects on biota?	Determine if benthic invertebrate community endpoints are outside of site specific and regional normal ranges or moving away from normal ranges in accordance with observed nitrate concentrations.	Nitrate concentrations have increased over time throughout most of the FRO LAEMP study area, and were higher than updated effects concentrations (UECs) in most areas where % Ephemeroptera was below normal ranges; however, simultaneous changes in other mine-related constituents and habitat variables make the contribution of nitrate to BIC variation difficult to determine. Nitrate concentrations likely contribute to observed BIC variation but is not the only factor.	There were no responses and adjustments in 2022	<ul style="list-style-type: none"> - Draft data package of 2017 results submitted to EMC Feb 15, 2018; Additional results for early 2018 presented May 3 and submitted October 23, 2018 - Report of 2017 results submitted to ENV/EMC May 31, 2018 - 2018 Study design submitted to ENV/EMC May 31, 2018 - In-person meetings on Feb 22 and May 2; and conference call on March 27, 2018 - Written input from EMC received between June 1 and July 18, 2018 - Draft data package of additional 2018 results submitted to EMC March 22, 2019 and discussed at in-person meeting March February 22, 2019 - Report of 2018 results submitted to ENV/EMC May 31, 2019 - Second FRO LAEMP study design (2019-2020) submitted May 31, 2019 - Written input from 2018 FRO LAEMP report received July 2019 - Draft data package of 2019 FRO LAEMP report data submitted March 3, 2020 - Written input from 2019 FRO LAEMP data package received March 17, 2020 - Report of 2019 results submitted to ENV/EMC May 31, 2020 - Study design amendment letter for the 2019-2020 FRO LAEMP Study Design submitted to ENV/EMC June 1, 2020 - Conference call December 3, 2020 to discuss study question and study design updates for next FRO LAEMP cycle - Written input from EMC about study question and study design updates received December 17, 2020 - Conference call February 3, 2021 to discuss study question and study design updates for next FRO LAEMP cycle - Written input from EMC about study question and study design updates received February 18, 2021 - Conference call February 23, 2021 to discuss study question and study design updates for next FRO LAEMP cycle - Third FRO LAEMP study design (2021-2023) submitted April 1, 2021 - Draft data package data package of 2020 FRO LAEMP report data submitted April 8, 2021 - Written input from 2020 FRO LAEMP data package received April 22, 2021 - Report of 2020 results submitted to ENV/EMC May 31, 2021
		Determine if benthic invertebrate community results correspond with expectations based on nitrate concentrations in water relative to the updated effects concentrations for nitrate.			
	2. Is water treatment affecting biological productivity downstream in the Fording River?	Evaluate aqueous phosphorus concentrations downstream of the FRO-S AWTF outfall relative to pre-commissioning concentrations and relative to the area (RG_FOBKS) immediately upstream of the outfall.	Total phosphorus and orthophosphate concentrations increased between the FRO-S AWTF outfall and the Greenhouse Side Channel confluence relative to pre-commissioning concentrations and RG_FOBKS (upstream), while benthic invertebrate biomass and density increased at the area immediately downstream from the FRO-S AWTF outfall (RG_SCOUTDS).	There were no responses and adjustments in 2022	
		Evaluate benthic invertebrate biomass and density downstream of the FRO-S AWTF outfall relative to pre-commissioning concentrations and relative to the area (RG_FOBKS) immediately upstream of the outfall.			

Notes: ATWF = Active Water Treatment Facility; LAEMP = Local Aquatic Effects Monitoring Program; EMC = Environmental Monitoring Committee; ENV = Ministry of Environment and Climate Change Strategy; FRO = Fording River Operation; EVWQP = Elk Valley Water Quality Plan; BIC = Benthic Invertebrate Community; CCA = Canonical Correspondence Analysis; EPT = Ephemeroptera-Plecoptera-Trichoptera; WCT = Westslope Cutthroat Trout

Table 4.2: Summary of Findings, Responses and Adjustments Related to the FRO LAEMP in 2022

Program Name	Study Question(s)	Data Evaluation Process	Outcome(s)	Responses & Adjustments in 2022	EMC Engagement
FRO LAEMP	3. Are benthic invertebrate tissue selenium concentrations downstream of FRO water treatment consistent with predictions, and if not, why?	Evaluate benthic invertebrate tissue selenium concentrations relative to selenium bioaccumulation model and the selenium bioaccumulation tool (B-tool).	Benthic invertebrate tissue selenium concentrations were consistent with predictions except for samples that contained annelids and one sample taken in the Greenhouse Side Channel in January which could not be explained by sample composition or selenium speciation.	There were no responses and adjustments in 2022	<p>-Draft data package of 2021 FRO LAEMP report data submitted April 6, 2022</p> <p>-Follow up call to discuss FRO LAEMP data package April 12, 2022</p> <p>-Written input from 2021 FRO LAEMP data package received April 20, 2022</p> <p>-Report of 2021 results submitted to ENV/EMC May 31, 2022</p> <p>-Draft data package of 2022 FRO LAEMP report submitted April 5, 2023</p> <p>-Written input from 2022 FRO LAEMP data package received April 19, 2023 (except for from KNC)-</p>
	4. How is temperature changing over time in the FRO LAEMP study area? 4a. Is water temperature measurably different (greater than 1 degree Celsius) downstream of the AWTF and/or SRF effluent discharge relative to the upstream baseline condition? 4b. If changes in water temperature are observed, are these changes attributed to mitigations (i.e., AWTF and/or SRF)?	Evaluate changes in water temperature throughout the study area and temperature differences at the area (RG_SCOUTDS) downstream compared to the area (RG_FOBKS) immediately upstream of the FRO-S AWTF outfall.	Water temperatures have increased slightly at a few stations in the middle part of the FRO LAEMP study areas and although there have been demonstrated water temperature differences downstream compared to upstream relative to pre-commissioning, there were very few exceedances of the 1°C threshold.	There were no responses and adjustments in 2022	
	5. What are the factors contributing to the variations in benthic invertebrate communities in the FRO LAEMP study area?	Determine if benthic invertebrate community endpoints, particularly Ephemeroptera and associated families, are outside of site-specific and regional normal ranges or moving away from the normal ranges.	Consistent with previous years, %EPT, %Ephemeroptera, and %Plecoptera changed significantly from upstream to downstream within the FRO LAEMP study area in 2022, and these changes occurred simultaneous with changes in correlations of mine-related constituents, including those that exceeded established effects concentrations and variations of habitat. Both water quality stressors and habitat variables affected BIC variation, particularly through the full study area and the middle study area, but the effect of individual predictors was difficult to separate.	There were no responses and adjustments in 2022	
		Investigate connection between benthic invertebrate community variation and water chemistry and habitat within the study area.		Polyaromatic hydrocarbon (PAH) and, to a lesser extent, selenium concentrations were significantly higher at the area (RG_SCOUTDS) immediately downstream of the FRO-S AWTF outfall in September 2022 so confirmatory sampling was conducted in February 2023 to verify anomalous results. Samples collected in February had PAH and selenium concentrations that were consistent with previous years so the adjustment that follows will be to evaluate the sediment collection methods in the updated study design next cycle.	

Notes: ATWF = Active Water Treatment Facility; LAEMP = Local Aquatic Effects Monitoring Program; EMC = Environmental Monitoring Committee; ENV = Ministry of Environment and Climate Change Strategy; FRO = Fording River Operation; EVWQP = Elk Valley Water Quality Plan; BIC = Benthic Invertebrate Community; CCA = Canonical Correspondence Analysis; EPT = Ephemeroptera-Plecoptera-Trichoptera; WCT = Westslope Cutthroat Trout

Table 4.2: Summary of Findings, Responses and Adjustments Related to the FRO LAEMP in 2022

Program Name	Study Question(s)	Data Evaluation Process	Outcome(s)	Responses & Adjustments in 2022	EMC Engagement
FRO LAEMP	6. What are the factors influencing fish health and population in the upper Fording River?	Evaluate WCT health through tissue selenium concentrations, observed external abnormalities and condition factor of fish caught.	Westslope Cutthroat Trout captured within the study area under the RAEMP were considered to be in good health, indicated by low observations of external anomalies and condition factor similar or higher than that of reference areas. Monitoring under the Population Monitoring Program indicated that the WCT population is recovering since the steep population decline of 2019, and overall, the abundance of sub-adult and adult WCT has been increasing since the decline.	There were no responses and adjustments in 2022 under the FRO LAEMP. Responses and adjustments under other programs are reported therein.	-
		Determine potential limitations to overwintering habitat during fall migration as a result of seasonal drying.			
		WCT population monitoring within the study area, including redd surveys, length at age-0, body condition, abundance, egg to age-1 survival (Thorley 2023)			

Notes: ATWF = Active Water Treatment Facility; LAEMP = Local Aquatic Effects Monitoring Program; EMC = Environmental Monitoring Committee; ENV = Ministry of Environment and Climate Change Strategy; FRO = Fording River Operation; EVWQP = Elk Valley Water Quality Plan; BIC = Benthic Invertebrate Community; CCA = Canonical Correspondence Analysis; EPT = Ephemeroptera-Plecoptera-Trichoptera; WCT = Westslope Cutthroat Trout

Table 4.3: Summary of Biological Trigger Analysis for Percent EPT and Benthic Invertebrate Tissue Selenium Concentrations, FRO LAEMP, 2022

Waterbody	Area		% EPT ^a		Selenium BIT ^b	
			Number Replicates Evaluated	Number of Replicates Reaching Biological Trigger ^c	Number Replicates Evaluated	Number of Replicates Reaching Biological Trigger ^d
Fording River	RG_FO26	Reference	3	3	6	0
	RG_FODHE	Mine-exposed	3	1	6	0
	RG_FOUKI		3	3	30	0
	RG_FOBSC		3	3	35	0
	RG_FOBCP		5	5	15	0
	RG_FODPO		3	3	30	2 ^e
	RG_FO22		5	5	30	0

Notes: % EPT = Percent EPT (Ephemeroptera [mayflies], Plecoptera [stoneflies], and Trichoptera [caddisflies]); Selenium BIT = Selenium concentrations in benthic invertebrate tissue (mg/kg dw).

^a Biological Trigger analysis for %EPT was for the September sampling event.

^b Biological Trigger analysis for Selenium BIT was for the January, February, March, June, September, November, and December sampling events.

^c Number of Replicates Reaching Biological Trigger for % EPT refers to those replicates which were below both triggering steps (i.e., below the lower 2.5th percentile of the habitat-adjusted normal range and expectations [as based on predicted ADIT Scores]). See section K.2.2 for more details.

^d Number of Replicates Reaching Biological Trigger for Selenium BIT refers to those replicates which were above both triggering steps (i.e., above the upper 97.5th percentile prediction limit of the regional normal range and expectations [as based on the predicted 95% percentile from the water to benthic invertebrate selenium bioaccumulation model]). See section K.2.3 for more details.

^e Both samples that exceeded the biological trigger at RG_FODPO contained annelids which are known to accumulate selenium more readily than other taxa (Luoma 2021)

Other efforts are also currently underway (i.e., BIC predictive modeling) to resolve uncertainty around effects of mine-related stressors on BIC endpoints (further information regarding the response for these biological triggers can be found in Appendix K). Benthic invertebrate tissue selenium concentrations did not exceed the biological triggers, except for two of five replicates at the monitoring area (RG_FODPO) located downstream of Porter Creek, (Table 4.3; Appendix K). The two composite-taxa benthic invertebrate samples that exceeded biological triggers at RG_FODPO contained annelids, which are known to more readily accumulate selenium compared to other taxa (Luoma 2021). Overall, results of the biological trigger evaluation were consistent with the findings of the data evaluation conducted under the 2022 FRO LAEMP. Given that current biological triggers were sufficient to identify monitoring areas where biological responses are occurring, no additional biological triggers are recommended at this time.



5 UPDATES TO 2021 TO 2023 FRO LAEMP STUDY DESIGN

No changes to the 2021 to 2023 FRO LAEMP Study design are recommended for 2023.

Permit 107517 was amended in March 2021 to include the third cycle of FRO LAEMP monitoring, and Section 8.3.2 outlines the LAEMP requirements for any changes to the approved 2021 to 2023 study design as follows:

8.3.2: The permittee must complete to the satisfaction of the director a study design for a LAEMP which will focus on the upper Fording River for 2021 to 2023 by April 1, 2021. The study design must be reviewed by the EMC and be designed to an appropriate temporal scale to capture short term, local effects to the immediate receiving environment. Any changes to the approved study design must be reported in the annual LAEMP report.

Several adjustments to the approved FRO LAEMP 2021 to 2023 study design have previously been made (Minnow and Lotic 2022) based on learnings from the LAEMP, input from the EMC, and monitoring needs associated with post-commissioning of the FRO-S AWTF and the future commissioning of the FRO-N SRF:

1. Benthic invertebrate community sampling in June and December was discontinued in 2022 (Table 5.1); data has shown that the largest variations in BIC occur in September across the largest spatial extent. In addition, a large historical and reference dataset is available for September and thus provides the most information for evaluating FRO LAEMP study questions.
2. Benthic invertebrate community sampling was added at the monitoring area in the Fording River Side Channel #2 (RG_FRSch2) in September 2022 because this side channel is becoming an important flow path in this section of the Fording River (Table 5.1).
3. The FRO-N SRF commissioning sampling plan (Table 5.2) will be added to the study design for 2023 monitoring to help understand any potential changes to water and tissue chemistry as a result of commissioning, which is scheduled for Q2 2023 (Teck 2022).
4. Replicates of five benthic invertebrate tissue samples will be collected at areas associated with the FRO-N SRF commissioning sampling plan to provide additional pre- and post-commissioning data for greater statistical power (Tables 5.1 and 5.2).

The above updates to the 2021 to 2023 FRO LAEMP study design reflect agreements between the study team and the EMC during the April 6, 2022, and the April 5, 2023, EMC meeting and the subsequent advice table provided to the study team from the EMC.



Table 5.1: Summary of Proposed Sampling Plan for the FRO LAEMP, 2023

Biological Monitoring Area (Associated Teck Water Station) ^{dg}	Area Description	Biological Monitoring Area UTM Coordinates		Water Quality						Sediment Quality			Benthic Invertebrates											
				Water Chemistry			Selenium						Hess			Kick and Sweep			Composite-taxon Selenium					
				Eastings	Northing	June	Sept	Dec	June	Sept	Dec	June	Sept	Dec	June	Sept	Dec	June	Sept	Dec	June	Sept	Dec	June
Reference	RG_HENUP (FR_HC3)	Henretta Creek u/s all mine operations		655771	5567710	1	1	-	1	1	-	-	3	-	-	10	-	-	3	-	3	3	-	
	RG_FO26 ^{dg} (FR_UFR1)	Fording River u/s Henretta (u/s all mines)		653064	5569601	1	1	-	1	1	-	-	3	-	-	10	-	-	3	-	3	3	-	
	RG_UFR1 ^{ac} (FR_UFR1)	Fording River u/s Henretta at Teck WQ station		651376	5566758	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	5	5	5	
Mine-exposed	RG_FRSC2 ^{eh}	Fording River side channel 2 beginning d/s of FRCP1SW reconnecting u/s of FODPO		653549	5555700	1	1	1	1	1	1	-	-	-	-	-	-	-	3	-	5	5	5	
	RG_FRGHSC ^e	Greenhouse side channel connecting with Fording River d/s of FRUPO		653672	5556307	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	5	5	5	
	RG_FODHE (FR_FR1)	Fording River d/s Henretta Creek		651320	5565422	1	1	1	1	1	1	-	-	-	-	-	-	-	3	-	3	3	3	
	RG_FOUCL	Fording River u/s of Clode Creek		650787	5564445	1	1	1	1	1	1	-	-	-	-	10	-	-	3	-	5	5	5	
	RG_FOUNGD	Fording River u/s NGD		650870	5563476	1	1	1	1	1	1	-	-	-	-	10	-	-	3	-	5	5	5	
	RG_FODNGD	Fording River d/s Lake Mountain Creek/ North Greenhills Diversion		650972	5563162	1	1	1	1	1	1	-	-	-	-	-	-	-	-	3	-	5	5	5
	RG_MP1 (FR_MULTIPLE)	Fording River d/s Multiplate d/s Eagle Ponds		651143	5562400	1	1	1	1	1	1	-	-	-	-	-	-	-	-	3	-	5	5	5
	RG_FOUSH	Fording River u/s Shandley Creek		650876	5560957	1	1	1	1	1	1	-	-	-	-	-	-	-	-	3	-	3	3	3
	RG_FOUKI (FR_FR2)	Fording River u/s Kilmarnock Creek		651859	5559804	1	1	1	1	1	1	-	5	-	-	10	-	-	3	-	5	5	5	
	RG_FOBKS (FR_FR3)	Fording River between Kilmarnock Creek & Swift Creek		652074	5558652	1	1	1	1	1	1	-	5	-	-	10	-	-	3	-	5	5	5	
	RG_SCOUTDS (FR_SCOUTDS)	Fording River d/s of FRO AWTF-S outfall		652307	5558501	1	1	1	1	1	1	-	5	-	-	10	-	-	3	-	5	5	5	
	RG_FOBSC (FR_FR4)	Fording River d/s Swift Creek, u/s Cataract Creek		652407	5558109	1	1	1	1	1	1	-	-	-	-	10	-	-	3	-	5	5	5	
	RG_FOB ^f (FR_FRCP1)	Fording River between Cataract & Porter Creek (Compliance Point)		652920	5556982	1	1	1	1	1	1	-	5	-	-	10	-	-	5	-	5	5	5	
	RG_FRCP1SW	Fording River ~1150 m d/s of Compliance Point		653387	5556201	1	1	1	1	1	1	-	-	-	-	10	-	-	3	-	5	5	5	
	RG_FRUPO (FR_FRRD)	Fording River u/s of Porter Creek		653894	5555975	1	1	1	1	1	1	-	5	-	-	10	-	-	3	-	5	5	5	
RG_FODPO (GH_PC2)	Fording River d/s Porter Creek, u/s Chauncey Creek		653935	5555085	1	1	1	1	1	1	-	-	-	-	-	-	-	3	-	5	5	5		
RG_FO22 ^f (FR_FRABCH)	Fording River u/s Chauncey Creek		654841	5553523	1	1	1	1	1	1	-	5	-	-	10	-	-	5	-	5	5	5		
RG_FOU ^g (FR_FR5)	Fording River d/s Chauncey Creek, u/s Ewin Creek		656365	5551875	1	1	1	1	1	1	-	-	-	-	-	-	-	3	-	5	5	5		

Notes: '-' indicates sample that was not a part of the sampling design.

^a RG_UFR1 will be used as a reference area in winter months when there is no access to RG_FO26 or RG_HENUP.

^b n=5 for composite-taxon tissue samples in areas associated with the FRO AWTF-S Commissioning Sampling Plan and the FRO-N SRF Commissioning Sampling Plan.

^c The water quality monitoring station is the same for biological monitoring stations RG_FO26 and RG_UFR1.

^d Routine water quality monitoring stations associated with biological monitoring areas are outlined in brackets.

^e RG_FRSC2 and RG_FRGHSC will continue to be monitored for water and benthic invertebrate tissue chemistry for post-FRO AWTF-S commissioning monitoring.

^f Triplicate samples of periphyton for both ash free dry mass and chlorophyll-a analysis for RAEMP requirements.

^g Periphyton scores of n=5 will be taken at each biological monitoring area in September.

^h BIC monitoring added in 2022 and will continue to be monitored in 2023.

Table 5.2: FRO-N SRF Commissioning Sampling Plan, 2023

Biological Monitoring Area (Associated Teck Water Station) ^d		Area Description	Biological Monitoring Area UTM Coordinates		Sampling Design											
					Water Chemistry				Water Selenium Speciation				Composite-taxon Selenium			
					Easting	Northing	0 Weeks ^c	4 Weeks	12 Weeks	20 Weeks	0 Weeks ^c	4 Weeks	12 Weeks	20 Weeks	0 Weeks ^c	4 Weeks
Ref	RG_UFR1 ^a (FR_UFR1)	Fording River u/s Henretta at Teck WQ station	651376	5566758	1	1	1	1	1	1	1	1	5	5	5	5
Exposed	RG_CLODE (FR_CC1)	Clode Cr. near mouth	650871	5564287	1	1	1	1	1	1	1	1	5	5	5	5
	RG_WED ^b	Adjacent to Clode Pond	650853	5563996	1	1	1	1	1	1	1	1	5	5	5	5
	RG_GRASSY ^b	Grassy Creek u/s of Fording River confluence	650944	5563681	1	1	1	1	1	1	1	1	5	5	5	5
	RG_FOUCL (FR_FOUCL)	Fording River u/s of Clode Creek	650787	5564445	1	1	1	1	1	1	1	1	5	5	5	5
	RG_FRDSCC1 (FR_FRDSCC1)	Fording River d/s of Clode Creek	650855	5563915	1	1	1	1	1	1	1	1	5	5	5	5
	RG_FOUNGD	Fording River u/s of Lake Mountain Creek and d/s of Grassy Creek	650870	5563476	1	1	1	1	1	1	1	1	5	5	5	5
	RG_FODNGD (FR_FRABEC1)	Fording River d/s Lake Mountain Creek/ North Greenhills Diversion	650972	5563162	1	1	1	1	1	1	1	1	5	5	5	5
	RG_MP1 (FR_MULTIPLE)	Fording River d/s Multiplate d/s Eagle Ponds	651143	5562400	1	1	1	1	1	1	1	1	5	5	5	5

Notes: the FRO-N SRF primary outfall will be through Clode Creek, located downstream of RG_FOUCL and upstream of RG_FRDSCC1.

^a RG_UFR1 will be used as the reference location because of limited access to RG_FO26 or RG_HENUP during winter months.

^b Riffles within tributaries to Fording River may be frozen during winter months.

^c Week zero sampling will be conducted before FRO-N SRF commences water discharge from phase 2 operations.

^d Routine water quality monitoring stations associated with biological monitoring areas are outlined in brackets.

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APPENDIX A

**DATA QUALITY
REVIEW**

APPENDIX A DATA QUALITY REVIEW

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A1 INTRODUCTION

A1.1 Background

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

A1.2 Quality Control Samples

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



Table A.1: Laboratory Data Quality Objectives for the FRO LAEMP, 2022

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

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

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

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



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



A2 WATER CHEMISTRY

A2.1 Laboratory Reporting Limits

The analytical reports for water chemistry from ALS Environmental (ALS; see laboratory reports CG2207615, G2208450, CG2208562, CG2212410, CG2212555, CG2212630, CG2212662, CG2212823, CG2212860, CG2212981, CG2215634, CG2216906, and CG2217060 in Appendix M) and Brooks Applied Labs (BAL; see laboratory reports 2206336, 2207059, 2209287, 2209378, 2211135, and 2212301 in Appendix M) were examined to assess LRLs relative to analyte concentrations and applicable guidelines (Tables A.2 and A.3). The LRLs for water quality analytes were assessed relative to British Columbia Water Quality Guidelines (BCWQG; BCMOEECS 2021a,b) for the protection of freshwater aquatic life, Elk Valley Water Quality Plan (EVWQP; Teck 2014) benchmarks, Updated Effects Concentrations (UEC; WSP Golder 2022), screening values for water quality (Teck 2020), and relevant site-specific benchmarks. Several analytes were reported at concentrations below the LRL in 100% of samples (Tables A.2 and A.3). For those analytes with one or more result(s) below the LRL, achieved LRLs were consistently lower than the BCWQG, EVWQP benchmarks, UEC, and screening values for water quality (as applicable), except for total mercury. The LRL for all total mercury samples was 0.000005 µg/L, which is higher than the BCWQG of 0.00000125 µg/L; however, Azimuth (2019) determined that mercury inputs (total and methyl) in the Elk Valley Area are not related to mining activities. Therefore, the achieved LRLs were appropriate for this study.

A2.2 Laboratory and Field Blanks

A total of 243 method blank (MB) samples were analyzed in the ALS laboratory reports (Appendix M). Of the 1,352 reported method blank individual analyte results, only one result was above detection (for total vanadium; see laboratory report CG2212630 in Appendix M). However, this exceedance was below five-times the blank level and the laboratory reporting limit was appropriately adjusted for total vanadium results within this laboratory report. As only one result (0.07% of MB results) did not meet the laboratory DQO and these did not include any primary analytes, these laboratory flags had a negligible impact on ALS water chemistry data reliability and laboratory precision was overall considered excellent.

A total of 53 MB samples were analyzed in the BAL laboratory reports (Appendix M). Of the 245 reported method blank results, only one result was above the LRL (for total selenium; see laboratory report 2207059 in Appendix M) and so did not meet the DQO. As only



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

Parameter	Units	BC WQG ^a		EVWQP Level 1 Benchmarks/ Relevant Screening Values/UEC ^b	Range of LRLs	No. LRLs > Guideline	No. Sample Results < LRL
		Long-term	Short-term				
Physical Tests							
Total Suspended Solids	mg/L	-	-	-	1	-	11 (18.3%)
Anions and Nutrients							
Acidity (as CaCO ₃)	mg/L	-	-	-	2	-	51 (85.0%)
Alkalinity, Carbonate (as CO ₃)	mg/L	-	-	-	1	-	42 (70.0%)
Alkalinity, Carbonate (as CaCO ₃)	mg/L	-	-	-	1	-	42 (70.0%)
Alkalinity, Hydroxide (as CaCO ₃)	mg/L	-	-	-	1	-	60 (100%)
Alkalinity, Hydroxide (as OH)	mg/L	-	-	-	1	-	60 (100%)
Bromide (Br)	mg/L	-	-	-	0.05	-	60 (100%)
Chloride (Cl)	mg/L	150	600	-	0.1	0	1 (1.67%)
Ammonia, Total (as N) ^c	mg/L	0.196	1.02	-	0.005	0	42 (70.0%)
Nitrite (as N) ^d	mg/L	0.02	0.06	-	0.001	0	20 (33.3%)
Total Kjeldahl Nitrogen	mg/L	-	-	-	0.05 to 0.5	-	13 (21.7%)
Orthophosphate	mg/L	-	-	-	0.001	-	42 (70.0%)
Phosphorus, Total	mg/L	-	-	-	0.002	-	7 (11.7%)
Organic/Inorganic Carbon							
Dissolved Organic Carbon	mg/L	-	-	-	0.5	-	29 (48.3%)
Total Organic Carbon	mg/L	-	-	-	0.5	-	29 (48.3%)
Total Metals							
Antimony	mg/L	0.009	-	-	0.0001	0	17 (28.3%)
Arsenic	mg/L	-	0.005	-	0.0001	0	12 (20.0%)
Beryllium	µg/L	0.13	-	-	0.02	0	60 (100%)
Bismuth	mg/L	-	-	-	0.00005	-	60 (100%)
Boron	mg/L	1.2	-	-	0.01	0	29 (48.3%)
Cadmium	µg/L	-	-	-	0.005	-	1 (1.67%)
Chromium ^e	mg/L	0.001	-	-	0.0001	0	8 (13.3%)
Cobalt	µg/L	4	110	-	0.1	0	52 (86.7%)
Copper	mg/L	-	-	-	0.0005	-	57 (95.0%)
Iron	mg/L	-	1	-	0.01	0	18 (30.0%)
Lead ^f	mg/L	0.007	0.095	-	0.00005	0	45 (75.0%)
Manganese ^f	mg/L	1.10	1.79	-	0.0001	0	1 (1.67%)
Mercury ^g	mg/L	0.00000125	-	-	0.000005	60 (100%)	60 (100%)
Nickel ^f	mg/L	0.105	-	-	0.0005	0	13 (21.7%)
Silver ^f	mg/L	0.0015	0.003	-	0.00001	0	60 (100%)
Thallium	mg/L	0.0008	-	-	0.00001	0	57 (95.0%)
Tin	mg/L	-	-	-	0.0001	-	58 (96.7%)
Titanium	mg/L	-	-	-	0.0003	-	42 (70.0%)
Vanadium	mg/L	-	-	-	0.0005	-	51 (85.0%)
Zinc ^f	mg/L	0.025	0.050	-	0.003	0	36 (60.0%)
Dissolved Metals							
Aluminum ^h	mg/L	0.05	0.1	-	0.001	0	30 (50.0%)
Antimony	mg/L	-	-	-	0.0001	-	23 (38.3%)
Arsenic	mg/L	-	-	-	0.0001	-	51 (85.0%)
Beryllium	µg/L	-	-	-	0.02	-	60 (100%)
Bismuth	mg/L	-	-	-	0.00005	-	60 (100%)
Boron	mg/L	-	-	-	0.01	-	34 (56.7%)
Cadmium ^f	µg/L	0.231	0.667	0.149	0.005	0	1 (1.67%)
Chromium	mg/L	-	-	-	0.0001	-	32 (53.3%)
Cobalt	µg/L	-	-	-	0.1	-	58 (96.7%)
Copper	mg/L	-	-	-	0.0002	-	34 (56.7%)
Iron	mg/L	-	0.35	-	0.01	0	44 (73.3%)
Lead	mg/L	-	-	-	0.00005	-	60 (100%)
Lithium	mg/L	-	-	-	0.001	-	1 (1.67%)
Manganese	mg/L	-	-	-	0.0001	-	3 (5.00%)
Mercury	mg/L	-	-	-	0.000005	-	60 (100%)
Nickel	mg/L	-	-	0.002	0.0005	0	16 (26.7%)
Silver	mg/L	-	-	-	0.00001	-	60 (100%)
Thallium	mg/L	-	-	-	0.00001	-	57 (95.0%)
Tin	mg/L	-	-	-	0.0001	-	60 (100%)
Titanium	mg/L	-	-	-	0.0003	-	60 (100%)
Vanadium	mg/L	-	-	-	0.0005	-	60 (100%)
Zinc	mg/L	-	-	-	0.001	-	20 (33.3%)

Notes: Only analytes with at least one result < Laboratory Reporting Limit (LRL) or LRL were above guidelines were displayed. The total number of samples in 2022 (n) was 60. EVWQP = Elk Valley Water Quality Plan; "-" = no applicable guideline exists.

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

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

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

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

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

^f Hardness-based guidelines calculated using the minimum hardness observed for all samples (113 mg/L).

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

^h Guideline based on minimum field pH (8.04).

Table A.3: Laboratory Reporting Limit (LRL) Evaluation for Selenium Speciation Analyses, FRO LAEMP, 2022

Parameter	Units	Range of LRLs	No. Sample Results < LRL
DMeSeO - Dimethylselenoxide	µg/L	0.01	59 (96.7%)
MeSe(IV) - Methylseleninic Acid	µg/L	0.01	48 (78.7%)
MeSe(VI) - Methaneselenonic Acid	µg/L	0.01	59 (96.7%)
Se(IV) - Selenite	µg/L	0.01 to 0.02	5 (8.20%)
SeCN - Selenocyanate	µg/L	0.01	61 (100%)
SeMe - Selenomethionine	µg/L	0.01	61 (100%)
Selenosulfate	µg/L	0.01	60 (98.4%)
Selenium Unknown	µg/L	0.01	61 (100%)

Notes: Only analytes with at least one result < LRL or an LRL above guidelines were displayed. The total number of samples in 2022 (n) was 61. LRL = Laboratory Reporting Limit. No guidelines exist for any analyte that had at least one result below the LRL.

one result (0.41% of MB results) did not meet the DQO, laboratory contamination was not considered to be of concern and laboratory precision was overall considered excellent.

Eight field blank samples and five trip blank samples were submitted to ALS for water chemistry analyses to assess the potential for field sampling contamination. The same DQOs that were used for laboratory blanks were also used for field blanks (i.e., concentrations should be below the LRL). Of the 744 individual analyte results measured in the field blanks, only seven (0.94% of results; one result each for acidity, total ammonia, total copper, total lead, dissolved copper, dissolved lead, and dissolved zinc) were above the LRL and did not meet the laboratory DQO (Table A.4). Of the 319 individual analyte results for trip blank samples, only three results (0.94% of results; one result for acidity as CaCO₃ and two results for total barium) were above the LRL and did not meet the laboratory DQO (Table A.4). None of the analytes that were above detection in field or trip blank samples were analytes of concern in the FRO LAEMP. Additionally, as relatively few results were above detection (~ 1% in both field and trip blanks), field and laboratory contamination of water samples was considered of little to no concern and laboratory precision was overall considered good.

One field blank sample was submitted to BAL for aqueous selenium speciation analyses to assess potential field sampling contamination. All analytes were below detection and field contamination was not of concern.

A2.3 Data Precision

A total of 38 laboratory duplicate samples were used to evaluate precision within the ALS laboratory reports (Appendix M). All of the 1,308 individual analyte results met the laboratory DQO and ALS laboratory analytical precision was considered excellent. A total of 23 laboratory duplicate samples were used to evaluate precision within the BAL laboratory reports (Appendix M). All of the 87 individual analyte results met the laboratory DQO and BAL laboratory analytical precision was considered excellent.

Eight sets of field duplicate samples were collected to assess field sampling precision for water chemistry analyzed by ALS (Table A.5). Several relative percent differences (RPDs) could not be calculated as both analyte concentrations were below the LRL. Of the 502 RPDs that could be calculated, 40 RPDs were greater than the 30% DQO, including one result each for acidity (as CaCO₃), fluoride, orthophosphate, dissolved and total organic carbon, total aluminum, cadmium, chromium, and zinc, and dissolved aluminum, cadmium, iron, manganese, molybdenum, nickel, and zinc, two results each for total suspended solids, pH, bromide, and total iron, three results each for turbidity, total ammonia, and total phosphorous, and six results for ion balance (Table A.5). As a relatively low number of RPDs (7.97% of all results)



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

Parameter	No. Field Blank Results > LRL	No. Trip Blank Results > LRL
Physical Tests		
Conductivity	8 (100%)	5 (100%)
Hardness (as CaCO ₃)	8 (100%)	3 (100%)
Hardness - Dissolved (as CaCO ₃)	8 (100%)	3 (100%)
ORP	-	-
Total Suspended Solids	8 (100%)	5 (100%)
Total Dissolved Solids	8 (100%)	5 (100%)
Anions and Nutrients		
Acidity (as CaCO ₃)	7 (87.5%)	4 (80.0%)
Alkalinity, Bicarbonate (as HCO ₃)	8 (100%)	5 (100%)
Alkalinity, Bicarbonate (as CaCO ₃)	8 (100%)	5 (100%)
Alkalinity, Carbonate (as CO ₃)	8 (100%)	5 (100%)
Alkalinity, Carbonate (as CaCO ₃)	8 (100%)	5 (100%)
Alkalinity, Hydroxide (as CaCO ₃)	8 (100%)	5 (100%)
Alkalinity, Hydroxide (as OH)	8 (100%)	5 (100%)
Alkalinity, Total (as CaCO ₃)	8 (100%)	5 (100%)
Bromide (Br)	8 (100%)	5 (100%)
Chloride (Cl)	8 (100%)	5 (100%)
Fluoride	8 (100%)	5 (100%)
Ammonia, Total (as N)	7 (87.5%)	-
Nitrate (as N)	8 (100%)	5 (100%)
Nitrite (as N)	8 (100%)	5 (100%)
Total Kjeldahl Nitrogen	8 (100%)	5 (100%)
Orthophosphate	8 (100%)	5 (100%)
Phosphorus, Total	8 (100%)	5 (100%)
Sulphate	8 (100%)	5 (100%)
Anion Sum	8 (100%)	5 (100%)
Cation Sum	8 (100%)	5 (100%)
Cation - Anion Balance	-	-
Carbon		
Dissolved Organic Carbon	8 (100%)	-
Total Organic Carbon	8 (100%)	5 (100%)
Total Metals		
Aluminum	8 (100%)	5 (100%)
Antimony	8 (100%)	5 (100%)
Arsenic	8 (100%)	5 (100%)
Barium	8 (100%)	3 (60.0%)
Beryllium	8 (100%)	5 (100%)
Bismuth	8 (100%)	5 (100%)
Boron	8 (100%)	5 (100%)
Cadmium	8 (100%)	5 (100%)
Calcium	8 (100%)	5 (100%)
Chromium	8 (100%)	5 (100%)
Cobalt	8 (100%)	5 (100%)
Copper	7 (87.5%)	5 (100%)
Iron	8 (100%)	5 (100%)
Lead	7 (87.5%)	5 (100%)
Lithium	8 (100%)	5 (100%)
Magnesium	8 (100%)	5 (100%)
Manganese	8 (100%)	5 (100%)
Mercury	8 (100%)	-
Molybdenum	8 (100%)	5 (100%)
Nickel	8 (100%)	5 (100%)
Potassium	8 (100%)	5 (100%)
Selenium	8 (100%)	5 (100%)
Silicon	8 (100%)	5 (100%)
Silver	8 (100%)	5 (100%)
Sodium	8 (100%)	5 (100%)
Strontium	8 (100%)	5 (100%)
Sulphur	8 (100%)	5 (100%)
Thallium	8 (100%)	5 (100%)
Tin	8 (100%)	5 (100%)
Titanium	8 (100%)	5 (100%)
Uranium	8 (100%)	5 (100%)
Vanadium	8 (100%)	-
Zinc	8 (100%)	5 (100%)
Dissolved Metals		
Aluminum	8 (100%)	1 (100%)
Antimony	8 (100%)	1 (100%)
Arsenic	8 (100%)	1 (100%)
Barium	8 (100%)	1 (100%)
Beryllium	8 (100%)	1 (100%)
Bismuth	8 (100%)	1 (100%)
Boron	8 (100%)	1 (100%)
Cadmium	8 (100%)	1 (100%)
Calcium	8 (100%)	5 (100%)
Chromium	8 (100%)	1 (100%)
Cobalt	8 (100%)	1 (100%)
Copper	7 (87.5%)	1 (100%)
Iron	8 (100%)	1 (100%)
Lead	7 (87.5%)	1 (100%)
Lithium	8 (100%)	1 (100%)
Magnesium	8 (100%)	5 (100%)
Manganese	8 (100%)	1 (100%)
Mercury	8 (100%)	-
Molybdenum	8 (100%)	1 (100%)
Nickel	8 (100%)	1 (100%)
Potassium	8 (100%)	5 (100%)
Selenium	8 (100%)	1 (100%)
Silicon	8 (100%)	1 (100%)
Silver	8 (100%)	1 (100%)
Sodium	8 (100%)	5 (100%)
Strontium	8 (100%)	1 (100%)
Sulphur	8 (100%)	1 (100%)
Thallium	8 (100%)	1 (100%)
Tin	8 (100%)	1 (100%)
Titanium	8 (100%)	1 (100%)
Uranium	8 (100%)	1 (100%)
Vanadium	8 (100%)	1 (100%)
Zinc	7 (87.5%)	1 (100%)

Notes: LRL = Laboratory Reporting Limit; "-" = data not collected. Eight field blank samples and five trip blank samples were collected in 2022. Only analytes with at least one blank results > LRL were displayed. Calcium, magnesium, potassium, and sodium were the only dissolved metals measured in most trip blank samples.

Table A.5: Field Duplicate Results for Water Chemistry Analyses, FRO LAEMP, 2022

Parameter	Units	RG_FOBKS_WS_LAEMP_FRO_2022-11_7	RG_RIVER_WS_LAEMP_FRO_2022-11_7	RPD (%)	RG_FOUKI_WS_LAEMP_FRO_2022-12_8	RG_RIVER_WS_LAEMP_FRO_2022-12_8	RPD (%)
Physical Tests							
Conductivity	µS/cm	988	995	0.706	1170	1160	0.858
Acidity (as CaCO ₃)	mg/L	<2.0	<2.0	-	<2.0	<2.0	-
Alkalinity, bicarbonate (as CaCO ₃)	mg/L	179	186	3.84	205	208	1.45
Alkalinity, bicarbonate (as HCO ₃)	mg/L	219	226	3.15	250	254	1.59
Alkalinity, carbonate (as CO ₃)	mg/L	6.50	7.00	7.41	<1.0	<1.0	-
Alkalinity, carbonate (as CaCO ₃)	mg/L	10.8	11.6	7.14	<1.0	<1.0	-
Alkalinity, hydroxide (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as OH)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, total (as CaCO ₃)	mg/L	190	197	3.62	205	208	1.45
Hardness (as CaCO ₃), dissolved	mg/L	570	598	4.79	604	609	0.824
Oxidation-reduction potential [ORP]	mV	288	299	3.75	424	424	0
Solids, total dissolved [TDS]	mg/L	8.40	8.41	0.119	909	979	7.42
Solids, total suspended [TSS]	mg/L	775	801	3.30	2.00	2.70	29.8
Turbidity	NTU	5.70	4.70	19.2	0.390	0.570	37.5
pH	pH units	0.350	0.700	66.7	8.27	8.24	0.363
Anions and Nutrients							
Ammonia, total (as N)	mg/L	1.40	1.34	4.38	<0.0050	<0.0050	-
Bromide	mg/L	<0.0050	0.0128	88	<0.250	<0.250	-
Chloride	mg/L	<0.250	<0.250	-	2.01	2.06	2.46
Fluoride	mg/L	1.71	1.78	4.01	0.172	0.169	1.76
Kjeldahl nitrogen, total [TKN]	mg/L	0.181	0.179	1.11	1.46	1.48	1.36
Nitrate (as N)	mg/L	19.2	19.4	1.04	27.3	27.3	0
Nitrite (as N)	mg/L	<0.0050	<0.0050	-	0.007	0.007	2.86
Orthophosphate, dissolved (as P)	mg/L	<0.0010	<0.0010	-	<0.0010	<0.0010	-
Phosphorus, total	mg/L	0.003	0.006	66.7	<0.0020	<0.0020	-
Sulfate (as SO ₄)	mg/L	321	322	0.311	409	408	0.245
Organic/Inorganic Carbon							
Carbon, dissolved organic [DOC]	mg/L	0.820	2.20	91.4	<0.50	<0.50	-
Carbon, total organic [TOC]	mg/L	0.620	2.35	116	<0.50	<0.50	-
Ion Balance (Matrix: Water)							
Anion sum	meq/L	11.9	12.1	1.67	14.6	14.7	0.683
Cation sum	meq/L	11.6	12.1	4.22	12.2	12.3	0.816
Ion balance (APHA)	%	-1.28	<0.01	203	-8.960	-8.890	0.78
Ion balance (cations/anions)	%	97.5	100	2.53	83.6	83.7	0.120
Total Metals							
Aluminum	mg/L	0.007	0.0102	38.6	0.004	0.004	0
Antimony	mg/L	0.0002	0.0002	20.0	0.0002	0.0002	9.52
Arsenic	mg/L	<0.00010	<0.00010	-	0.0001	0.0001	0
Barium	mg/L	0.0857	0.104	19.3	0.102	0.104	1.94
Beryllium	µg/L	<0.020	<0.020	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Boron	mg/L	0.0140	0.0140	0	0.0110	<0.010	9.52
Cadmium	µg/L	0.0719	0.0814	12.4	0.0812	0.0877	7.70
Calcium	mg/L	126	148	16.1	167	167	0
Chromium	mg/L	0.0001	0.0001	26.1	<0.00010	<0.00010	-
Cobalt	µg/L	<0.10	<0.10	-	<0.10	<0.10	-
Copper	mg/L	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Iron	mg/L	0.0390	0.0450	14.3	0.0410	0.0440	7.06
Lead	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Lithium	mg/L	0.0598	0.0648	8.03	0.0873	0.0793	9.60
Magnesium	mg/L	62.9	71.7	13.1	78.7	82.5	4.71
Manganese	mg/L	0.0121	0.0134	10.2	0.0136	0.0148	8.45
Mercury	µg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Molybdenum	mg/L	0.001	0.002	19.2	0.001	0.001	6.25
Nickel	mg/L	0.004	0.005	15.9	0.005	0.005	4.63
Potassium	mg/L	1.76	2.07	16.2	2.10	2.14	1.89
Selenium	µg/L	69.5	74.0	6.27	98.7	99.3	0.606
Silicon	mg/L	1.67	1.91	13.4	1.76	1.88	6.59
Silver	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium	mg/L	3.16	3.20	1.26	3.93	3.87	1.54
Strontium	mg/L	0.185	0.213	14.1	0.231	0.231	0
Sulphur	mg/L	124	119	4.12	143	146	2.08
Thallium	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Tin	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Titanium	mg/L	<0.00030	<0.00030	-	<0.00030	<0.00030	-
Uranium	mg/L	0.004	0.004	11.4	0.005	0.005	0.618
Vanadium	mg/L	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Zinc	mg/L	0.005	0.009	58.6	<0.0030	<0.0030	-

Indicates RPD exceeded 30%.

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

Table A.5: Field Duplicate Results for Water Chemistry Analyses, FRO LAEMP, 2022

Parameter	Units	RG_FOBKS_WS_LAEMP_FRO_2022-11_7	RG_RIVER_WS_LAEMP_FRO_2022-11_7	RPD (%)	RG_FOUKI_WS_LAEMP_FRO_2022-12_8	RG_RIVER_WS_LAEMP_FRO_2022-12_8	RPD (%)
Dissolved Metals							
Aluminum	mg/L	<0.0010	<0.0010	-	<0.0010	0.001	0
Antimony	mg/L	0.0002	0.0002	15.4	0.0002	0.0002	10.5
Arsenic	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Barium	mg/L	0.0916	0.0918	0.218	0.0897	0.0942	4.89
Beryllium	µg/L	<0.020	<0.020	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Boron	mg/L	0.0120	0.0110	8.70	<0.010	<0.010	-
Cadmium	µg/L	0.0696	0.0671	3.66	0.0547	0.0691	23.3
Calcium	mg/L	122	130	6.35	136	146	7.09
Chromium	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Cobalt	µg/L	<0.10	<0.10	-	<0.10	<0.10	-
Copper	mg/L	<0.00020	<0.00020	-	<0.00020	<0.00020	-
Iron	mg/L	0.0280	0.0280	0	0.0290	0.0320	9.84
Lead	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Lithium	mg/L	0.0572	0.0580	1.39	0.0748	0.0796	6.22
Magnesium	mg/L	64.5	66.3	2.75	64.3	59.3	8.09
Manganese	mg/L	0.0118	0.0118	0	0.0114	0.0122	6.78
Mercury	µg/L	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.001	0.001	5.05	0.001	0.001	7.21
Nickel	mg/L	0.004	0.005	5.31	0.003	0.004	11.7
Potassium	mg/L	1.72	1.82	5.65	1.77	1.85	4.42
Selenium	µg/L	139	105	27.9	98.3	103	4.67
Silicon	mg/L	2.11	1.98	6.36	1.60	1.88	16.1
Silver	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium	mg/L	2.89	2.86	1.04	3.12	3.17	1.59
Strontium	mg/L	0.177	0.182	2.79	0.198	0.210	5.88
Sulphur	mg/L	126	128	1.57	142	152	6.80
Thallium	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Tin	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Titanium	mg/L	<0.00030	<0.00030	-	<0.00030	<0.00030	-
Uranium	mg/L	0.004	0.004	5.59	0.005	0.005	9.73
Vanadium	mg/L	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Zinc	mg/L	0.005	0.005	6.32	0.002	0.002	0

Indicates RPD exceeded 30%.

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

Table A.5: Field Duplicate Results for Water Chemistry Analyses, FRO LAEMP, 2022

Parameter	Units	RG_FRUPO_WS_LAEMP_FRO_2022-12_7	RG_RIVER_WS_LAEMP_FRO_2022-12_7	RPD (%)	RG_FRDSCC1_WS_LAEMP_FRO_2022-09_N	RG_RIVER_WS_LAEMP_FRO_2022-09_N	RPD (%)
Physical Tests							
Conductivity	µS/cm	1320	1310	0.760	925	925	0
Acidity (as CaCO ₃)	mg/L	3.70	<2.0	59.6	<2.0	<2.0	-
Alkalinity, bicarbonate (as CaCO ₃)	mg/L	266	257	3.44	187	183	2.16
Alkalinity, bicarbonate (as HCO ₃)	mg/L	324	313	3.45	228	224	1.77
Alkalinity, carbonate (as CO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, carbonate (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as OH)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, total (as CaCO ₃)	mg/L	266	257	3.44	187	183	2.16
Hardness (as CaCO ₃), dissolved	mg/L	706	745	5.38	500	529	5.64
Oxidation-reduction potential [ORP]	mV	420	417	0.717	300	302	0.664
Solids, total dissolved [TDS]	mg/L	1000	983	1.71	8.26	8.26	0
Solids, total suspended [TSS]	mg/L	4.20	<1.0	71.0	675	669	0.893
Turbidity	NTU	0.180	0.230	24.4	2.20	1.10	66.7
pH	pH units	8.08	8.13	0.617	0.360	0.460	24.4
Anions and Nutrients							
Ammonia, total (as N)	mg/L	<0.0050	<0.0050	-	1.38	2.06	39.5
Bromide	mg/L	<0.250	<0.250	-	<0.0050	<0.0050	-
Chloride	mg/L	16.9	17.0	0.590	<0.250	<0.050	-
Fluoride	mg/L	0.154	0.154	0	1.02	0.710	35.8
Kjeldahl nitrogen, total [TKN]	mg/L	1.08	1.72	45.7	0.191	0.187	2.12
Nitrate (as N)	mg/L	23.0	23.0	0	21.1	20.8	1.43
Nitrite (as N)	mg/L	0.005	<0.0050	1.98	0.0147	0.0144	2.06
Orthophosphate, dissolved (as P)	mg/L	<0.0010	<0.0010	-	<0.0010	<0.0010	-
Phosphorus, total	mg/L	0.005	0.003	57.1	0.003	0.002	19.6
Sulfate (as SO ₄)	mg/L	450	451	0.222	280	266	5.13
Organic/Inorganic Carbon							
Carbon, dissolved organic [DOC]	mg/L	<0.50	<0.50	-	<0.50	<0.50	-
Carbon, total organic [TOC]	mg/L	<0.50	<0.50	-	<0.50	<0.50	-
Ion Balance (Matrix: Water)							
Anion sum	meq/L	16.8	16.6	1.20	11.1	10.7	3.67
Cation sum	meq/L	14.5	15.3	5.37	10.1	10.8	6.70
Ion balance (APHA)	%	-7.35	-4.08	57.2	4.72	0.465	164
Ion balance (cations/anions)	%	86.3	92.2	6.61	91.0	101	10.4
Total Metals							
Aluminum	mg/L	0.004	0.003	11.1	0.006	0.006	8.70
Antimony	mg/L	<0.00010	<0.00010	-	0.0003	0.0002	25.0
Arsenic	mg/L	0.0001	<0.00010	0	0.0001	0.0001	0
Barium	mg/L	0.100	0.0997	0.300	0.0743	0.0707	4.97
Beryllium	µg/L	<0.020	<0.020	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Boron	mg/L	0.0160	0.0160	0	0.0130	0.0120	8.00
Cadmium	µg/L	0.0443	0.0465	4.85	0.112	0.0939	17.6
Calcium	mg/L	192	189	1.57	115	108	6.28
Chromium	mg/L	0.0002	0.0002	0	0.0001	0.0001	15.4
Cobalt	µg/L	<0.10	<0.10	-	<0.10	<0.10	-
Copper	mg/L	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Iron	mg/L	<0.010	<0.010	-	<0.010	<0.010	-
Lead	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Lithium	mg/L	0.0684	0.0667	2.52	0.0760	0.0738	2.94
Magnesium	mg/L	88.4	88.0	0.454	54.8	52.3	4.67
Manganese	mg/L	0.0006	0.0005	28.6	0.0008	0.0006	17.1
Mercury	µg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Molybdenum	mg/L	0.0008	0.0008	7.16	0.001	0.001	3.60
Nickel	mg/L	<0.00050	<0.00050	-	0.0113	0.0110	2.69
Potassium	mg/L	2.74	2.72	0.733	1.90	1.81	4.85
Selenium	µg/L	99.2	98.1	1.12	58.2	59.3	1.87
Silicon	mg/L	2.54	2.51	1.19	1.86	1.70	8.99
Silver	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium	mg/L	8.62	8.40	2.59	2.84	2.72	4.32
Strontium	mg/L	0.205	0.204	0.489	0.180	0.175	2.82
Sulphur	mg/L	158	158	0	101	95.7	5.39
Thallium	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Tin	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Titanium	mg/L	<0.00030	<0.00030	-	<0.00030	<0.00030	-
Uranium	mg/L	0.005	0.005	0.414	0.004	0.004	3.14
Vanadium	mg/L	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Zinc	mg/L	<0.0030	<0.0030	-	0.006	0.005	12.6

Indicates RPD exceeded 30%.

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

Table A.5: Field Duplicate Results for Water Chemistry Analyses, FRO LAEMP, 2022

Parameter	Units	RG_FRUPO_WS_ LAEMP_ FRO_2022-12_7	RG_RIVER_WS_ LAEMP_FRO_202 2-12_7	RPD (%)	RG_FRDSCC1_ WS_LAEMP_ FRO_2022-09_N	RG_RIVER_WS_ LAEMP_FRO_ 2022-09_N	RPD (%)
Dissolved Metals							
Aluminum	mg/L	<0.0010	<0.0010	-	<0.0010	<0.0010	-
Antimony	mg/L	<0.00010	<0.00010	-	0.0002	0.0002	0
Arsenic	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Barium	mg/L	0.0858	0.0967	11.9	0.0744	0.0823	10.1
Beryllium	µg/L	<0.020	<0.020	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Boron	mg/L	0.0130	0.0150	14.3	0.0120	0.0120	0
Cadmium	µg/L	0.0374	0.0490	26.9	0.0542	0.0592	8.82
Calcium	mg/L	164	170	3.59	116	120	3.39
Chromium	mg/L	0.0001	0.0002	14.3	<0.00010	0.0001	-
Cobalt	µg/L	<0.10	<0.10	-	<0.10	<0.10	-
Copper	mg/L	<0.00020	<0.00020	-	<0.00020	<0.00020	-
Iron	mg/L	<0.010	<0.010	-	<0.010	<0.010	-
Lead	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Lithium	mg/L	0.0638	0.0682	6.67	0.0761	0.0796	4.50
Magnesium	mg/L	72.0	77.9	7.87	51.1	55.8	8.79
Manganese	mg/L	0.0004	0.0004	12.0	0.0004	0.0005	6.59
Mercury	µg/L	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.0007	0.0008	17.8	0.001	0.001	4.18
Nickel	mg/L	<0.00050	<0.00050	-	0.0102	0.0109	6.64
Potassium	mg/L	2.37	2.56	7.71	1.62	1.79	9.97
Selenium	µg/L	96.7	123	23.9	78.5	71.0	10.0
Silicon	mg/L	2.34	2.64	12.0	1.91	1.88	1.58
Silver	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium	mg/L	7.01	7.69	9.25	2.66	2.94	10.0
Strontium	mg/L	0.193	0.209	7.96	0.183	0.193	5.32
Sulphur	mg/L	154	186	18.8	104	97.2	6.76
Thallium	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Tin	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Titanium	mg/L	<0.00030	<0.00030	-	<0.00030	<0.00030	-
Uranium	mg/L	0.005	0.005	13.2	0.004	0.004	5.51
Vanadium	mg/L	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Zinc	mg/L	<0.0010	<0.0010	-	0.004	0.004	7.79

Indicates RPD exceeded 30%.

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

Table A.5: Field Duplicate Results for Water Chemistry Analyses, FRO LAEMP, 2022

Parameter	Units	RG_FRSch2_WS _LAEMP_ FRO_2022-09_14	RG_RIVER2_ WS_LAEMP_ FRO_2022-09_14	RPD (%)	RG_FOBKS_ WS_LAEMP_ FRO_2022-09_13	RG_RIVER_WS_ LAEMP_FRO_ 2022-09_13	RPD (%)
Physical Tests							
Conductivity	µS/cm	1060	1080	1.87	944	941	0.318
Acidity (as CaCO ₃)	mg/L	4.70	4.70	0	<2.0	<2.0	-
Alkalinity, bicarbonate (as CaCO ₃)	mg/L	234	247	5.41	205	178	14.1
Alkalinity, bicarbonate (as HCO ₃)	mg/L	285	301	5.46	250	217	14.1
Alkalinity, carbonate (as CO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, carbonate (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as OH)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, total (as CaCO ₃)	mg/L	234	247	5.41	205	178	14.1
Hardness (as CaCO ₃), dissolved	mg/L	594	585	1.53	480	532	10.3
Oxidation-reduction potential [ORP]	mV	279	284	1.78	326	327	0.306
Solids, total dissolved [TDS]	mg/L	8.03	7.93	1.25	730	715	2.08
Solids, total suspended [TSS]	mg/L	811	820	1.10	1.40	10.3	152
Turbidity	NTU	2.00	1.80	10.5	0.560	2.10	116
pH	pH units	0.160	0.150	6.45	8.26	8.27	0.121
Anions and Nutrients							
Ammonia, total (as N)	mg/L	2.32	2.52	8.26	<0.0050	<0.0050	-
Bromide	mg/L	0.005	0.005	1.87	<0.250	<0.050	-
Chloride	mg/L	<0.250	<0.250	-	1.32	1.16	12.9
Fluoride	mg/L	4.24	4.24	0	0.189	0.192	1.57
Kjeldahl nitrogen, total [TKN]	mg/L	0.159	0.160	0.627	2.59	2.10	20.9
Nitrate (as N)	mg/L	21.2	21.4	0.939	21.6	21.4	0.930
Nitrite (as N)	mg/L	0.007	0.007	4.26	0.0105	0.0095	10.0
Orthophosphate, dissolved (as P)	mg/L	<0.0010	<0.0010	-	<0.0010	<0.0010	-
Phosphorus, total	mg/L	0.003	0.004	27.8	<0.0020	0.0139	1.77
Sulfate (as SO ₄)	mg/L	364	363	0.275	295	289	2.05
Organic/Inorganic Carbon							
Carbon, dissolved organic [DOC]	mg/L	<0.50	<0.50	-	<0.50	<0.50	-
Carbon, total organic [TOC]	mg/L	<0.50	0.560	11.3	<0.50	<0.50	-
Ion Balance (Matrix: Water)							
Anion sum	meq/L	13.9	14.1	1.43	11.8	11.1	6.11
Cation sum	meq/L	12.0	11.9	0.837	9.76	10.8	10.1
Ion balance (APHA)	%	7.34	8.46	14.2	9.46	1.37	149
Ion balance (cations/anions)	%	86.3	84.4	2.23	82.7	97.3	16.2
Total Metals							
Aluminum	mg/L	0.007	0.008	8.33	0.007	0.007	10.2
Antimony	mg/L	0.0002	0.0002	9.52	0.0002	0.0002	4.26
Arsenic	mg/L	0.0001	0.0001	7.41	0.0002	0.0002	14.6
Barium	mg/L	0.0826	0.0817	1.10	0.0820	0.0826	0.729
Beryllium	µg/L	<0.020	<0.020	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Boron	mg/L	0.0140	0.0140	0	0.0140	0.0140	0
Cadmium	µg/L	0.0500	0.0370	29.9	0.0594	0.006	165
Calcium	mg/L	148	143	3.44	115	114	0.873
Chromium	mg/L	0.0002	<0.00010	40.0	0.0001	<0.00010	-
Cobalt	µg/L	<0.10	<0.10	-	<0.10	<0.10	-
Copper	mg/L	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Iron	mg/L	<0.010	0.0140	33.3	0.0300	0.0150	66.7
Lead	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Lithium	mg/L	0.0606	0.0568	6.47	0.0666	0.0654	1.82
Magnesium	mg/L	75.0	73.6	1.88	56.0	57.4	2.47
Manganese	mg/L	0.002	0.002	9.80	0.007	0.006	20.5
Mercury	µg/L	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.003	0.002	4.43	0.001	0.001	3.86
Nickel	mg/L	0.003	0.003	1.59	0.006	0.006	0.495
Potassium	mg/L	2.26	2.20	2.69	1.99	2.08	4.42
Selenium	µg/L	89.3	82.4	8.04	67.9	70.0	3.05
Silicon	mg/L	2.57	2.34	9.37	1.92	2.09	8.48
Silver	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium	mg/L	3.74	3.67	1.89	2.88	2.95	2.40
Strontium	mg/L	0.191	0.176	8.17	0.176	0.178	1.13
Sulphur	mg/L	145	133	8.63	106	114	7.27
Thallium	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Tin	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Titanium	mg/L	<0.00030	<0.00030	-	<0.00030	<0.00030	-
Uranium	mg/L	0.004	0.004	6.00	0.004	0.004	1.31
Vanadium	mg/L	<0.00050	<0.00050	-	<0.00250	<0.00250	-
Zinc	mg/L	<0.0030	<0.0030	-	<0.0030	<0.0030	-

Indicates RPD exceeded 30%.

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

Table A.5: Field Duplicate Results for Water Chemistry Analyses, FRO LAEMP, 2022

Parameter	Units	RG_FRSch2_WS _LAEMP_ FRO_2022-09_14	RG_RIVER2_ WS_LAEMP_ FRO_2022-09_14	RPD (%)	RG_FOBKS_ WS_LAEMP_ FRO_2022-09_13	RG_RIVER_WS_ LAEMP_FRO_ 2022-09_13	RPD (%)
Dissolved Metals							
Aluminum	mg/L	<0.0010	0.001	1.80	0.002	<0.0010	46.2
Antimony	mg/L	0.0001	0.0002	28.6	0.0002	0.0002	14.0
Arsenic	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Barium	mg/L	0.0699	0.0735	5.02	0.0844	0.0856	1.41
Beryllium	µg/L	<0.020	<0.020	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Boron	mg/L	0.0110	0.0110	0	0.0120	0.0140	15.4
Cadmium	µg/L	0.0400	0.0402	0.499	0.0577	0.009	149
Calcium	mg/L	130	129	0.772	101	117	14.7
Chromium	mg/L	0.0001	<0.00010	0	0.0001	<0.00010	0.0
Cobalt	µg/L	<0.10	<0.10	-	<0.10	<0.10	-
Copper	mg/L	<0.00020	<0.00020	-	<0.00020	<0.00020	-
Iron	mg/L	<0.010	<0.010	-	0.0190	0.0110	53.3
Lead	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Lithium	mg/L	0.0570	0.0609	6.62	0.0627	0.0723	14.2
Magnesium	mg/L	65.3	63.8	2.32	55.3	58.3	5.28
Manganese	mg/L	0.0006	0.001	60.7	0.007	0.005	23.7
Mercury	µg/L	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.001	0.002	51.8	0.001	0.001	16.7
Nickel	mg/L	0.001	0.002	53.1	0.006	0.006	0.495
Potassium	mg/L	1.95	1.98	1.53	2.05	2.16	5.23
Selenium	µg/L	87.9	80.9	8.29	76.4	82.4	7.56
Silicon	mg/L	2.30	2.19	4.90	2.00	2.09	4.40
Silver	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium	mg/L	3.40	3.42	0.587	2.84	2.96	4.14
Strontium	mg/L	0.172	0.176	2.30	0.157	0.188	18.0
Sulphur	mg/L	117	120	2.53	98.8	101	2.20
Thallium	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Tin	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Titanium	mg/L	<0.00030	<0.00030	-	<0.00030	<0.00030	-
Uranium	mg/L	0.003	0.004	9.13	0.003	0.004	20.1
Vanadium	mg/L	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Zinc	mg/L	<0.0010	0.001	0	0.002	<0.0010	63.6

Indicates RPD exceeded 30%.

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

Table A.5: Field Duplicate Results for Water Chemistry Analyses, FRO LAEMP, 2022

Parameter	Units	RG_FRUPO_WS_LAEMP_FRO_2022-06_29	RG_RIVER_WS_LAEMP_FRO_2022-06_29	RPD (%)	RG_FRCP1SW_WS_LAEMP_FRO_2022-06_28	RG_RIVER_WS_LAEMP_FRO_2022-06_28	RPD (%)
Physical Tests							
Conductivity	µS/cm	549	558	1.63	531	528	0.567
Acidity (as CaCO ₃)	mg/L	<2.0	<2.0	-	<2.0	<2.0	-
Alkalinity, bicarbonate (as CaCO ₃)	mg/L	172	190	9.94	176	158	10.8
Alkalinity, bicarbonate (as HCO ₃)	mg/L	210	232	9.95	214	193	10.3
Alkalinity, carbonate (as CO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, carbonate (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as CaCO ₃)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, hydroxide (as OH)	mg/L	<1.0	<1.0	-	<1.0	<1.0	-
Alkalinity, total (as CaCO ₃)	mg/L	172	190	9.94	176	158	10.8
Hardness (as CaCO ₃), dissolved	mg/L	317	330	4.02	278	276	0.722
Oxidation-reduction potential [ORP]	mV	367	281	26.5	347	292	17.2
Solids, total dissolved [TDS]	mg/L	8.01	8.00	0.125	8.20	8.23	0.365
Solids, total suspended [TSS]	mg/L	388	399	2.80	380	344	9.94
Turbidity	NTU	9.00	8.30	8.09	10.7	8.40	24.1
pH	pH units	1.64	1.96	17.8	3.50	2.28	42.2
Anions and Nutrients							
Ammonia, total (as N)	mg/L	1.19	0.674	55.4	<0.500	1.20	82.4
Bromide	mg/L	0.100	0.0288	111	<0.0050	<0.0050	-
Chloride	mg/L	<0.050	<0.050	-	<0.050	<0.050	-
Fluoride	mg/L	1.10	0.940	15.7	0.860	0.850	1.17
Kjeldahl nitrogen, total [TKN]	mg/L	0.159	0.144	9.90	0.166	0.163	1.82
Nitrate (as N)	mg/L	9.66	9.77	1.13	8.50	8.35	1.78
Nitrite (as N)	mg/L	0.0129	0.0101	24.3	0.004	0.003	20.3
Orthophosphate, dissolved (as P)	mg/L	<0.0010	<0.0010	-	0.005	0.002	81.3
Phosphorus, total	mg/L	0.0200	0.0126	45.4	0.0192	0.0217	12.2
Sulfate (as SO ₄)	mg/L	113	113	0	109	107	1.85
Organic/Inorganic Carbon							
Carbon, dissolved organic [DOC]	mg/L	1.34	1.18	12.7	1.37	1.47	7.04
Carbon, total organic [TOC]	mg/L	1.38	1.46	5.63	1.52	1.48	2.67
Ion Balance (Matrix: Water)							
Anion sum	meq/L	6.52	6.88	5.37	6.43	6.01	6.75
Cation sum	meq/L	6.46	6.71	3.80	5.67	5.62	0.886
Ion balance (APHA)	%	0.462	1.25	92.1	6.28	3.35	60.9
Ion balance (cations/anions)	%	99.1	97.5	1.63	88.2	93.5	5.83
Total Metals							
Aluminum	mg/L	0.0733	0.0772	5.18	0.0413	0.0419	1.44
Antimony	mg/L	0.0002	0.0002	22.2	0.0002	0.0002	0
Arsenic	mg/L	0.0002	0.0002	0	0.0001	0.0001	0
Barium	mg/L	0.0392	0.0398	1.52	0.0336	0.0344	2.35
Beryllium	µg/L	<0.020	<0.020	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Boron	mg/L	<0.010	<0.010	-	<0.010	<0.010	-
Cadmium	µg/L	0.0811	0.0825	1.71	0.106	0.103	2.87
Calcium	mg/L	73.9	76.8	3.85	66.2	63.7	3.85
Chromium	mg/L	0.0003	0.0002	8.00	0.0001	0.0001	0
Cobalt	µg/L	0.100	0.100	0	<0.10	<0.10	-
Copper	mg/L	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Iron	mg/L	0.116	0.129	10.6	0.0690	0.0650	5.97
Lead	mg/L	0.000088	0.000083	5.85	0.00007	0.000072	2.82
Lithium	mg/L	0.0260	0.0278	6.69	0.0258	0.0252	2.35
Magnesium	mg/L	31.7	31.5	0.633	28.1	28.6	1.76
Manganese	mg/L	0.007	0.007	4.76	0.007	0.007	4.29
Mercury	µg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Molybdenum	mg/L	0.001	0.001	10.3	0.001	0.001	0.687
Nickel	mg/L	0.003	0.003	3.07	0.004	0.004	2.47
Potassium	mg/L	1.37	1.37	0	1.21	1.24	2.45
Selenium	µg/L	36.5	36.1	1.10	32.1	32.5	1.24
Silicon	mg/L	1.78	1.82	2.22	1.63	1.65	1.22
Silver	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium	mg/L	1.75	1.78	1.70	1.75	1.71	2.31
Strontium	mg/L	0.0925	0.0964	4.13	0.0914	0.0926	1.30
Sulphur	mg/L	43.3	45.2	4.29	36.7	37.5	2.16
Thallium	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Tin	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Titanium	mg/L	0.0009	0.001	20.5	0.0005	0.0005	12.5
Uranium	mg/L	0.002	0.002	0	0.002	0.002	0.506
Vanadium	mg/L	0.0006	0.0005	8.85	<0.00050	<0.00050	-
Zinc	mg/L	0.004	0.004	0	0.004	0.004	7.59

Indicates RPD exceeded 30%.

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

Table A.5: Field Duplicate Results for Water Chemistry Analyses, FRO LAEMP, 2022

Parameter	Units	RG_FRUPO_WS_ LAEMP_ FRO_2022-06_29	RG_RIVER_WS_ LAEMP_ FRO_2022-06_29	RPD (%)	RG_FRCP1SW_ WS_LAEMP_ FRO_2022-06_28	RG_RIVER_WS_ LAEMP_FRO_ 2022-06_28	RPD (%)
Dissolved Metals							
Aluminum	mg/L	0.002	0.003	15.4	0.003	0.003	18.2
Antimony	mg/L	0.0002	0.0002	0	0.0002	0.0002	5.41
Arsenic	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Barium	mg/L	0.0380	0.0401	5.38	0.0332	0.0331	0.302
Beryllium	µg/L	<0.020	<0.020	-	<0.020	<0.020	-
Bismuth	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Boron	mg/L	<0.010	<0.010	-	<0.010	<0.010	-
Cadmium	µg/L	0.0633	0.0654	3.26	0.0807	0.0815	0.986
Calcium	mg/L	75.4	77.7	3.00	65.1	63.8	2.02
Chromium	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Cobalt	µg/L	<0.10	<0.10	-	<0.10	<0.10	-
Copper	mg/L	0.0002	0.0002	0	0.0003	0.0002	21.3
Iron	mg/L	<0.010	<0.010	-	<0.010	<0.010	-
Lead	mg/L	<0.000050	<0.000050	-	<0.000050	<0.000050	-
Lithium	mg/L	0.0266	0.0274	2.96	0.0247	0.0255	3.19
Magnesium	mg/L	31.3	33.0	5.29	28.1	28.4	1.06
Manganese	mg/L	0.001	0.001	6.06	0.001	0.001	3.51
Mercury	µg/L	<0.0000050	<0.0000050	-	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.001	0.001	1.53	0.002	0.001	2.67
Nickel	mg/L	0.002	0.003	4.74	0.003	0.003	0.913
Potassium	mg/L	1.36	1.39	2.18	1.21	1.24	2.45
Selenium	µg/L	37.6	38.8	3.14	32.3	32.2	0.310
Silicon	mg/L	1.56	1.59	1.90	1.56	1.57	0.639
Silver	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Sodium	mg/L	1.77	1.82	2.79	1.80	1.66	8.09
Strontium	mg/L	0.0890	0.0890	0	0.0906	0.0881	2.80
Sulphur	mg/L	43.5	43.3	0.461	35.3	35.9	1.69
Thallium	mg/L	<0.000010	<0.000010	-	<0.000010	<0.000010	-
Tin	mg/L	<0.00010	<0.00010	-	<0.00010	<0.00010	-
Titanium	mg/L	<0.00030	<0.00030	-	<0.00030	<0.00030	-
Uranium	mg/L	0.002	0.002	0	0.002	0.002	1.53
Vanadium	mg/L	<0.00050	<0.00050	-	<0.00050	<0.00050	-
Zinc	mg/L	0.003	0.003	7.41	0.003	0.003	3.28

Indicates RPD exceeded 30%.

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

were greater than 30% and most of those analytes were of low concern for the FRO LAEMP, field sampling precision was overall considered good.

Four sets of field duplicate samples were collected to assess field sampling precision for selenium speciation (Table A.6). Relative percent differences could not be calculated for several selenium speciation duplicate samples as the analyte concentrations in both samples were below the LRL. Of the 18 comparisons that could be calculated, only one did not meet the DQO of 30% (methylseleninic acid; Table A.6). As this result represents only 5.56% of all field duplicate comparisons, field sampling precision was overall considered good.

A2.4 Data Accuracy

Data accuracy within the ALS laboratory reports was evaluated based on results of 285 Laboratory Control Samples (LCS) and 39 Matrix Spike (MS) samples (see laboratory reports in Appendix M). Only one of the 1,342 LCS analyte results (total silicon) did not meet the laboratory DQO (total silicon; see laboratory report CG2208562 in Appendix M). However, this DQO exceedance was marginal (by < 10% absolute value) and was for < 10% of analytes in a Multi-Element/Multi-Parameter Scan, which is considered acceptable as per the Ontario Ministry of the Environment, Conservation, and Parks (previously the Ontario Ministry of the Environment; OMOE) and Canadian Council of Ministers of the Environment (CCME; see laboratory report CG2208562 in Appendix M). All 1,208 MS analyte results met the laboratory DQO. Recovery could not be calculated in several MS samples as background levels were greater than or equal to the initial spike concentration. However, as several other QC tests were successful and matrix spike issues due to high background presence is not uncommon, MS recovery not being calculable in several MS samples was not of great concern. Overall, the accuracy achieved by the laboratory was considered excellent.

Data accuracy within the BAL laboratory reports was evaluated based on results of 30 LCS, 23 MS samples, 23 Matrix Spike Duplicate (MSD) samples, and 24 Reference Material (RM) samples (see laboratory reports in Appendix M). All 39 LCS, 26 MS, 26 MSD, and 14 RM individual analyte results met the laboratory DQO. Therefore, the accuracy achieved by the laboratory was considered excellent.

A2.5 Hold Times

The recommended hold times for pH and oxidation-reduction potential (ORP) analyses (0.25 hrs) were exceeded in all samples collected. As *in situ* pH was used for data interpretation, these pH exceedances had no impact on data interpretability. Additionally, ORP is not used in any analyses. The hold times for turbidity were exceeded by one to three days in seven samples. Hold times for dissolved orthophosphate and nitrite were exceeded by two



Table A.6: Field Duplicate Results for Selenium Speciation Analyses, FRO LAEMP, 2022

Parameter	Units	RG_FOBKS_WS_LAEMP_FRO_2022-11_N	RG_RIVER_WS_LAEMP_FRO_2022-11_N	RPD (%)	RG_FRGHSC_WS_LAEMP_FRO_2022-09_N	RG_RIVER_WS_LAEMP_FRO_2022-09_N	RPD (%)	RG_FOUKI_WS_LAEMP_FRO_2022-12_N	RG_RIVER_WS_LAEMP_FRO_2022-12_N	RPD (%)	RG_FOBKS_WS_LAEMP_FRO_2022-12_N	RG_RIVER_WS_LAEMP_FRO_2022-06_N	RPD (%)
Total Selenium	µg/L	71.1	71.9	1.12	82.6	84.1	1.80	76.1	75.5	0.792	78	77.5	0.643
Dissolved Selenium	µg/L	74.4	74.8	0.536	83.1	88.2	5.95	77.9	86.9	10.9	72.7	72.3	0.552
Dimethylselenoxide	µg/L	0	0	-	0	0	-	0	0	-	0	0	-
MeSe(IV) - Methylseleninic acid	µg/L	0	0	-	0	0	-	0.005	0.006	18.2	0.006	0.009	40.0
Methaneselenonic Acid	µg/L	0	0	-	0	0	-	0	0	-	0	0	-
Se(IV) - Selenite	µg/L	0.169	0.207	20.2	0.087	0.094	7.73	0.206	0.210	1.92	0.196	0.204	4.00
Se(VI) - Selenate	µg/L	56	71	23.6	87.4	88.4	1.14	83.6	79.3	5.28	82.4	80.5	2.33
SeCN - Selenocyanate	µg/L	0	0	-	0	0	-	0	0	-	0	0	-
SeMe - Selenomethionine	µg/L	0	0	-	0	0	-	0	0	-	0	0	-
Selenosulphate	µg/L	0	0	-	0	0	-	0	0	-	0	0	-
Unknown Selenium Species	µg/L	0	0	-	0	0	-	0	0	-	0	0	-

 Indicates RPD exceeded 30%.

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

days in eight samples each (see laboratory reports CG2212410 and CG2212823 in Appendix M). The hold time for nitrate was exceeded by two days in one sample (see laboratory reports CG221410, CG2212555, and CG2212823 in Appendix M). None of the above hold time exceedances are expected to impact conclusions derived from the data but will still be taken into consideration during data interpretation. All hold times were met for selenium speciation samples. Overall, few samples exceeded hold times and hold time exceedances are expected to have little effect on the interpretation of results.

A2.6 Other Concerns

Total Kjeldahl nitrogen (TKN) concentrations in several water samples may have been biased low due to high nitrate concentrations (see laboratory reports CG2217060, CG2212555, CG2208450, CG2212630, CG2216906, CG2208562, CG2212981, CG2212860, CG2212410, and CG2212823 in Appendix M). This may have lowered results for TKN in field duplicate samples, thereby increasing the RPD calculated between two of the field duplicate sample pairs (Table A.5). However, no comparison between TKN in field duplicate samples exceeded the DQO, and lowered and undetectable TKN concentrations are expected to have little effect on the overall interpretation of TKN or other water chemistry results.

A2.7 Data Quality Statement

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



A3 SEDIMENT CHEMISTRY

A3.1 Laboratory Reporting Limits

The analytical reports for sediment chemistry from ALS (see laboratory reports CG2213010, CG2213410, CG2213498, and CG2213501 in Appendix M) were examined to assess LRLs relative to analyte concentrations and applicable guidelines (Table A.7). The LRLs for these analytes were assessed relative to existing British Columbia Working Sediment Quality Guidelines (BCWSQG; BCMOEECS 2021a). Several analytes were reported at concentrations below the LRL in 100% of samples (Table A.7). Although several metals had at least one result below the LRL, all metal LRLs were above the relevant guidelines and were therefore considered appropriate for this study. However, several LRLs for polycyclic aromatic hydrocarbons (PAHs) were below the BCWSQG Interim Sediment Quality Guideline, including 100% of LRLs for acenaphthene, acenaphthylene, anthracene, benzo(a)pyrene, dibenz(a,h)anthracene, fluorene, and phenanthrene (Table A.7). These relatively high LRLs was likely due to a combination of chromatographic interference due to PAH co-elution effects and high moisture content (resulting in low sample volume) in specific sediment samples. Sediment LRLs were overall considered appropriate for this study, and relatively high LRLs for PAHs will be considered during data interpretation. No LRLs for PAHs were above the BCWSQG Probable Effects Limit. Overall, the achieved LRLs were appropriate for this study.

A3.2 Laboratory Blanks

A total of 43 MB samples were analyzed in the ALS laboratory reports (see laboratory reports CG2213010, CG2213410, CG2213498, and CG2213501 in Appendix M). All 550 individual analyte results met the laboratory DQO, indicating no inadvertent contamination of sediment samples during analysis. Therefore, laboratory precision as determined by laboratory blanks was considered excellent.

A3.3 Data Precision

A total of 25 laboratory duplicate samples were used to evaluate precision within the ALS laboratory reports (see laboratory reports CG2213010, CG2213410, CG2213498, and CG2213501 in Appendix M). All 587 individual analyte results met the laboratory DQO. Therefore, ALS laboratory analytical precision was considered excellent.

Four sets of field duplicate samples were collected to assess field sampling precision for sediment chemistry (Table A.8). Several RPDs could not be calculated as both analyte concentrations in the pair were below the LRL. Of the 225 RPDs that could be calculated, only 14 were greater than 30%, included 13 RPDs for particle size measurements and one RPD



for titanium (Table A.8). As this represents only 6.22% of field duplicate comparisons, sediment data was overall considered to have excellent field precision and reproducibility.

A3.4 Data Accuracy

Data accuracy for sediment chemistry analyses completed by ALS was evaluated based on the analysis of 53 LCS samples, six MS samples, and 34 reference material (RM) samples. All 587 LCS, 168 MS, and 334 RM individual analyte results met the laboratory DQO. Therefore, the accuracy achieved by the laboratory was considered excellent.

A3.5 Hold Times

Recommended preparation holding times for polycyclic aromatic hydrocarbons (PAHs) were exceeded by two to three days in 16 samples each (see laboratory reports CG2213501 and CG2213410 in Appendix M). However, the analysis holding time (40 days) was met. The recommended analysis holding time for mercury (28 days) was exceeded by one day in six samples, two days in three samples, and four days in five samples (see laboratory report CG2213498 in Appendix M). These are expected to have minimal impact on the data. However, this will be considered during interpretation of results.

A3.6 Other Comments

Four samples (RG_FOUKI_SE-1_2022-09-13_N, RG_FOUKI_SE-3_2022-09-13_N, RG_SCOUTDS_SE-3_2022-09-14_N, and RG_RIVER_SE-1_LAEMP_FRO_2022-09-18_N) were submitted to ALS with a limited sample volume available for particle size analysis, and therefore the measurement uncertainty for particle size analysis results for these samples may be higher than usual.

A3.7 Data Quality Statement

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



A4 BENTHIC INVERTEBRATE COMMUNITY

A4.1 Sub-Sampling proportions, Precision, and Accuracy

The analytical reports from Cordillera Consulting Inc. (laboratory report in Appendix M) were examined to assess sub-sampling accuracy. For all samples, Canadian Aquatic Biomonitoring Network (CABIN) protocols were followed for sub-sampling (i.e., identification of a minimum 300 invertebrates), with a minimum of 5% of a sample being assessed, except for one sample that had 1% of sample volume assessed. All 61 benthic invertebrate community structure samples were subsampled (Table A.9). Both the precision and accuracy of the sub-samples randomly chosen for sub-sample assessment (n = 6) met the DQO in all sub-samples (20%; Table A.10). Thus, the precision and accuracy for sub-sampling of the benthic invertebrate community samples was considered excellent.

A4.2 Organism Sorting Efficiency

To measure the effectiveness of the sorters, at least 10% of samples were selected at random for resorting analysis by a different sorter (n = 6). Sorting efficiency (i.e., percent recovery) of benthic invertebrate samples was excellent, achieving an average of 98.3% for the six community structure samples evaluated (Table A.11). Therefore, organism sorting efficiency was considered excellent.

A4.3 Taxonomic Identification Accuracy

Cordillera Consulting Inc. performed an internal audit of taxonomic identification for at least 10% of all community structure samples (n = 6; Table A.12). The analysts reported a total identification error rate (TIR) of 0%, a percent difference in enumeration (PDE) of 0.064 to 0.154%, a percent taxonomic disagreement (PTD) of 0.304 to 0.855%, and a Bray Curtis Dissimilarity Index (BCDI [which is a measure of the differences in identifications between different analysts] of 0.002 to 0.007). The laboratory DQO was based on TIR as per CABIN laboratory methods (< 5% TIR; Environment Canada 2014). As TIR was below 5% for all samples examined, the taxonomic accuracy of the analysis was considered excellent.

A4.4 Data Quality Statement

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



A5 BENTHIC INVERTEBRATE TISSUE CHEMISTRY

A5.1 Laboratory Reporting Limits

Analytical reports of benthic invertebrate tissue metal concentrations from TrichAnalytics Inc. (see laboratory reports 2022-359, 2022-403, 2022-449, and 2022-425 in Appendix M) were examined to provide an inventory of analyte results below the LRL and to compare the LRLs for these analytes to available benchmarks (Table A.13). Most analyte concentrations were consistently above detection limits, except for several results for arsenic, lead, mercury, thallium, tin, and uranium (0.36 to 22.1% of results for each analyte). However, all results for selenium were above detection and selenium is the only analyte with an applicable guideline. Therefore, the achieved LRLs were appropriate for this study.

A5.2 Data Accuracy and Precision

Data accuracy and precision were evaluated based on the analysis of 20 CRM samples. No CRM results for titanium could be calculated as the certified concentrations were too close to the reportable detection limit (see laboratory reports 2022-359, 2022-403, 2022-449, and 2022-425 in Appendix M). Of the 580 CRM results that could be calculated for other analytes, all met the laboratory DQO. As titanium is not an analyte of concern in benthic invertebrate tissue in the FRO LAEMP, laboratory accuracy and precision as determined by CRM analyses was overall considered excellent.

Laboratory precision was also evaluated by duplicate analysis of 29 benthic invertebrate tissue samples (see laboratory reports 2022-359, 2022-403, 2022-449, and 2022-425 in Appendix M). Several results that could not be calculated due to values below the detection limit. All 768 duplicate results that could be calculated met the laboratory DQO. Therefore, laboratory precision as determined by duplicate analyses was considered excellent.

A5.3 Data Quality Statement

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



A6 DATA QUALITY REVIEW SUMMARY

Overall, the quality of the data collected for this project was considered acceptable for the derivation of conclusions associated with the objectives of the 2022 FRO LAEMP.



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APPENDIX B

METHODS

APPENDIX B METHODS

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B1 WATER QUALITY

B1.1 Sample Collection

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

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

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

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

B1.2 Laboratory Analysis

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



Table B.1: Water Quality Parameters Required Under Permit 107517^a

Category	Parameters
Field Parameters	water temperature, specific conductance, dissolved oxygen (DO), pH
Conventional Parameters	specific conductance, total dissolved solids, total suspended solids, hardness, alkalinity, dissolved organic carbon, total organic carbon, and turbidity
Major Ions	bromide, fluoride, calcium, chloride, magnesium, potassium, sodium, and sulphate
Nutrients	ammonia, nitrate, nitrite, total Kjeldahl nitrogen (TKN), orthophosphate, and total phosphorus
Total and Dissolved Metals	aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, chromium, cobalt, copper, iron, lead, lithium, manganese, mercury, molybdenum, nickel, selenium, silver, strontium, thallium, tin, titanium, uranium, vanadium, zinc

^a Parameters are consistent with those outlined in Table 27, Appendix 3 of Permit 107517.

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

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

- total organic carbon (TOC) and dissolved organic carbon (DOC; combustion method; American Public Health Association [APHA] 5310 for TOC);
- Total suspended solids (TSS) and total dissolved solids (TDS; gravimetric method; APHA 2540 D and C for TSS and TDS, respectively);
- alkalinity (potentiometric titration; APHA 2320);
- turbidity (nephelometric method; APHA 2130 Turbidity);
- hardness, as CaCO₃ (by calculation; APHA 2340 B);
- total and dissolved metals⁶, (collision cell inductively coupled plasma - mass spectrometry and inductively coupled plasma - optical emission spectrophotometry; APHA 3030 B&E/ Environmental Protection Agency [EPA] SW-846 6020A, and EPA 3005A/6010B, respectively);
- bromide, chloride, fluoride, and sulphate (ion chromatography; APHA 4110 B);
- ammonia, as N (fluorescence; J. Env. Monit., 2005, 7:37-42);
- nitrate and nitrite, as N (ion chromatography; EPA 300.0);
- total Kjeldahl nitrogen (TKN) (fluorescence; APHA 4500-NORG D.);
- orthophosphate and total phosphorus (colourimetric method; APHA 4500-P Phosphorus); and
- DMSeO, MeSe(IV), MeSe(VI), Se(IV), Se(VI), SeCN, SeMet, SeSO₃, unknown Se Sp, total Se and Dissolved Se.

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



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

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

B1.3 Data Analysis

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

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



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

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

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

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



($\alpha = 0.05$) then post-hoc contrasts were conducted to test for pairwise differences among years with an $\alpha = 0.05$ in a Tukey's HSD test which corrects for the number of comparisons.

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

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

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

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

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

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

An estimate of the trend slope over time was estimated by computing the median of all slopes between data pairs within the same month (Helsel and Hirsch 2002). The slope was reported



as a percentage change in concentration per year. The intercept of a line through the time series was estimated as the median intercept of all lines through each point with the estimated slope (Pohlert 2016). The trend analysis was only conducted with a minimum number of 5 pairwise comparisons, the minimum number required for all consecutive increases or decrease to be significant at $\alpha = 0.05$.

Potential temporal changes in constituents with EWTs, nutrients (total phosphorus and orthophosphate) and selenium speciation were also evaluated relative to the commissioning of water treatment in December of 2021. Specifically, a censored analysis of variance (ANOVA) was conducted to compare differences in concentrations between the station immediately upstream (RG_FOBKS) and all stations downstream of water treatment (*Treatment* term), and pre- and post-commissioning (*Before-After* term). A term for year (nested in *BA*; *Year(BA)* term) was also included in the model, as well as, month (*Month*) to control for seasonal effects within a year. The analysis was designed to test for interactions between the *Treatment* and the *Before-After* terms. First the interaction between *Year(BA)* and *BA* was assessed with a significant interaction (p-value < 0.05) suggesting that changes upstream and downstream of treatment are different between the pre-commissioning and post-commissioning periods, but the effect is dependent on which years are compared. In that case, post-hoc tests (Tukey corrected for multiple comparisons) were conducted to determine significant differences between years in the before period versus years in the after period. Where there were significant differences a magnitude of difference (MOD) for each year comparison was calculated as:

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

; where:

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

and the measures of central tendency (MCT) are the estimated marginal means from the full ANOVA model. The MOD captures the change in concentrations at the treated station relative to what was expected given the differences pre-treatment. If the interaction between *Year(BA)* and *BA* was not significant, the *BA x Treatment* term was assessed with a significant interaction (p-value < 0.05) suggesting that changes upstream and downstream of treatment are different between the pre- and post-commissioning periods and this change was consistent across all years. In this case, an overall magnitude of difference was calculated using the formula above, but with MCTs calculated across the pre- and post-commissioning years (i.e., not separately for each year). Testing the significance of the interaction terms is the key



hypothesis of interest in the BACI model as it tests for changes in the relative differences among stations over time. If both interaction terms were not significant it suggested the differences between treated and untreated stations remained consistent pre- and post-commissioning (i.e., there were no BACI effects). Because any effects of treatment are expected to decrease as you move away from the treatment facility a separate model was fit for each downstream station. All analysis was conducted in R (R Core Team, 2021).

A principal components analysis (PCA) is a multivariate approach which transforms a group of 'n' variables into a smaller new set of uncorrelated variables (the principal components; PCs). The principal components are defined to be linear combinations of the original 'n' variables. A PCA was conducted using Kaplan-Meier (KM) mean water chemistry constituents calculated over the year prior to the benthic sampling date. Annual means accounted for seasonality by first defining seasons that were based on changes in water chemistry across a year and designed to capture high and low concentration periods throughout a year. For each year, four seasons were defined: winter (December to March), early spring (May), spring (June) and summer (July). Each season had to have at least one record for an annual concentration to be calculated and used in the PCA. Because a PCA cannot incorporate LRL values, any constituents with >25% of the mean values below the LRL were excluded from the PCA and Kaplan-Meier mean values at the LRL were replaced with the LRL (Farnham et al. 2002). When there was more than one LRL for a given constituent, or detected values were below the highest LRL, these values were replaced with the highest LRL. The contribution of individual constituents to the first two principal components were quantified by calculating their correlation using a Pearson's correlation coefficient. The PCA and correlation analysis were conducted in R (R Core Team 2021).

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

B1.4 Chronic Toxicity Testing

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

- 72-hour growth/inhibition test using a freshwater alga (*Pseudokirchneriella subcapitata*) conducted quarterly using method: EPS1/RM/25; Environment Canada 2007a;



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

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



B2 HYDROLOGY

B2.1 Drying and Stranding Surveys

In 2022, monthly drying surveys were completed (January to April and August to December) to evaluate surface water connectivity (i.e., seasonal drying) along the Fording River and Henretta Creek in the FRO LAEMP study area (Figure 2.2). The drying survey sections in the FRO LAEMP study area are broken down into three sections: the southern survey, the northern survey, and the Henretta Creek survey. The southern survey covers a 12.8 km section of the Fording River from the Chauncey Creek confluence (FR_FRABCH) upstream to the south tailings pond (FR_FR2). The southern survey also includes two side channels of the Fording River that were added in November 2020: Fording River Side Channel 2 and the Greenhouse Side Channel. Stranding surveys also evaluated surface water connectivity each month (i.e., approximately two weeks apart from drying surveys) at the same FRO LAEMP study area locations, except these surveys did not include assessments of the two side channels or the section of the Fording River downstream of FR_FRRD. The northern survey covers a 6.1 km section of the Fording River from the Multiplate culvert (FR_MULTIPATE) to a location on the Fording River upstream of the Henretta Creek confluence (FR_UFR1). The Henretta Creek survey covers a 3.5 km section of Henretta Creek upstream of Henretta Lake (i.e., upstream of FRO licensed water use; Table 2.3; Figure 2.2). Methods followed those used in previous years; field crews walked each section to delineate any extent of drying, isolated pools, fish, and wildlife observations by marking them with a handheld global positioning system (GPS) and on an iPad with geo-referenced map to facilitate mapping (Minnow and Lotic 2019, 2020, 2021a). Drying sections were also recorded as GPS tracks on an iPad to facilitate mapping and estimate the extent of drying.

B2.1.1 Data Analysis

Coordinates (taken by GPS) and tracks collected during the drying surveys were mapped to display the monthly/biweekly conditions and any observed drying sections of the Fording River. The results of monthly surveys were used, in combination with water level logger data and trail cameras, to determine the exact dates when a section of the Fording River had become dry between visits. Dry days for each survey section and hydrometric station were summarized for each year from 2017 to 2022 and were calculated for each low flow season not per calendar year. Dry areas were mapped for each month when drying was observed.



B2.2 Water Levels and Temperature Methods

B2.2.1 Data Collection

Water level and temperature were continuously monitored at 13 hydrometric stations in 2022 using a combination of three types of level loggers, which were installed in stilling wells (Table 2.3; Figure 2.2). The combination of loggers was included for protection against the loss of data in the event of a logger malfunction and included Solinst M5 loggers (primary), Solinst 3250 LevelVent Dataloggers (secondary), and Onset Hobo U-20 level-loggers (tertiary; Table 2.3). The loggers were programmed to record water level and water temperature at 15-minute intervals. Data was downloaded from the loggers pre-freshet in April, post-freshet in July, and October before freeze-up to avoid data loss.

Monthly discharge measurements were collected by field crews at each station using a Hach FH950 velocity meter, where surface flow conditions permitted (i.e., wadable and limited ice cover). Flow measurement methods were consistent with those reported previously (Minnow and Lotic 2018, 2019, 2020, 2021a, 2022), following the Manual of British Columbia Hydrometric Standards (RISC 2009). The Hach FH950 profiler function was used to determine if flow panels exceeded 10% of the discharge in the field to increase hydrological data grading in 2022. During ice covered visits, a transect was cut into the ice by hand or a minimum of five holes were drilled through the ice with an auger to get an estimate for discharge; however, winter flow measurements under ice are unlikely to serve as reliable data points and are for informational purposes only. Ice affected discharge measurements were flagged and were not used in stage-discharge development. One high flow measurement was collected at each site in June 2022 using a Sontek M9 ADP unit to enable flows to be collected without wading and to assist in developing the upper end of each rating curve. Benchmark surveys were completed three times a year at each site before level loggers were downloaded to determine if the stilling well had shifted and to comply with Resources Information Standards Committee (RISC) standards (RISC 2009).

B2.2.2 Data Analysis

Continuous water level data were collected and corrected for barometric pressure from October 2017 to October 2022, where applicable. For each hydrometric station, a log-linear stage-discharge curve was generated using manual stage and discharge measurements. Stage (m) and discharge (m^3/s) values were manually verified and measurements with suspected errors or high uncertainty (e.g., flows conducted under ice conditions) were removed from further analyses. All stage measurements below 0.001 m were treated as 'dry' and were excluded. Benchmarks were checked for each site and shifts were corrected.



The water level record was also verified by comparing to manual measurements, spikes, and other erroneous readings were cleaned. Hourly discharge and stage records were compared against manual observations to calculate the Offset (m), Absolute Error (m^3/s), and the mean Relative Error (Absolute Error divided by Measured Flow; %; Schaefer and Chernos 2022).

Paired stage readings and manual discharge measurements at each site were used to develop site specific power function stage-discharge relationships. The stage discharge relationship was used to convert the continuous water level records recorded at each site into a discharge record. Stage (m) and discharge (m^3/s) values were manually verified and qualitatively determined outliers (relative to the existing relationship) or measurements with high uncertainty (e.g., flows conducted under ice conditions) were removed from the stage-discharge relationship. All stage measurements below 0.001 m were treated as 'dry' and were excluded. A discharge time series (i.e., hydrograph) was plotted for each station. Lotic retained MacDonald Hydrology Consultants for senior review and quality grading of the hydrological data. Grades were assigned for each site following British Columbia Ministry of Environment Hydrological RISC Standards (RISC 2009). A water temperature time series was also plotted for each station.

Changes in temperature and flow from 2017 to 2022 were quantified using seasonal Kendall test using monthly means calculated from 14 data loggers. The analysis tests for monotonic increases or decreases are described in Section B.1.3.

Temporal changes in temperature were also evaluated relative to the commissioning of water treatment in December of 2021. Specifically, the change in the difference of daily mean water temperature upstream and downstream of water treatment ($\text{RG_SCOUTDS} - \text{RG_FOBKS}$) was tabulated and screened against the temperature difference limits (difference of $1\text{ }^\circ\text{C}$) outlined in Study Question #4. The daily differences also varied within years before (2020 and 2021) and after treatment (2022). A non-linear seasonal pattern was observed, however, and thus were statistically compared using a generalized additive model (GAM). Specially, the model included a term for year, a cubic regression smoothing term to account for non-linear changes within a year, and an autoregressive model term (time lag of 1 day) to control for temporal autocorrelation. The predictions and corresponding confidence intervals were used to compare the estimated temperature differences before and after treatment.



B3 SUBSTRATE QUALITY

B3.1 Sediment

B3.1.1 Sample Collection

Sediment quality samples were collected concurrently with benthic invertebrate sampling at eight areas in September 2022 (RG_HENUP, RG_FO26, RG_FOUKI, RG_FOBKS, RG_SCOUTDS, RG_FOBCP, RG_FRUPO, and RG_FO22). Surficial sediment was collected by slowly and carefully placing the spoon on the sediment surface in a manner that minimized disturbance and inserting the spoon into the sediment to capture sediment to a depth of 1 to 2 cm. Samples were collected into glass jars for analysis of polyaromatic hydrocarbons (PAHs) and into polyethylene bags for analysis of metals, moisture content, and particle size distribution. Five sediment samples were collected at each mine-exposed area and three samples were collected in each reference area, consistent with the previous RAEMP cycle (Minnow 2020). Duplicate QC samples (split samples) were collected in the field concurrent with sediment chemistry samples at a rate of 10%. Following collection, samples were placed in a refrigerator at approximately 4°C until submitted to a qualified laboratory (ALS Calgary) for analysis.

B3.1.2 Laboratory Analysis

Sediment samples were analyzed by ALS Environmental in Calgary, Alberta. The laboratory thoroughly homogenized each sample prior to analysis. Methods used were consistent with the British Columbia Environmental Laboratory Manual (BCMOECCS 2020), where applicable, and include analyses of physical and chemical parameters (e.g., moisture content, particle size, total organic carbon [TOC], metals and metalloids, and PAHs).

Sediment samples were analyzed for the following constituents:

- Physical tests (moisture and pH);
- particle size and type (clay, grain size curve, silt, sand, gravel);
- Inorganic carbon, total carbon, total organic carbon, inorganic carbon (IC; as CaCO₃ equivalent);
- metals (aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, lithium, magnesium, manganese, mercury, molybdenum, nickel, phosphorus, potassium, selenium, silver, sodium, strontium, sulfur, thallium, tin, titanium, tungsten, uranium, vanadium, zinc, zirconium);



- polycyclic aromatic hydrocarbons (acenaphthene, acenaphthylene, acridine, anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(b+j)fluoranthene, benzo(b+j+k)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, methyl-naphthalene, 1+2-, methyl-naphthalene, 1-, methyl-naphthalene, 2-, naphthalene, phenanthrene, pyrene, quinoline, B(a)P total potency equivalents [B(a)P TPE], IACR (CCME), IACR AB (coarse), IACR AB (fine), PAHs, total (BC Sched 3.4), PAHs, total (EPA 16); *not all projects measure polycyclic aromatic hydrocarbons* and
- polycyclic aromatic hydrocarbons surrogates (acridine-d9, chrysene-d12, naphthalene-d8, phenanthrene-d10). *Not all projects measure polycyclic aromatic hydrocarbons.*

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

Sediment samples were analyzed using the following methods:

- Moisture content was determined gravimetrically by drying the sample at 105°C;
- particle size distribution was determined by dry sieving (coarse particles), wet sieving (sand), and the pipette sedimentation method (fine particles);
- metals by Collision Reaction Cell Inductively Coupled Plasma-Mass Spectrometry (CRC ICP-MS; EPA 200.2/6020A);
- mercury by Cold Vapour Atomic Fluorescence Spectroscopy (CVAFS; EPA 200.2/245.7);
- TOC by combustion method (Carter and Gregorich 2008); and
- PAHs by rotary extraction using hexane/acetone (EPA 3570/8270) followed by capillary column gas chromatography with mass spectrometric detection (GC/MS).

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

B3.1.3 Data Analysis

Sediment quality data were tabulated, summarized, and compared to British Columbia Working Sediment Quality Guidelines (WSQGs), except for selenium concentrations which were compared to an alert concentration considered equivalent to an upper WSQG



(BCMOECCS 2019, 2021a). The sediment data were also compared to reference area normal ranges, which were the 2.5th and 97.5th percentiles of pooled reference area distribution after removal of outliers (Minnow 2021b). Normal ranges could not be calculated for several PAHs because most of the values were below laboratory reporting limits (LRL). Data from 2017 to 2021 were plotted for all constituents for which a WSQG was available and visually assessed for temporal changes.

Temporal changes in sediment chemistry were evaluated relative to the commissioning of water treatment in December of 2021. Specifically, a censored analysis of variance (ANOVA) was conducted to compare differences in selenium concentrations between the station immediately upstream (RG_FOBKS) and all stations downstream of water treatment (*Treatment* term), and pre- and post-commissioning (*Before-After* term). A term for year (nested in *BA*; *Year(BA)* term) was also included in the model. The analysis was designed to test for interactions between the *Treatment* and the *Before-After* terms. First the interaction between *Year(BA)* and *BA* was assessed with a significant interaction (p-value < 0.05) suggesting that changes upstream and downstream of treatment are different between the pre-commissioning and post-commissioning periods, but the effect is dependent on which years are compared. In that case, post-hoc tests (Tukey corrected for multiple comparisons) were conducted to determine significant differences between years in the before period versus years in the after period. Where there were significant differences a magnitude of difference (MOD) for each year comparison was calculated as:

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

; where:

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

and the measures of central tendency (MCT) are the estimated marginal means from the full ANOVA model. The MOD captures the change in concentrations at the treated station relative to what was expected given the differences pre-treatment. If the interaction between *Year(BA)* and *BA* was not significant, the *BA x Treatment* term was assessed with a significant interaction (p-value < 0.05) suggesting that changes upstream and downstream of treatment are different between the pre- and post-commissioning periods and this change was consistent across all years. In this case, an overall magnitude of difference was calculated using the formula above, but with MCTs calculated across the pre- and post-commissioning years (i.e., not separately for each year). Testing the significance of the interaction terms is the key hypothesis of interest in the BACI model as it tests for changes in the relative differences among stations over time.



If both interaction terms were not significant it suggested the differences between treated and untreated stations remained consistent pre- and post-commissioning (i.e., there were no BACI effects). Because any effects of treatment are expected to decrease as you move away from the treatment facility a separate model was fit for each downstream station. All analysis was conducted in R (R Core Team, 2022).

The BACI magnitude of difference (MOD) results were visualized using a heatmap, with colours corresponding to the overall MOD averaged across all years with cells identified as having a significant BACI effect. In order to visualize the similarities among MODs between analytes, the axes show hierarchical clustering diagrams using unweighted paired group mean method with arithmetic mean.

B3.2 Calcite

B3.2.1 Calcite Measurement

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

B3.2.2 Data Analysis

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

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



Where:

CI or CI' = *Calcite Index*¹

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

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

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

Calcite data collected as part of the Regional Calcite Monitoring Program (Lotic 2022) were reported but were not used in analyses as the calcite measurements taken concurrently with biological sampling were deemed more appropriate because they are representative of the areas sampled for benthic invertebrates (i.e., riffles).

¹ CI refers to the binary assessment of C_p and CI' refers to the proportional assessment of C_p' .



B4 BENTHIC INVERTEBRATES

B4.1 Overview

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

Benthic invertebrate samples were collected to address study questions related to community structure (as determined via CABIN sampling; Section B4.2), productivity (as determined via Hess sampling; Section B4.3), and invertebrate tissue accumulation of selenium (Section B4.4). Consistent with other LAEMPs and the RAEMP (Minnow 2021a,b, Minnow and Lotic 2021b), benthic invertebrate community and productivity sampling was completed in September; however, benthic invertebrate tissue sampling occurred in June, September, and December. Individual water samples for routine water quality analysis and selenium speciation analysis were collected from each monitoring area during each sampling event, concurrently with the collection of biological samples.

B4.2 Community Structure

B4.2.1 Sample Collection – Canadian Aquatic Biomonitoring Network (CABIN)

Benthic invertebrate community sampling followed the CABIN protocol, which involved a 3-minute travelling kick into a net with a triangular aperture measuring 36 cm per side and a mesh having 400-µm openings (Environment Canada 2012a). During sampling, the field technician moved across the stream channel (from bank to bank, depending on stream depth and width) in an upstream direction. With the net held immediately downstream of the technician's feet, the detritus and invertebrates disturbed from the substrate passively collected in the kick-net by the stream current. After three minutes of sampling time, the sampler returned to the stream bank with the sample. The kick-net was rinsed with water to move debris and invertebrates into the collection cup at the bottom of the net. The collection cup was then removed, and the contents poured into a labelled plastic jar and preserved to a concentration of 10% buffered formalin solution in water.



B4.2.2 Laboratory Analysis

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

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

B4.2.3 Supporting Measures

Consistent with the requirements of the CABIN sampling protocol, supporting habitat information (i.e., water velocity and depth, *in situ* water quality [temperature, dissolved oxygen [DO], conductivity, pH], and substrate characteristics [Wolman 100-pebble count and substrate embeddedness]) were collected concurrently with BIC sampled in riffle habitats (Environment Canada 2012a). Periphyton scores (n=3 at all monitoring areas except RG_FOBCP and RG_FO22 which both had n=5) were also ascribed to each biological monitoring area during September sampling, and according to CABIN sampling protocol (Environment Canada 2012a, Minnow and Lotic 2021b). The scoring was ascribed as follows:

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



B4.2.4 Data Analysis

To address the investigation into the changes in BIC structure, endpoints of total sample abundance, richness (LPL taxonomy), percent (%) and total abundance of Chironomidae, EPT, Ephemeroptera, Plecoptera, and Trichoptera individually, and total abundance of key Ephemeroptera families (Baetidae, Heptageniidae, Ephemerellidae) were plotted spatially and temporally. Autotrophic to Heterotrophic Index, Shredder Index, Filtering to Collector Index, Predator Index, and Hyporheic to Benthic Index (Table B.2) were also computed for each biological monitoring area from CABIN kick samples and using the following equations:

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

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

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

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

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

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

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



Table B.2: Benthic Invertebrate Community Index Descriptions, FRO LAEMP, 2022

Index	Description
Autotrophic to Heterotrophic Index	Reflects the ratio of energy use by the benthic invertebrate community (BIC) as primary productivity within the stream from algae growth to heterotrophic energy sources (e.g., leaves and sticks).
Shredder Index	Reflects the ratio of coarse particulate organic matter (CPOM) to fine particulate matter (FPOM) used by BIC.
Filtering Collector Index	Reflects the ratio of suspended Fine Particular Organic Matter (FPOM) to depositional FPOM used by the BIC.
Predator Index	Reflects the abundance of predators.
Benthic to Hyporheic Index	Reflects the ratio of habitats used by BIC, reflects sediment stability and flow permanence.

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

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

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

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

Temporal changes in BIC endpoints were also evaluated relative to the commissioning of water treatment in December of 2021. Specifically, an Analysis of Variance (ANOVA) was conducted to compare differences in endpoints between the station immediately upstream (RG_FOBKS) and all stations downstream of water treatment (*Treatment* term), and pre- and post-commissioning (*Before-After* term). A term for year (nested in *BA*; *Year(BA)* term) was also included in the model. The analysis was designed to test for interactions between the *Treatment* and the *Before-After* terms. First the interaction between *Year(BA)* and *BA* was assessed with a significant interaction (p-value < 0.05) suggesting that changes upstream and downstream of treatment are different between the pre-commissioning and post-commissioning periods, but the effect is dependent on which years are compared. In that case, post-hoc tests (Tukey corrected for multiple comparisons) were conducted to determine significant differences between years in the before period versus years in the after period. Where there were significant differences a magnitude of difference (MOD) for each year comparison was calculated as:

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



where the measures of central tendency (MCT) are the estimated marginal means from the full ANOVA model. The MOD captures the change in the difference between treated and untreated stations before and after treatment relative to the variability within a station in a given year. If the interaction between *Year(BA)* and *BA* was not significant, the *BA x Treatment* term was assessed with a significant interaction ($p\text{-value} < 0.05$) suggesting that changes upstream and downstream of treatment are different between the pre- and post-commissioning periods and this change was consistent across all years. In this case, an overall magnitude of difference was calculated using the formula above, but with MCTs calculated across the pre- and post-commissioning years (i.e., not separately for each year). Testing the significance of the interaction terms is the key hypothesis of interest in the BACI model as it tests for changes in the relative differences among stations over time. If both interaction terms were not significant it suggested the differences between treated and untreated stations remained consistent pre- and post-commissioning (i.e., there were no BACI effects). Because any effects of treatment are expected to decrease as you move away from the treatment facility a separate model was fit for each downstream station. All analysis was conducted in R (R Core Team, 2021).

B4.3 Biomass and Density (HESS)

B4.3.1 Sample Collection

Samples for analysis of benthic invertebrate density and biomass were collected using a Hess sampler (0.1 m² sampling area) with 500 µm mesh. Ten replicate stations were sampled at each of twelve biological monitoring areas (mine exposed: RG_FOUCL, RG_FOUNGD, RG_FOUKI, RG_FOBKS, RG_SCOUTDS, RG_FOBSC, RG_FOBCP, RG_FRCP1SW, RG_FRUPO, and RG_FO22; reference: RG_FO26, RG_HENUP) in September 2022 for analysis of benthic invertebrate biomass and density (Table 2.1; Figure 2.1). Stations were located a minimum of 5 m apart to represent the overall area.

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



B4.3.2 Laboratory Analysis

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

B4.3.3 Data Analysis

Laboratory data for benthic invertebrate biomass and density samples were converted to units of number of organisms per square meter (org/m²) based on the known area sampled. Biomass and density data from 2017 to 2022 were plotted and changes were visually compared to assess spatial and temporal patterns pre-commissioning of the FRO-S AWTF. Biomass and density data from 2022 were also plotted spatially to compared upstream to downstream patterns in the study area.

Temporal changes in benthic invertebrate biomass and density were also evaluated relative to the commissioning of water treatment in December of 2021 using the same approach as described for the BIC endpoints calculated using CABIN kick samples (see Section B.4.2.4 above).

B4.4 Benthic Invertebrate Tissue

B4.4.1 Sample Collection

Benthic invertebrate samples were collected for tissue chemistry using the kick and sweep sampling method described in section B4.2.1, except that sample collection was not timed. Samples were a composite of representative benthic invertebrate taxa in each sampling area. For each sample, clean tweezers were used to pick invertebrates from the debris until about 1 to 2 g wet weight (ww) was obtained. A photo was taken of each sample, and the dominant taxa added to the sample was recorded. Once sufficient tissue was picked from the debris, the sample was placed in a labelled vial and stored in a cooler with ice packs until it could be transferred to a freezer at the end of the day. Tissue samples were stored in a freezer and shipped frozen.

Upon collection of the sample using the kick and sweep sampling method at each replicate station, organisms were carefully removed from sample debris using tweezers until about 0.5 g of wet tissue was obtained. Field crews paid particular attention to proportions of annelids in kick and sweep collections, as these organisms have been known to hyperaccumulate some



metals resulting in potentially biased results (Golder 2021). If annelids occurred at a proportion greater than 5% of the total sample biomass at a given replicate station, then these organisms were included in the composite sample (at that same proportion). Additionally in this scenario, a separate 'annelid only' sample was collected for analysis from the replicate station. If the proportion of annelids represented less than 5% of the sample biomass for a given station, these organisms were not included in the composite-taxa sample.

B4.4.2 Laboratory Analysis

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

B4.4.3 Data Analysis

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

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



- the Level 3 EVWQP benchmarks for effects to invertebrates (27 milligrams/kilogram [mg/kg] dry weight [dw]), dietary effects to birds (41 mg/kg dw), and dietary effects to juvenile fish (26 mg/kg dw; Golder 2014).

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

Temporal changes in benthic invertebrate tissue selenium concentrations were evaluated relative to the commissioning of water treatment in December of 2021. Specifically, an analysis of variance (ANOVA) was conducted to compare differences in selenium concentrations between the station immediately upstream (RG_FOBKS) and all stations downstream of water treatment (*Treatment* term), and pre- and post-commissioning (*Before-After* term). A term for month (within a year and nested in BA; *Time Group(BA)* term) was also included in the model. The analysis was designed to test for interactions between the *Treatment* and the *Before-After* terms. First the interaction between *Time Group(BA)* and *BA* was assessed with a significant interaction (p-value < 0.05) suggesting that changes upstream and downstream of treatment are different between the pre-commissioning and post-commissioning periods, but the effect is dependent on which time groups are compared. In that case, post-hoc tests (Tukey corrected for multiple comparisons) were conducted to determine significant differences between time groups in the before period versus the after period. Where there were significant differences a magnitude of difference (MOD) was calculated as:

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

where:

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

and the measures of central tendency (MCT) are the estimated marginal means from the full ANOVA model. The MOD captures the change in concentrations at the treated station relative to what was expected given the differences pre-treatment. If the interaction between *Time Group* and *BA* was not significant, the *BA x Treatment* term was assessed with a significant interaction (p-value < 0.05) suggesting that changes upstream and downstream of treatment are different between the pre-commissioning and post-commissioning periods and this change was consistent across all time groups. In this case, an overall magnitude of difference was calculated using the formula above, but with MCTs calculated across the pre- and



post-commissioning periods (i.e., not separately for each Time Group). Testing the significance of the interaction terms is the key hypothesis of interest in the BACI model as it tests for changes in the relative differences among stations over time. If both interaction terms were not significant it suggested the differences between treated and untreated stations remained consistent pre- and post-commissioning (i.e., there were no BACI effects). Because any effects of treatment are expected to decrease as you move away from the treatment facility a separate model was fit for each downstream station. All analysis was conducted in R (R Core Team, 2021).



B5 HENRETTA LAKE

B5.1 Bathymetry

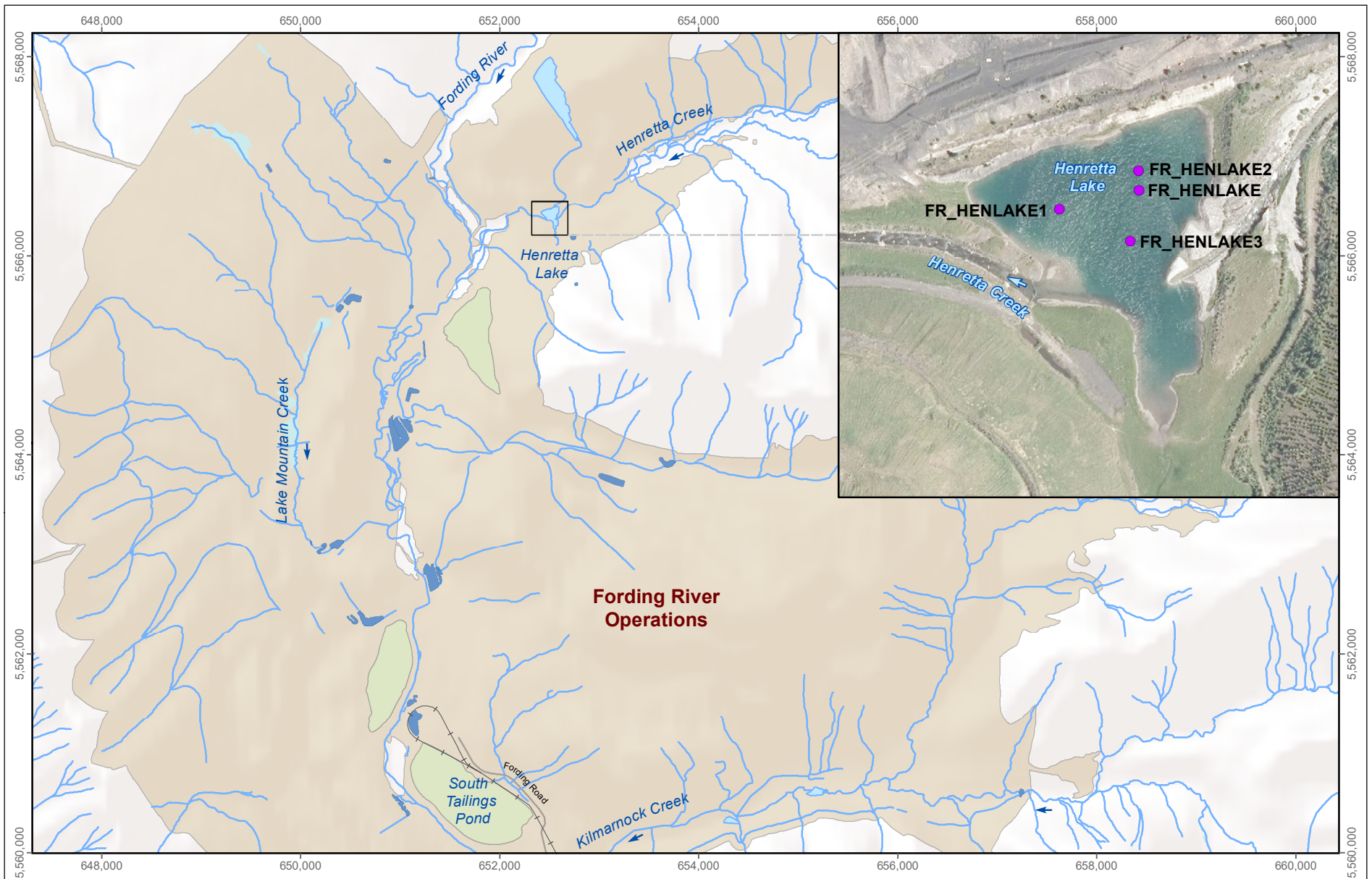
Teck conducted a bathymetry survey of Henretta Lake in November 2022 to improve the spatial understanding of water depths within the lake. Henretta Lake volumes were calculated using ESRI's ArcGIS Spatial Analyst extension at depth intervals of 0.5 m based on a bathymetric raster provided by Teck. Total volumes for each 0.5 m interval and the percentage of each interval out of the total lake volume were calculated. Lake volumes were also calculated at 1.25 m intervals to align with the *in situ* data logger installation (as described in Section B.5.3).

B5.2 Water Chemistry and Temperature-Oxygen Dynamics

Data collection for water chemistry (metals, nutrient, major ions, and selenium speciation) and *in situ* measures of physical parameters (temperature, dissolved oxygen, conductivity, and pH) occurred in various frequencies and sampling locations between 2016 and 2022 (summarized in Minnow 2022). In brief, *in situ* water profiles were typically collected during the winter (February in 2016, 2020, and 2021, and January, February, and March in 2022), from 8 to 11 sampling locations. To confirm that the sampling location HENLAKE3 (the current location of the *in situ* logger installment) was representative of lake-wide conditions, the variability between *in situ* measures were calculated at each location, and at each sampling depth.

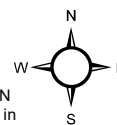
Water chemistry samples were collected in February and March of 2021 and in February, June, and October of 2022. Water samples were analyzed for metals, nutrients, and major ions from three depths within the water column (1.0 m, 3.5 m, and 7.5 m). Sampling occurred at one location in 2021 (FR_HENLAKE), and three locations in 2022 (FR_HENLAKE1, FR_HENLAKE2, FR_HENLAKE3; Figure B.1). Methodology associated with the 2022 water chemistry samples is summarized in Arnett, 2023 (Appendix N). Water samples collected for selenium speciation analysis were collected from one location within Henretta Lake (FR_HENLAKE in 2021 and FR_HENLAKE3 in 2022), also from 1.0 m, 3.5 m, and 7.5 m depth. Water quality data collected between February 2021 and June 2022 are summarized in the Summary of Henretta Lake Temperature-Oxygen Data Report (Minnow 2022; Appendix N). However, water chemistry results from October 2022 were not available at the time of reporting. The results section, therefore, provides a summary of the available water chemistry data collected from Henretta Lake (including data from October 2022).





LEGEND

- Water Monitoring Station
- Settling Pond
- Tailings Pond
- Teck Coal Mine Operation



Projection: North American Datum 1983 UTM Zone 11 N
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Henretta Lake Water Monitoring Stations

Date May 2023
 Project 227202.0022



Figure B.1

Following ice out in 2022, a vertical chain of HOBO data loggers was installed to collect measures of temperature, oxygen, and conductivity at 6 depths in the water column (1.25 m, 2.5 m, 3.75 m, 5.0 m, 6.25 m, and 7.5 m). The loggers were deployed in May 2022 with the first data download occurring at the end of June 2022. Additional data downloads occurred at the end of August, September, and October 2022 (summarized in Appendix N). On November 4, 2022, a sub-surface vertical chain of *in situ* loggers was deployed for the duration of the winter (the next time data will be retrieved from the deployment will be after ice-off in 2023).

B5.3 Habitat Availability Assessment

As assessment of habitat availability was conducted using the continuous logger data and WCT-specific criteria for dissolved oxygen. Habitat classifications were based solely on criteria for dissolved oxygen because the maximum summer temperature in Henretta Lake was 10.08 °C, and thus always below the WCT lethal limit of 25.0 °C identified for the Upper Fording River (Macnaughton et al. 2021). The continuous logger data and the updated bathymetric volumes for each 1.25 m strata (i.e., volume between loggers) was used to calculate the proportion of lake volume that would be classified as low, medium, and high risk to WCT. The habitat classifications were defined as:

- Oxygenated habitat with low to no risk to WCT: DO concentrations > 8 mg/L (above the chronic dissolved oxygen WQL for the protection of aquatic life; BC MOE 1997);
- Oxygenated habitat with medium to low risk to WCT: DO concentration > 5 mg/L and < 8 mg/L; and
- Oxygenated habitat with high risk to WCT: < 5 mg/L (below the acute critical threshold for the protection of aquatic life; BC MOE 1997).

The total lake volume was divided into horizontal strata based on logger deployment depths and daily mean DO concentrations were screened against the criteria above. Dissolved oxygen was assumed to be constant between 1.25 m depths. No data logger was deployed at the maximum lake depth, and thus the maximum volume of the lake was calculated based on a depth of 7.5 m (i.e., the deepest logger depth).



B6 FISH

B6.1 RAEMP Sample Collection

Non-lethal sampling of mature WCT tissue for muscle selenium concentrations is required under the RAEMP once per monitoring cycle (Minnow 2021a); however, one WCT had high muscle selenium concentrations at the Multiplate Culvert (RG_MP1) in September 2021, prompting confirmatory sampling (n=8) as part of the AMP response framework at this location in September 2022. Westslope cutthroat trout tissue sampling (n=5) was also conducted in Henretta Lake in September 2022 as part of the RAEMP lentic study. Previous (2018 and 2021) WCT muscle sampling occurred around RG_FODGH², RG_FOBCP³, and RG_MP1⁴ for monitoring water quality under Permit 107517, and at two reference areas (Bull River, Flathead River), in accordance with the approved RAEMP study design (n=8 per area; Minnow 2021a). In addition to fish sampling under the RAEMP, Teck collects tissue (dorsal muscle and whole body) samples from WCT incidental mortalities and fish salvages when relevant, to add valuable information to the dataset on fish selenium concentrations.

Sampling methods followed those outlined in the RAEMP study design (Minnow 2021a). Upon capture, fish were anesthetized using clove oil prior to processing. Measures of body weight were collected using appropriately sized spring scales (e.g., 100 g, 500 g, 1,000 g), and total and fork lengths were recorded using a measuring board equipped with a meter stick (± 1 mm). All fish were inspected for any external anomalies such as deformities, erosions (fin and gill), lesions, tumors, injuries, infections and/or parasites during processing and representative photographs were collected (Minnow 2021a). A biopsy punch was used to collect a non-lethal muscle sample from each fish, and VetbondTM tissue adhesive was used to seal the wound and prevent infection. Skin was removed from each muscle sample using a scalpel and the remaining tissue was placed into a sterile microcentrifuge tube. Samples were stored on ice in the field and transferred to a freezer later in the day. Tissue samples were kept in a freezer until they were transported overnight in coolers with ice packs to an accredited laboratory.

² Fording River between Chauncey Creek and Greenhills Creek.

³ Monitoring area RG_FOBCP is associated with Teck's water quality station FR_FRCP1. At the time, the 2021 to 2023 RAEMP study design was submitted (February 2021), FR_FRCP1 was the Compliance point for FRO; this was changed to FR_FRABCH later in 2021.

⁴ As sampling success is dependent on where fish are located, WCT associated with RG_FOBCP were caught further upstream at sampling area RG_MP1 (located downstream of the Multiplate culvert) but are still considered representative of fish from the area.



B6.2 Laboratory Analysis

Fish tissue samples were kept in a freezer until they were shipped in coolers on ice to TrichAnalytics Inc. (Trich) in Saanichton, BC. At the laboratory, samples were freeze-dried and analyzed for metals (including selenium) using laser ablation inductively coupled plasma spectrometry (LA-ICPMS). Results were reported on a dry weight (dw) basis, along with moisture content (based on the difference between wet and freeze-dried sample weights).

B6.3 Data Analysis

For the purposes of the FRO LAEMP report, muscle selenium concentrations of WCT from RAEMP fish sampling in the upper Fording River in 2022 were plotted with data from 2021 and 2018 (where available), reference area data, and in comparison, to the applicable site-specific muscle benchmark (15.5 mg/kg dw; muscle equivalent site-specific benchmark; Nautilus and Interior Reforestation 2011) and the British Columbia selenium guideline for fish muscle (4 mg/kg dw; BCMOE 2019). Additionally, tissue selenium concentrations from incidental mortality WCT samples were plotted with reference area data, and in comparison to the British Columbia selenium guideline for fish muscle. Corresponding meristics data (total weight, length and fork length) were tabulated along with observations of anomalies and calculated Fulton's condition factor. Fulton's condition factor was calculated as:

$$K = \left(\frac{W}{L^3} \right) \times 100$$

Where W = weigh (g) of the individual fish;

L = fork length (cm) of the individual fish

Condition factor was also plotted for visual comparison among areas.

External anomalies in fish may occur for many reasons, and can often be used as a line of evidence in the assessment of fish health (Sanders et al. 1999). These anomalies can include deformities, erosions, lesions, tumours, injuries, infections, and/or parasites. A number of different anomalies have been observed historically in the Elk Valley and Koochanusa Reservoir. These include spinal curvature (scoliosis, lordosis, kyphosis), deformed or missing fin rays, deformed or missing opercula, tumour-like growths, eye anomalies, hemorrhaging, fin erosions, and parasites. Each fish sampled was assessed for anomalies using the severity scale (Appendix Table B.3) which was designed to guide the sampler through a detailed assessment of the fish (Environment Canada 2012b). Additionally, a photograph was taken of each anomaly. Should an anomaly be present that was not described in the severity scale table, then a thorough description and a detailed photograph was provided by



Table B.3: Suggested Classification of Anomalies

Physical		Developmental/ Exposure	Other
Angling	Other (e.g., predation, injury)		
Tears/punctures around mouth	Torn caudal or pectoral fins	Spinal curvature	Parasites
	Torn/hanging maxilla	Wounds to body caused by predators	
Eye anomalies			Infections (fungus, bacteria, virus)
Eye injuries	Erosion	Lesions/Hemorrhaging	
		Tumours	

the sampler. In a case where the severity of an anomaly was difficult to score, or was uncommon or the type was not discernible, additional photos were taken and the observation was flagged for follow-up with a qualified professional (e.g., fish pathologist).

B6.4 Fish Population Monitoring

In 2022 the Westslope Cutthroat Trout population monitoring program in the upper Fording River continued to implement the standard protocols introduced in 2021 (e.g., more systematic redd surveys as well as single-pass electrofishing at large [~300 m] open sites [Thorley et al 2022a]). The program was further expanded to include increased electrofishing coverage as well as night snorkeling; as an alternative and less invasive method of enumerating juveniles, night-time dip-net surveys; to inform the length distributions of age-0, and Passive Integrated Transponder tagging captured fish; to better understand capture efficiencies, movement, growth, and survival and angling in Henretta Lake to supplement snorkeling data for fish >200 mm, to improve the understanding of WCT use of Henretta Lake (Penman et al. 2022; Thorley et al. 2023a; Thorley et al. 2022b). The expanded monitoring program helps to reduce uncertainty about status and trends of the upper Fording River Cutthroat Trout population as well as to answer key questions to assess the carrying capacity, intrinsic productivity, and viability of the population.

B6.4.1 Redd Surveys

Redd surveys are conducted to count the number of redds, which may contain one or more nests, where fish eggs are deposited. These surveys provide information about the spatial distribution and timing of spawning. Prior to 2021, the number of redds was recorded, but not the number of nests within the redd unless more than one spawning pair was observed (Cope 2020). Field and analytical methods were revised in 2021 to improve the estimates of how many unique nests are present in any given year and to allow for comparisons across years (Smit et al. 2022). Beginning in 2021, all visible nests were counted each week, to provide data suitable for the modelling approach that estimates the total count of unique nests that would have been observed over the whole season using an Area-Under-the-Curve (AUC) model (Hilborn et al. 1999; Su et al. 2001, Thorley et al. 2023a).

In 2022, suitable gravels in areas of historically high spawning were monitored for spawning activity starting in the first week of June. Once spawning was confirmed, surveys were conducted once a week in the key areas until spawning activity was judged to have ceased. The key areas included:



- Segments 1 to 11 of the of the Fording River. This includes mainstem habitat from approximately 25 to 75 km upstream of the confluence with the Elk River, and major side channels
- Chauncey Creek from its mouth to approximately 6 km upstream
- LCO Dry Creek from its mouth to approximately 4.5 km upstream
- Greenhills Creek from its mouth to approximately 3 km upstream (excluding the sedimentation pond)
- Porter Creek – first 400 m

Around peak spawning, surveys also included one survey in each of the following lower priority spawning areas:

- Gardine Creek
- Ewin Creek from its mouth upstream to approximately 7 km upstream
- Todhunter Creek from its mouth upstream to end of suitable habitat or practical access
- Chauncey North Tributary from its mouth upstream to approximately 2.5 km upstream
- Henretta Creek from the Fording River to approximately 9 km, in 2022, 3 km immediately upstream of Henretta Lake were not surveyed.
- Fish Pond Creek

B6.4.2 Electrofishing

The size, densities, and distribution of age-1 and age-2+ (referring to fish from the age of 2 until the development of the adult body form) WCT in the UFR were assessed through backpack electrofishing using removal-depletion electrofishing and single open passes (Thorley et al. 2022a).

Removal-depletion electrofishing used stop nets at three single mesohabitat (pool, riffle, glide or cascade; see Cope et al. 2016 for a description) sites of about 10 to 35 m in length (and 100 m² in wetted area) at 25 different index locations (75 sites total) (Thorley et al. 2023a). Between one and three passes, randomly assigned prior to fieldwork, were conducted at each site to estimate capture efficiency based on the decline in catches. Electrofishing effort (seconds) was recorded at the end of each pass.

Eleven ~300 m long open (without stop-nets) sites were sampled: six in the mainstem Fording River, and one site each in Greenhills, LCO Dry, Ewin, Chauncey, and Henretta creeks



(Thorley et al. 2023a). The starting point for each site was randomly generated prior to the field season. A subset of sites were resampled within 24 hours to calculate capture efficiency from the ratio of recaptured fish with Passive Integrated Transponder (PIT) tags.

Fish processing followed the Teck backpack electrofishing protocol (Thorley et al. 2022a) and the 2022 study design for UFR WCT population monitoring (Thorley et al. 2022c). All captured fish were measured for fork length to the nearest 1 mm, weighed to the nearest 0.1 g, scanned for a PIT tag (if larger than 99 mm), and photographed. The total number of fish observed but not captured was also recorded. A PIT tag was inserted into all uninjured fish ≥ 100 mm in fork length. Fish were inspected for any deformities, erosion, lesions, or tumours (anomalies) and the information was recorded using the new anomaly categories and scale (Ings and Weech 2020). Processed fish were allowed to recover before being released as close to their capture location as possible, preferably near cover and in slow moving water.

The data from the backpack electrofishing data (2013 to 2022) were used to estimate the density of age-1 and age-2+ fish using a hierarchical Bayesian removal model (Wyatt 2002). The model estimated capture efficiency using removal-depletion data from the subset of small, closed sites that received more than one electrofishing pass (Thorley et al. 2023a).

Body condition for age-1 and age-2+ fish was analyzed using weight-length regression. Length and weight data for individuals between 90 and 169 mm were analyzed using an allometric mass-length model to estimate body condition (He et al. 2008; Thorley et al., 2023a; Thorley et al., 2023b). The simplified equation for body condition is:

$$\text{Body Condition} = \frac{W}{(\alpha L^\beta)}$$

Where W = is the weight (g) of the individual fish

α = 6.6×10^{-6} , the expected weight (g) of a 1 mm fish

L = is the length (mm) of the individual fish

β = scaling term of 3.1

The α and β terms were calculated for fish from 90 to 169 mm using UFR monitoring data collected from 2013 to 2022 (Thorley et al. 2023a, Thorley et al 2023b). The model was used to estimate the percent difference in body condition of a fish one subpopulation relative to a typical subpopulation in the UFR, in a typical year (Thorley et al 2023a). Additional details are available in the technical appendix to the UFR WCT population monitoring report (Thorley et al., 2023b).



Length data were also used to identify the sizes of different age classes using the electrofishing (2013 to 2022) and dip-net survey data (2022). These data were used in the length frequency histograms (reported in Thorley et al. 2023a) and were used to assign length cutoffs by age class and to calculate the mean length-at-age of age-0s.

Recruitment was estimated based on egg to age-1 survival which is measured for a spawning cohort the calendar year after it is spawned. As such, in the 2022 FRO LAEMP we report on the age to age-1 survival for the 2021 spawning cohort. The egg to age-1 survival (Pulkkinen et al. 2013) was calculated by dividing the estimate of the age-1 individuals by the total egg deposition the previous year. The total annual egg deposition was calculated from the fecundity (eggs per female; see Thorley et al. 2023a) and the estimate of the (sub)adults assuming a 1:1 sex ratio and repeat spawning every other year (Liknes and Graham 1998). For a population to be stable each spawner must on average replace itself with another spawner over its lifetime. The egg-to-age-1 survival required for population replacement was estimated by Thorley et al. (2023a) based on a modification from Ma and Thompson (2021).

B6.4.3 Snorkeling

Subadult and adult WCT numbers were assessed using downstream snorkel surveys during daylight hours. In 2022 the surveys were initiated on August 29th and continued until September 5th. Snorkel surveys were conducted using section boundaries as start and end locations for 16 river segments (see Cope et al. 2016 for a detailed description). These include 11 mainstem upper Fording River sections plus three sections in Henretta Creek, including Henretta Lake and one section in Fish Pond Creek and one section in Fish Pond Tributary. Prior to 2022 Fish Pond Creek and Tributary were considered one section.

Upstream snorkel surveys enumerated small fish (age-1 and age-2+) in shallow habitats at night in late summer to early fall. Upstream snorkel surveys cover more habitat in shorter period of time compared to electrofishing because fish are not captured or processed and can sample deeper habitats, such as pools, more effectively. Surveys were conducted at seven of the large, open electrofishing sites, to compare densities of fish by life stage between the two methods. These included five segments from the UFR mainstem, the lower section of Henretta Creek downstream of Henretta Lake and the lower section of Chauncey Creek downstream of the culvert. These data were used to supplement density data from electrofishing.

B6.4.4 Angling

Three angling surveys were conducted in Henretta Lake on September 29, October 6, and October 13, 2022 as reported in Penman et al. (2022). One week was allowed between



surveys to allow captured fish to recover and mix. For the survey Henretta Lake was stratified into seven shore sections and two boat sections. Sections were divided into sub-sections to ensure that there was no overlap between anglers. There were two angling sessions each day during which each angler was allotted a two-hour session in a sub-section. Anglers were allowed to switch between spin rods and fly fishing gear. Only one hook was allowed per angler at a time and all hooks had to be a single barbed or barbless hook to reduce the risks to WCT. The duration of time using each method was documented for each angler during each survey block. Data collected for each fish included the angler, method, and estimated capture depth. Any missed WCT (hooked but not landed) were also recorded (albeit inconsistently).

Three fish processing stations were set up to process WCT and were distributed evenly around the sections to reduce transfer and handling time for WCT. During the fish processing, WCT were first scanned for PIT tags and if none were present and the individual was longer than 100 mm, one was inserted into the muscle near the dorsal fin. Fork length (mm) and weight (g) were measured prior to insertion of the PIT tag. Fish were inspected for any deformities, erosion, lesions, or tumours (anomalies), which were recorded using the body location categories and severity scale. If a fish was recovering poorly, it was either returned to the lake immediately without being processed, or monitored prior to release in a submerged, dark recovery container with holes to allow for regular transfer of lake water.

Catch per unit effort (CPUE) was calculated as the number of fish caught / angling hours. Morphometrics of recaptured WCT were averaged across captures. Anomaly scores from recaptured fish were also removed from the summary tables (as to not over-inflate the categories).

B6.4.5 Dip Net Surveys

To supplement electrofishing data, night-time dip-net surveys were conducted in the Upper Fording River for the first time in 2022. Data from these surveys provides information about length-at-age, and some limited information on spatial distribution (occupancy, not relative density) of age-0 as well as age-1 fish. Dip-net surveys are conducted by a team of two observers walking the stream margins searching for fish less than 100 mm in length. Surveys were conducted between October 12 and 30, 2022 when fry emergence was complete (Thorley et al 2023a).

Surveys occurred in each of the following 11 sections in the mainstem or key tributaries with suitable habitat for age-0 fish where redds had been constructed.

- Segment 6 of the upper Fording River



- Segment 8 of the upper Fording River
- Section 10/11 of the upper Fording River
- Henretta Creek between the mouth and Henretta Lake
- Henretta Creek upstream of lake and area of mine influence
- Chauncey Creek between road culverts at 0.6 km and 5 km
- LCO Dry Creek in the lower 1 km
- Greenhills Creek below the barrier
- Greenhills Creek above the barrier
- Ewin Creek
- Todhunter Creek



B7 INTEGRATED ANALYSIS

Correlations analysis and CCAs were used to understand how physical and chemical factors may contribute to variations in benthic invertebrate community structure within the FRO LAEMP study area. These analyses were conducted on data across the full study area, and then three individual study areas (upper, middle, and lower) within the full study area. In addition to analysis of the full study area, the three individual study areas were analyzed separately to help tease apart covariation of habitat and water quality factors observed in previous analyses across the full study area (i.e., habitat and water quality factors change simultaneously across the full study area but may not change simultaneously within individual study areas). The upper, middle, and lower Study Areas were grouped based on spatial differences of habitat (water depth, water flow/velocity, water temperature, substrate size, etc.) and water quality identified in previous FRO LAEMP reports (Minnow and Lotic 2019, 2020, 2021b, 2022). The upper study area ranges from downstream of the Henretta Creek confluence with the Fording River (RG_FODHE) to upstream of the South Tailings Pond (RG_FOUSH), the middle study area ranges from downstream of the South Tailings Pond (RG_FOUKI) to the area upstream of the Greenhouse Side Channel (RG_FRCP1SW), and the lower study area ranges from upstream of the Porter Creek confluence with the Fording River (RG_FRUPO) to upstream of Ewin Creek (RG_FOU EW; Figure 2.1).

To determine how physical and chemical characteristics relate to patterns in BIC, Spearman Rank Correlations were conducted between abundance, richness, percent (%) and total abundance of Ephemeroptera, Plecoptera and Trichoptera individually, EPT combined, Chironomidae, and the residuals from the site-specific normal range model for total abundance, richness, percent and total abundance of EPT and Ephemeroptera, and the habitat and feeding indices (Appendix Table B.2) against a variety of physical and chemical parameters (Appendix Table H.1). Correlations were conducted on data across the full study area, and then three individual study areas (upper, middle, and lower) within the Full Study Area. For water chemistry constituents, annual mean concentrations were calculated for different seasons and then averaged across the year prior to the benthic sampling date. Seasons were defined based on changes in water chemistry across a year and designed to capture high and low concentration periods throughout a year. For each year, four seasons were defined: winter (December to March), early spring (May), spring (June) and summer (July). Each season had to have at least one record. Significant correlations were assessed at $\alpha = 0.05$, Bonferroni corrected for 38 independent comparisons (corrected $\alpha = 0.05/38 = 0.00132$). Water chemistry constituents were also analyzed by PCA (Appendix Table H.3) to combine multiple water quality variables into PC1 and PC2 and



included in the correlation analysis. To ensure correlations were comparable among different constituents, only complete records (i.e., a value for every water and BIC endpoint) were included in the analysis. Correlation results were visualized using a heatmap, with colours corresponding to the strengths of the correlation (as measured by the Spearman Rho and varies from -1 to +1). In order to visualize the similarities among correlations between BIC endpoints and physical and chemical characteristics, the axes show hierarchical clustering diagrams using unweighted paired group mean method with arithmetic mean.

A Canonical Correspondence Analysis (CCA) was performed to investigate patterns in BIC in September of 2018 to 2022 relative to habitat (Appendix Table B.4) and stressor variables. The analyses were conducted separately across the Full Study Area and three individual study areas. Lowest Practical Level benthic invertebrate abundances were $\ln(x+1)$ transformed to reduce the effects of the most dominant taxa in order to better understand differences between sites that vary greatly in abundance. Taxa present at fewer than 10% of samples, and those that accounted for less than 1% of the total abundance in the dataset were excluded from the analysis. The CCA constrained CA axes by a suite of predictor variables by applying a multivariate multiple regression to the CA axis. This resulted in a set of new CCA axis that were linear combinations of the predictor variables (i.e., habitat or stressor) that explained a subset of variation of the original CA. Partial CCA (pCCA) was further used to account for the effects of one set of predictors before constraining on a second set (i.e., the variation in one set of predictors was conditioned out of the response, before applying a second set of predictors to the residuals of the first; Legendre and Legendre 2012). The significance of each predictor was evaluated using a permutation-based ANOVA with 10,000 permutations, and the relative importance of individual predictors assessed using the associated pseudo F-statistic (Legendre et al. 2011). Limitations in available data (e.g., field habitat, water quality) resulted in only a subset of sites that had all necessary input data and could therefore be included in the CCA (Appendix Table B.5). The spatial and temporal coverage was enough to provide a general overview of the patterns exhibited by BIC.

Variables were selected for inclusion in the CCA model using a combination of best professional judgement and backwards variable elimination method with permutation-based ANOVA. The Variance Inflation Factor (VIF) of the final variables were all below 20 indicating the variable coefficients were not inflated by the presence of correlation among explanatory variables (i.e., no multicollinearity). For water quality variables, only concurrent water data was included, and only constituents with fewer than 20% of observations below the detection limit were considered. Winter and Summer water temperature summaries from correlation analysis were also included in the CCA analysis. The multivariate multiple



Table B.4: Summary of Habitat Variables Used in Canonical Correspondence Analysis of Benthic Invertebrate Community, FRO LAEMP, 2022

Variable Source	Habitat Variables
Stream Characteristics	Mean Depth
	Bankfull Width
	Mean Velocity
Substrate	Embeddedness
	D16
	D84
GIS	% Watershed greater than 30% slope
	Station Gradient
	Watershed Area

Table B.5: Summary of Locations with Complete Datasets for Canonical Correspondence Analysis, FRO LAEMP, 2022

Biological Monitoring Area	2018	2019	2020	2021	2022
RG_HENUP	✓	✓	✓	✓	✓
RG_FO26	✓	✓	✓	✓	✓
RG_UFR1	x	x	x	x	x
RG_FODHE	✓	✓	✓	✓	✓
RG_FOUCL	x	x	x	x	x
RG_FOUNGD	x	x	x	x	x
RG_FODNGD	x	x	x	x	✓
RG_MP1	✓	x	✓	✓	x
RG_FOUSH	✓	x	✓	✓	x
RG_FOUKI	✓	x	✓	✓	✓
RG_FOBKS	x	x	✓	✓	✓
RG_SCOUTDS	x	x	✓	✓	✓
RG_FOBSC	✓	x	✓	✓	✓
RG_FOBBCP	✓	✓	✓	✓	✓
RG_FRCP1SW	x	x	x	x	x
RG_FRUPO	✓	✓	✓	✓	✓
RG_FODPO	✓	x	✓	✓	✓
RG_FO22	✓	✓	✓	✓	✓
RG_FOU EW	✓	x	✓	✓	✓

Note: 'x' denotes biological monitoring areas and years not included in the Canonical Correspondence Analysis.

regression component of the CCA models fitted regression lines to CA axis representing the habitat and stressor variables. All analyses were done in R 4.2.3 (R Core Team 2022), using the Vegan package (Oksanen et al., 2020).



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APPENDIX C
SUMMARIZED DATA

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Acidity (as CaCO3)	mg/L	<2
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	107
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Total (as CaCO3)	mg/L	107
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Dissolved	mg/L	<0.001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Total	mg/L	<0.003
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Ammonia, Total (as N)	mg/L	<0.005
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Dissolved	mg/L	<0.0001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Total	mg/L	<0.0001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Dissolved	mg/L	<0.0001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Total	mg/L	<0.0001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Dissolved	mg/L	0.0146
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Total	mg/L	0.0153
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Dissolved	mg/L	<0.00002
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Total	mg/L	<0.00002
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Total	mg/L	<0.00005
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Dissolved	mg/L	<0.01
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Total	mg/L	<0.01
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bromide (Br)	mg/L	<0.05
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Dissolved	mg/L	<0.000005
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Total	mg/L	0.0000059
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Dissolved	mg/L	50.4
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Total	mg/L	50.5
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chloride (Cl)	mg/L	0.24
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Dissolved	mg/L	0.00013
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Total	mg/L	0.00027
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Dissolved	mg/L	<0.0001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Total	mg/L	<0.0001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Conductivity	uS/cm	356
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Conductivity, Field	uS/cm	381.4
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Dissolved	mg/L	<0.0002
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Total	mg/L	<0.0005
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Organic Carbon	mg/L	<0.5
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	%	82.3
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	11.78
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Fluoride	mg/L	0.334
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Hardness - Dissolved (as CaCO3)	mg/L	181
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Dissolved	mg/L	<0.01
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Total	mg/L	<0.01
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Dissolved	mg/L	<0.00005
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Total	mg/L	<0.00005
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Dissolved	mg/L	<0.001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Total	mg/L	<0.001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Dissolved	mg/L	13.4
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Total	mg/L	13.7
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Dissolved	mg/L	<0.0001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Total	mg/L	<0.0001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Dissolved	mg/L	<0.000005
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Total	mg/L	<0.000005
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Dissolved	mg/L	0.000599
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Total	mg/L	0.000636
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Dissolved	mg/L	<0.0005
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Total	mg/L	<0.0005
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrate (as N)	mg/L	0.285
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrite (as N)	mg/L	<0.001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP	mV	421
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	296.7
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Orthophosphate	mg/L	<0.001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	7.31
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Lab	pH	8.27
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Phosphorus (P)-Total	mg/L	<0.002
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Dissolved	mg/L	0.214
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Total	mg/L	0.233
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Dissolved	mg/L	0.00115
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Total	mg/L	0.00121
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Dissolved	mg/L	1.3
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Total	mg/L	1.42
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Dissolved	mg/L	<0.00001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Total	mg/L	<0.00001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Dissolved	mg/L	0.383
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Total	mg/L	0.415
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Dissolved	mg/L	0.168
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Total	mg/L	0.174
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sulphate	mg/L	84.5
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	0.7
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Dissolved	mg/L	<0.00001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Total	mg/L	<0.00001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Dissolved	mg/L	<0.0001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Total	mg/L	<0.0001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Dissolved	mg/L	<0.0003
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Total	mg/L	<0.0003
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Dissolved Solids	mg/L	269
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Kjeldahl Nitrogen	mg/L	<0.05
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Organic Carbon	mg/L	<0.5
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	<1
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	<0.1
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Dissolved	mg/L	0.000906
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Total	mg/L	0.000957
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Dissolved	mg/L	<0.0005
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Total	mg/L	<0.0005
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Dissolved	mg/L	0.001
12	1	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Total	mg/L	<0.003
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Acidity (as CaCO3)	mg/L	<2
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	107
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Total (as CaCO3)	mg/L	107
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Dissolved	mg/L	<0.001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Total	mg/L	<0.003
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Ammonia, Total (as N)	mg/L	<0.005
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Dissolved	mg/L	<0.0001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Total	mg/L	<0.0001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Dissolved	mg/L	<0.0001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Total	mg/L	<0.00011
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Dissolved	mg/L	0.0142
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Total	mg/L	0.014
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Dissolved	mg/L	<0.00002
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Total	mg/L	<0.00002
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Dissolved	mg/L	<0.00005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Total	mg/L	<0.00005
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Dissolved	mg/L	<0.01
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Total	mg/L	<0.01
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bromide (Br)	mg/L	<0.05
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Dissolved	mg/L	<0.000005
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Total	mg/L	0.0000079
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Dissolved	mg/L	53.2
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Total	mg/L	50.4
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chloride (Cl)	mg/L	0.25
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Dissolved	mg/L	<0.0001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Total	mg/L	0.00018
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Dissolved	mg/L	<0.0001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Total	mg/L	<0.0001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Conductivity	uS/cm	355
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Dissolved	mg/L	<0.0002
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Total	mg/L	<0.0005
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Organic Carbon	mg/L	<0.5
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	%	85.5
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	12.41
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Fluoride	mg/L	0.294
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Hardness - Dissolved (as CaCO3)	mg/L	185
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Dissolved	mg/L	<0.01
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Total	mg/L	<0.01
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Dissolved	mg/L	<0.00005
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Total	mg/L	<0.00005
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Dissolved	mg/L	<0.001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Total	mg/L	<0.001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Dissolved	mg/L	12.6
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Total	mg/L	13.6
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Dissolved	mg/L	<0.0001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Total	mg/L	<0.0001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Dissolved	mg/L	<0.000005
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Total	mg/L	<0.0000005
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Dissolved	mg/L	0.000564
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Total	mg/L	0.000548
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Dissolved	mg/L	<0.0005
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Total	mg/L	<0.0005
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrate (as N)	mg/L	0.299
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrite (as N)	mg/L	<0.001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP	mV	430
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	158.9
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Orthophosphate	mg/L	0.0013
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	9.73
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Lab	pH	7.96
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Phosphorus (P)-Total	mg/L	<0.002
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Dissolved	mg/L	0.211
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Total	mg/L	0.215
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Dissolved	mg/L	0.00117
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Total	mg/L	0.0013
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Dissolved	mg/L	1.33
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Total	mg/L	1.25
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Dissolved	mg/L	<0.00001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Total	mg/L	<0.00001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Dissolved	mg/L	0.361
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Total	mg/L	0.387
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Dissolved	mg/L	0.171
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Total	mg/L	0.166
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sulphate	mg/L	86.3
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	0.2
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Dissolved	mg/L	<0.00001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Total	mg/L	<0.00001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Dissolved	mg/L	<0.0001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Total	mg/L	<0.0001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Dissolved	mg/L	<0.0003
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Total	mg/L	<0.0003
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Dissolved Solids	mg/L	153
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Kjeldahl Nitrogen	mg/L	<0.05
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Organic Carbon	mg/L	<0.5
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	<1
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	0
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	<0.1
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Dissolved	mg/L	0.000847
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Total	mg/L	0.000901
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Dissolved	mg/L	<0.0005
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Total	mg/L	<0.0005
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Dissolved	mg/L	0.001
4	2	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Total	mg/L	<0.003
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Acidity (as CaCO3)	mg/L	<2
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	108
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Total (as CaCO3)	mg/L	108
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Dissolved	mg/L	0.0013
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Total	mg/L	<0.003
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Ammonia, Total (as N)	mg/L	<0.005
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Dissolved	mg/L	<0.0001
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Total	mg/L	<0.0001
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Dissolved	mg/L	<0.0001
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Total	mg/L	<0.0001
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Dissolved	mg/L	0.0158
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Total	mg/L	0.0165
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Dissolved	mg/L	<0.00002
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Total	mg/L	<0.00002
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Total	mg/L	<0.00005
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Dissolved	mg/L	<0.01
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Total	mg/L	<0.01
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bromide (Br)	mg/L	<0.05
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Dissolved	mg/L	<0.000005
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Total	mg/L	<0.000005
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Dissolved	mg/L	53.9
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Total	mg/L	55.8
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chloride (Cl)	mg/L	0.23
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Dissolved	mg/L	0.00016
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Total	mg/L	0.00018
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Dissolved	mg/L	<0.0001
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Total	mg/L	<0.0001
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Conductivity	uS/cm	366
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Dissolved	mg/L	<0.0002
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Total	mg/L	<0.0005
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Organic Carbon	mg/L	<0.5

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	%	79.9
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	11.54
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Fluoride	mg/L	0.258
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Hardness - Dissolved (as CaCO3)	mg/L	197
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Dissolved	mg/L	<0.01
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Total	mg/L	<0.01
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Dissolved	mg/L	<0.00005
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Total	mg/L	<0.00005
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Dissolved	mg/L	0.0011
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Total	mg/L	0.0014
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Dissolved	mg/L	15.1
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Total	mg/L	14.3
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Dissolved	mg/L	<0.0001
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Total	mg/L	<0.0001
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Dissolved	mg/L	<0.000005
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Total	mg/L	<0.0000005
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Dissolved	mg/L	0.000615
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Total	mg/L	0.000652
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Dissolved	mg/L	<0.0005
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Total	mg/L	<0.0005
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrate (as N)	mg/L	0.263
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrite (as N)	mg/L	<0.001
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP	mV	470
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	156.7
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Orthophosphate	mg/L	<0.001
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.07
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Lab	pH	8.1
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Phosphorus (P)-Total	mg/L	0.002
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Dissolved	mg/L	0.237
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Total	mg/L	0.229
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Dissolved	mg/L	0.00131
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Total	mg/L	0.00129
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Dissolved	mg/L	1.37
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Total	mg/L	1.58
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Dissolved	mg/L	<0.00001
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Total	mg/L	<0.00001
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Dissolved	mg/L	0.422
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Total	mg/L	0.406
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Dissolved	mg/L	0.175
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Total	mg/L	0.196
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sulphate	mg/L	81.8
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	0.4
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Dissolved	mg/L	<0.00001
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Total	mg/L	<0.00001
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Dissolved	mg/L	<0.0001
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Total	mg/L	<0.0001
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Dissolved	mg/L	<0.0003
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Total	mg/L	<0.0003
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Dissolved Solids	mg/L	218
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Kjeldahl Nitrogen	mg/L	<0.05
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Organic Carbon	mg/L	<0.5
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	<1
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	0.05
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	<0.1
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Dissolved	mg/L	0.000896
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Total	mg/L	0.000984
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Dissolved	mg/L	<0.0005
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Total	mg/L	<0.0005
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Dissolved	mg/L	<0.001
3	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Total	mg/L	<0.003
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Acidity (as CaCO3)	mg/L	<2
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	107
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Total (as CaCO3)	mg/L	107
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Ammonia, Total (as N)	mg/L	<0.005
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bromide (Br)	mg/L	<0.05
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Dissolved	mg/L	48.4
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chloride (Cl)	mg/L	0.29
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Conductivity	uS/cm	362
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	%	80.8
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	11.49
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Fluoride	mg/L	0.423
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Hardness - Dissolved (as CaCO3)	mg/L	179
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Dissolved	mg/L	14.1
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrate (as N)	mg/L	0.272
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrite (as N)	mg/L	<0.001
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP	mV	490
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	138.2
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Orthophosphate	mg/L	<0.001
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.28
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Lab	pH	8.05
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Phosphorus (P)-Total	mg/L	<0.002
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Dissolved	mg/L	0.201
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Dissolved	mg/L	0.394
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sulphate	mg/L	93.4
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	0.9
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Dissolved Solids	mg/L	210
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	<1
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	0.61
17	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	<0.1
22	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	%	82.6
22	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	12.03
22	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	96.7
22	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.1
22	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	0.1
22	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	<1
22	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	0.63
22	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	<0.1
31	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	%	81.2
31	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	11.43
31	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	185.6
31	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.38
31	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	1.3
31	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	5.5
31	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	-0.35
31	3	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	1.11
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Acidity (as CaCO3)	mg/L	<2
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	110
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Total (as CaCO3)	mg/L	110
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Dissolved	mg/L	0.0032
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Total	mg/L	0.0065
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Ammonia, Total (as N)	mg/L	<0.005
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Dissolved	mg/L	<0.0001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Total	mg/L	<0.0001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Dissolved	mg/L	<0.0001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Total	mg/L	<0.0001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Dissolved	mg/L	0.0153
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Total	mg/L	0.0164
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Dissolved	mg/L	<0.00002
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Total	mg/L	<0.00002
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Total	mg/L	<0.00005
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Dissolved	mg/L	<0.01
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Total	mg/L	<0.01
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bromide (Br)	mg/L	<0.05
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Dissolved	mg/L	<0.000005
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Total	mg/L	0.000006
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Dissolved	mg/L	55.6
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Total	mg/L	55.6
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chloride (Cl)	mg/L	0.3
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Dissolved	mg/L	<0.0001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Total	mg/L	0.00017
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Dissolved	mg/L	<0.0001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Total	mg/L	<0.0001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Conductivity	uS/cm	368
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Dissolved	mg/L	<0.0002
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Total	mg/L	<0.0005
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Organic Carbon	mg/L	<0.5
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	%	80.4
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	11.19
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Fluoride	mg/L	0.406
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Hardness - Dissolved (as CaCO3)	mg/L	197
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Dissolved	mg/L	<0.01
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Total	mg/L	<0.01
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Dissolved	mg/L	<0.00005
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Total	mg/L	<0.00005
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Dissolved	mg/L	<0.001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Total	mg/L	0.001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Dissolved	mg/L	14.2
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Total	mg/L	15.3
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Dissolved	mg/L	<0.0001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Total	mg/L	0.00025
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Dissolved	mg/L	<0.000005
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Total	mg/L	<0.000005
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Dissolved	mg/L	0.00122
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Total	mg/L	0.00162
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Dissolved	mg/L	<0.0005
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Total	mg/L	<0.0005
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrate (as N)	mg/L	0.253
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrite (as N)	mg/L	<0.001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP	mV	443
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	176.5
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Orthophosphate	mg/L	0.0012
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.17
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Lab	pH	8.15
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Phosphorus (P)-Total	mg/L	<0.002
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Dissolved	mg/L	0.236
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Total	mg/L	0.243
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Dissolved	mg/L	0.0011
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Total	mg/L	0.00134
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Dissolved	mg/L	1.31
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Total	mg/L	1.51
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Dissolved	mg/L	<0.00001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Total	mg/L	<0.00001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Dissolved	mg/L	0.398
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Total	mg/L	0.46
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Dissolved	mg/L	0.178
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Total	mg/L	0.196
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sulphate	mg/L	87.6
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	1.7
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Dissolved	mg/L	<0.00001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Total	mg/L	<0.00001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Dissolved	mg/L	<0.0001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Total	mg/L	<0.0001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Dissolved	mg/L	<0.0003
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Total	mg/L	<0.0003
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Dissolved Solids	mg/L	290
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Kjeldahl Nitrogen	mg/L	<0.05
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Organic Carbon	mg/L	<0.5
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	<1
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	0.12
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Dissolved	mg/L	0.00095
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Total	mg/L	0.000992
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Dissolved	mg/L	<0.0005
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Total	mg/L	<0.0005
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Dissolved	mg/L	0.001
4	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Total	mg/L	<0.003
11	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	%	78.8
11	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	11.48
11	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	150.3
11	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.16
11	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	0.1
11	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	<1
11	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	0.66
11	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	0.12
19	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	%	75.7
19	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	10.44
19	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	133.2
19	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.39
19	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	1
19	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	<1
19	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	5.68
19	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	<0.1
25	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	11.52
25	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	223.4
25	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.12
25	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	2
25	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	2.7
25	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	-0.29

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
25	4	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	<0.1
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Acidity (as CaCO3)	mg/L	<2
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	109
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Carbonate (as CaCO3)	mg/L	2.6
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Total (as CaCO3)	mg/L	111
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Dissolved	mg/L	0.0014
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Total	mg/L	0.005
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Ammonia, Total (as N)	mg/L	<0.005
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Dissolved	mg/L	<0.0001
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Total	mg/L	<0.0001
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Dissolved	mg/L	<0.0001
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Total	mg/L	<0.0001
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Dissolved	mg/L	0.0148
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Total	mg/L	0.0158
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Dissolved	mg/L	<0.00002
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Total	mg/L	<0.00002
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Total	mg/L	<0.00005
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Dissolved	mg/L	<0.01
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Total	mg/L	<0.01
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bromide (Br)	mg/L	<0.05
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Dissolved	mg/L	<0.000005
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Total	mg/L	<0.000005
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Dissolved	mg/L	48.6
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Total	mg/L	49.6
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chloride (Cl)	mg/L	0.23
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Dissolved	mg/L	0.00012
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Total	mg/L	0.00015
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Dissolved	mg/L	<0.0001
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Total	mg/L	<0.0001
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Conductivity	uS/cm	327
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Dissolved	mg/L	<0.0002
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Total	mg/L	<0.0005
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Organic Carbon	mg/L	0.52
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	11.17
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Fluoride	mg/L	0.332
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Hardness - Dissolved (as CaCO3)	mg/L	170
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Dissolved	mg/L	<0.01
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Total	mg/L	<0.01
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Dissolved	mg/L	<0.00005
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Total	mg/L	<0.00005
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Dissolved	mg/L	<0.001
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Total	mg/L	0.0011
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Dissolved	mg/L	11.9
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Total	mg/L	12.1
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Dissolved	mg/L	<0.0001
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Total	mg/L	0.00012
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Dissolved	mg/L	<0.000005
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Total	mg/L	<0.000005
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Dissolved	mg/L	0.000664
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Total	mg/L	0.00114
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Dissolved	mg/L	<0.0005
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Total	mg/L	<0.0005
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrate (as N)	mg/L	0.234
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrite (as N)	mg/L	<0.001
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP	mV	517
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	129.6
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Orthophosphate	mg/L	<0.001
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.28
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Lab	pH	8.4
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Phosphorus (P)-Total	mg/L	0.0024
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Dissolved	mg/L	0.237
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Total	mg/L	0.259
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Dissolved	mg/L	0.000996
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Total	mg/L	0.000942
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Dissolved	mg/L	1.42
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Total	mg/L	1.51
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Dissolved	mg/L	<0.00001
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Total	mg/L	<0.00001
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Dissolved	mg/L	0.4
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Total	mg/L	0.413
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Dissolved	mg/L	0.158
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Total	mg/L	0.158
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sulphate	mg/L	64.1
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	2.9
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Dissolved	mg/L	<0.00001
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Total	mg/L	<0.00001
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Dissolved	mg/L	<0.0001
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Total	mg/L	<0.0001
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Dissolved	mg/L	<0.0003
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Total	mg/L	<0.0003
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Dissolved Solids	mg/L	178
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Kjeldahl Nitrogen	mg/L	0.059
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Organic Carbon	mg/L	<0.5
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	2.8
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	0.39
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	0.2
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Dissolved	mg/L	0.000888
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Total	mg/L	0.000945
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Dissolved	mg/L	<0.0005
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Total	mg/L	<0.0005
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Dissolved	mg/L	0.0011
3	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Total	mg/L	<0.003
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Acidity (as CaCO3)	mg/L	<2
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	123
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Total (as CaCO3)	mg/L	123
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Ammonia, Total (as N)	mg/L	<0.005
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bromide (Br)	mg/L	<0.05
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Dissolved	mg/L	46.2
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chloride (Cl)	mg/L	0.18
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Conductivity	uS/cm	313
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	11.43
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Fluoride	mg/L	0.274
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Hardness - Dissolved (as CaCO3)	mg/L	166
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Dissolved	mg/L	12.2
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrate (as N)	mg/L	0.206
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrite (as N)	mg/L	<0.001
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP	mV	512

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	153.4
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Orthophosphate	mg/L	<0.001
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.19
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Lab	pH	8.22
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Phosphorus (P)-Total	mg/L	<0.002
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Dissolved	mg/L	0.235
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Dissolved	mg/L	0.395
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sulphate	mg/L	49.4
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	2.5
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Dissolved Solids	mg/L	294
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	3.9
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	0.57
11	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	0.29
18	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	10.66
18	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	164.6
18	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.25
18	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	3
18	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	<1
18	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	1.1
18	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	0.42
26	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	10.96
26	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	157.3
26	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.36
26	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	3
26	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	<1
26	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	0.79
26	5	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	0.16
1	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	10.81
1	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	147.4
1	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.2
1	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	3.2
1	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	<1
1	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	0.64
1	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	0.26
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Acidity (as CaCO3)	mg/L	5.6
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	134
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Total (as CaCO3)	mg/L	134
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Dissolved	mg/L	0.0026
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Total	mg/L	0.0146
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Ammonia, Total (as N)	mg/L	<0.005
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Dissolved	mg/L	<0.0001
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Total	mg/L	<0.0001
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Dissolved	mg/L	<0.0001
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Total	mg/L	0.00011
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Dissolved	mg/L	0.00858
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Total	mg/L	0.00865
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Total	mg/L	<0.00002
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Total	mg/L	<0.00005
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Dissolved	mg/L	<0.01
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Total	mg/L	<0.01
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bromide (Br)	mg/L	<0.05
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Dissolved	mg/L	<0.000005
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Total	mg/L	0.000012
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Dissolved	mg/L	34.2
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Total	mg/L	38.9
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chloride (Cl)	mg/L	<0.1
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Dissolved	mg/L	0.00011
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Total	mg/L	0.00018
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Total	mg/L	<0.0001
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Conductivity	uS/cm	214
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Dissolved	mg/L	<0.0002
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Total	mg/L	<0.0005
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Organic Carbon	mg/L	<0.5
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	10.47
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Fluoride	mg/L	0.152
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Hardness - Dissolved (as CaCO3)	mg/L	112
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Dissolved	mg/L	<0.01
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Total	mg/L	0.012
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Dissolved	mg/L	<0.00005
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Total	mg/L	<0.00005
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Dissolved	mg/L	<0.001
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Total	mg/L	<0.001
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Dissolved	mg/L	6.56
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Total	mg/L	6.49
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Dissolved	mg/L	<0.0001
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Total	mg/L	0.00051
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Total	mg/L	<0.000005
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Dissolved	mg/L	0.000391
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Total	mg/L	0.000411
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Dissolved	mg/L	<0.0005
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Total	mg/L	<0.0005
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrate (as N)	mg/L	0.203
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrite (as N)	mg/L	<0.001
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP	mV	269
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	135.1
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Orthophosphate	mg/L	<0.001
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.29
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Lab	pH	8.11
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Phosphorus (P)-Total	mg/L	0.0038
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Dissolved	mg/L	0.218
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Total	mg/L	0.164
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Dissolved	mg/L	0.000448
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Total	mg/L	0.00049
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Dissolved	mg/L	1.12
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Total	mg/L	1.22
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Dissolved	mg/L	<0.00001
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Total	mg/L	<0.00001
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Dissolved	mg/L	0.245
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Total	mg/L	0.241
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Dissolved	mg/L	0.0738
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Total	mg/L	0.0677
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sulphate	mg/L	11.6
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	4.1
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Total	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Dissolved	mg/L	<0.0001
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Total	mg/L	<0.0001
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Total	mg/L	<0.0003
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Dissolved Solids	mg/L	136
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Kjeldahl Nitrogen	mg/L	0.08
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Organic Carbon	mg/L	0.57
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	4.2
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	0
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	1.11
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Dissolved	mg/L	0.000466
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Total	mg/L	0.00048
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Dissolved	mg/L	<0.0005
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Total	mg/L	<0.0005
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Dissolved	mg/L	0.0013
7	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Total	mg/L	<0.003
22	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	10.69
22	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	215
22	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	7.69
22	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	5.2
22	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	2.4
22	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	0.63
22	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	0.39
27	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	10.69
27	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	215
27	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	7.69
27	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	5.2
27	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	5.8
27	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	0.63
27	6	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	1.76
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Acidity (as CaCO3)	mg/L	<2
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	91.9
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Total (as CaCO3)	mg/L	91.9
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Dissolved	mg/L	0.0023
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Total	mg/L	0.0082
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Ammonia, Total (as N)	mg/L	<0.005
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Dissolved	mg/L	<0.0001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Total	mg/L	<0.0001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Dissolved	mg/L	0.0001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Total	mg/L	<0.0001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Dissolved	mg/L	0.00743
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Total	mg/L	0.00778
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Total	mg/L	<0.00002
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Total	mg/L	<0.00005
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Dissolved	mg/L	<0.01
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Total	mg/L	<0.01
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bromide (Br)	mg/L	<0.05
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Dissolved	mg/L	<0.000005
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Total	mg/L	0.000006
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Dissolved	mg/L	30.5
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Total	mg/L	35.2
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chloride (Cl)	mg/L	<0.1
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Dissolved	mg/L	<0.0001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Total	mg/L	<0.0001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Total	mg/L	<0.0001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Conductivity	uS/cm	182
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Dissolved	mg/L	<0.0002
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Total	mg/L	<0.0005
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Organic Carbon	mg/L	<0.5
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	10.57
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Fluoride	mg/L	0.178
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Hardness - Dissolved (as CaCO3)	mg/L	99.8
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Dissolved	mg/L	<0.01
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Total	mg/L	<0.01
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Dissolved	mg/L	<0.00005
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Total	mg/L	<0.00005
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Dissolved	mg/L	<0.001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Total	mg/L	<0.001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Dissolved	mg/L	5.74
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Total	mg/L	5.96
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Dissolved	mg/L	<0.0001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Total	mg/L	0.00031
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Total	mg/L	<0.000005
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Dissolved	mg/L	0.000408
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Total	mg/L	0.000521
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Dissolved	mg/L	<0.0005
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Total	mg/L	0.00058
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrate (as N)	mg/L	0.117
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrite (as N)	mg/L	<0.001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP	mV	293
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	140.6
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Orthophosphate	mg/L	<0.001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Lab	pH	8.18
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Phosphorus (P)-Total	mg/L	0.0024
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Dissolved	mg/L	0.16
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Total	mg/L	0.189
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Dissolved	mg/L	0.00041
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Total	mg/L	0.000467
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Dissolved	mg/L	0.986
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Total	mg/L	1.07
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Dissolved	mg/L	<0.00001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Total	mg/L	<0.00001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Dissolved	mg/L	0.198
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Total	mg/L	0.234
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Dissolved	mg/L	0.0617
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Total	mg/L	0.0692
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sulphate	mg/L	14.8
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	4.9
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Total	mg/L	<0.00001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Dissolved	mg/L	<0.0001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Total	mg/L	<0.0001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Total	mg/L	<0.0003

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Dissolved Solids	mg/L	121
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Kjeldahl Nitrogen	mg/L	<0.05
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Organic Carbon	mg/L	<0.5
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	<1
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	0.53
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	0.42
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Dissolved	mg/L	0.000453
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Total	mg/L	0.000536
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Dissolved	mg/L	<0.0005
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Total	mg/L	<0.0005
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Dissolved	mg/L	<0.001
7	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Total	mg/L	<0.003
14	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	10.28
14	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	118.2
14	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.42
14	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	6.1
14	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	55.2
14	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	1.1
14	7	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	1.2
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Acidity (as CaCO3)	mg/L	<2
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	107
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Total (as CaCO3)	mg/L	107
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Dissolved	mg/L	0.0025
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Total	mg/L	0.0105
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Ammonia, Total (as N)	mg/L	<0.005
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Dissolved	mg/L	<0.0001
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Total	mg/L	<0.0001
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Dissolved	mg/L	0.0001
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Total	mg/L	0.00014
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Dissolved	mg/L	0.0122
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Total	mg/L	0.0114
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Dissolved	mg/L	<0.00002
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Total	mg/L	<0.00002
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Total	mg/L	<0.00005
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Dissolved	mg/L	<0.01
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Total	mg/L	<0.01
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bromide (Br)	mg/L	<0.05
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Dissolved	mg/L	0.0000067
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Total	mg/L	0.0000079
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Dissolved	mg/L	36.9
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Total	mg/L	37.6
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chloride (Cl)	mg/L	0.14
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Dissolved	mg/L	0.00014
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Total	mg/L	0.00024
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Dissolved	mg/L	<0.0001
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Total	mg/L	<0.0001
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Conductivity	uS/cm	228
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Dissolved	mg/L	<0.0002
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Total	mg/L	<0.0005
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Organic Carbon	mg/L	<0.5
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	8.62
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Fluoride	mg/L	0.311
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Hardness - Dissolved (as CaCO3)	mg/L	130
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Dissolved	mg/L	<0.01
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Total	mg/L	<0.01
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Dissolved	mg/L	<0.00005
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Total	mg/L	<0.00005
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Dissolved	mg/L	<0.001
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Total	mg/L	<0.001
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Dissolved	mg/L	9.16
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Total	mg/L	8.78
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Dissolved	mg/L	<0.0001
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Total	mg/L	0.00037
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Dissolved	mg/L	<0.000005
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Total	mg/L	<0.000005
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Dissolved	mg/L	0.000542
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Total	mg/L	0.00052
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Dissolved	mg/L	<0.0005
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Total	mg/L	0.00065
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrate (as N)	mg/L	0.121
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrite (as N)	mg/L	<0.001
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP	mV	356
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	96.3
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Orthophosphate	mg/L	<0.001
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.36
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Lab	pH	7.69
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Phosphorus (P)-Total	mg/L	<0.002
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Dissolved	mg/L	0.223
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Total	mg/L	0.232
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Dissolved	mg/L	0.000805
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Total	mg/L	0.000645
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Dissolved	mg/L	1.13
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Total	mg/L	1.18
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Dissolved	mg/L	<0.00001
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Total	mg/L	<0.00001
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Dissolved	mg/L	0.279
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Total	mg/L	0.302
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Dissolved	mg/L	0.105
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Total	mg/L	0.104
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sulphate	mg/L	33.8
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	11.6
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Dissolved	mg/L	<0.00001
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Total	mg/L	<0.00001
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Dissolved	mg/L	<0.0001
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Total	mg/L	<0.0001
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Dissolved	mg/L	<0.0003
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Total	mg/L	<0.0003
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Dissolved Solids	mg/L	174
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Kjeldahl Nitrogen	mg/L	<0.05
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Organic Carbon	mg/L	<0.5
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	1
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	0.34
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	0.11
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Dissolved	mg/L	0.000674
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Total	mg/L	0.00066
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Dissolved	mg/L	<0.0005
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Total	mg/L	<0.0005
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Dissolved	mg/L	0.0014

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
9	8	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Total	mg/L	<0.003
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Acidity (as CaCO3)	mg/L	<2
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	115
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Bicarbonate (as HCO3)	mg/L	140
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Carbonate (as CO3)	mg/L	<1
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Hydroxide (as OH)	mg/L	<1
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Total (as CaCO3)	mg/L	115
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Dissolved	mg/L	0.0018
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Total	mg/L	0.0038
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Ammonia, Total (as N)	mg/L	<0.005
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Anion Sum	meq/L	3.48
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Dissolved	mg/L	<0.0001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Total	mg/L	<0.0001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Dissolved	mg/L	<0.0001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Total	mg/L	0.00011
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Dissolved	mg/L	0.0125
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Total	mg/L	0.0124
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Dissolved	mg/L	<0.00002
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Total	mg/L	<0.00002
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Total	mg/L	<0.00005
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Dissolved	mg/L	<0.01
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Total	mg/L	<0.01
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bromide (Br)	mg/L	<0.05
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Dissolved	mg/L	0.0000058
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Total	mg/L	<0.000005
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Dissolved	mg/L	43.3
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Total	mg/L	41.5
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cation - Anion Balance	%	88.2
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cation Sum	meq/L	3.07
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chloride (Cl)	mg/L	1.51
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Dissolved	mg/L	0.00012
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Total	mg/L	0.00016
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Dissolved	mg/L	<0.0001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Total	mg/L	<0.0001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Conductivity	uS/cm	281
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Conductivity, Field	uS/cm	175.8
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Dissolved	mg/L	<0.0002
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Total	mg/L	<0.0005
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Organic Carbon	mg/L	<0.5
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	%	81.6
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	10.06333333
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	DMSeO - Dimethylselenoxide	mg/L	<0.00001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Fluoride	mg/L	0.36
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Hardness - Dissolved (as CaCO3)	mg/L	152
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	ion balance (APHA)	%	6.26
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Dissolved	mg/L	<0.01
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Total	mg/L	<0.01
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Dissolved	mg/L	<0.00005
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Total	mg/L	<0.00005
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Dissolved	mg/L	<0.001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Total	mg/L	0.0011
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Dissolved	mg/L	10.8
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Total	mg/L	11
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Dissolved	mg/L	<0.0001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Total	mg/L	<0.0001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Dissolved	mg/L	<0.000005
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Total	mg/L	<0.000005
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Dissolved	mg/L	0.00059
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Total	mg/L	0.000598
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Dissolved	mg/L	<0.0005
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Total	mg/L	<0.0005
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrate (as N)	mg/L	0.227
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrite (as N)	mg/L	0.0013
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP	mV	312
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Orthophosphate	mg/L	<0.001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.41
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Lab	pH	8.17
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Phosphorus (P)-Total	mg/L	<0.002
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Dissolved	mg/L	0.196
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Total	mg/L	0.193
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Se(IV) - Selenite	mg/L	<0.00002
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Se(VI) - Selenate	mg/L	0.00102
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	SeCN - Selenocyanate	mg/L	<0.00001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Dissolved	mg/L	0.001027333
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Total	mg/L	0.001133
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium Unknown	mg/L	<0.00001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenosulphate	mg/L	<0.00001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	SeMe - Selenomethionine	mg/L	<0.00001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Dissolved	mg/L	1.24
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Total	mg/L	1.21
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Dissolved	mg/L	<0.00001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Total	mg/L	<0.00001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Dissolved	mg/L	0.323
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Total	mg/L	0.337
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Specific Conductivity	uS/cm	278.6
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Dissolved	mg/L	0.134
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Total	mg/L	0.137
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sulphate	mg/L	52.8
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sulphur (S)-Dissolved	mg/L	20.2
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sulphur (S)-Total	mg/L	18.9
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	6.1
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Dissolved	mg/L	<0.00001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Total	mg/L	<0.00001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Dissolved	mg/L	<0.0001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Total	mg/L	<0.0001
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Dissolved	mg/L	<0.0003
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Total	mg/L	<0.0003
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Dissolved Solids	mg/L	193
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Kjeldahl Nitrogen	mg/L	0.661
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Organic Carbon	mg/L	<0.5
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	<1
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	0.14
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Dissolved	mg/L	0.000799
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Total	mg/L	0.000881
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Dissolved	mg/L	<0.0005
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Total	mg/L	<0.0005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Dissolved	mg/L	0.0014
12	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Total	mg/L	<0.003
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Acidity (as CaCO3)	mg/L	<2
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	110
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Total (as CaCO3)	mg/L	110
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Dissolved	mg/L	0.0044
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Total	mg/L	0.0094
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Ammonia, Total (as N)	mg/L	<0.005
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Dissolved	mg/L	<0.0001
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Total	mg/L	<0.0001
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Dissolved	mg/L	<0.0001
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Total	mg/L	0.00018
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Dissolved	mg/L	0.0144
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Total	mg/L	0.014
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Total	mg/L	<0.00002
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Total	mg/L	<0.00005
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Dissolved	mg/L	<0.01
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Total	mg/L	<0.01
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bromide (Br)	mg/L	<0.05
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Dissolved	mg/L	<0.000005
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Total	mg/L	<0.000005
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Dissolved	mg/L	46.2
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Total	mg/L	44.7
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chloride (Cl)	mg/L	0.23
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Dissolved	mg/L	0.00014
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Total	mg/L	0.00021
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Total	mg/L	<0.0001
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Conductivity	uS/cm	287
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Dissolved	mg/L	0.00025
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Total	mg/L	<0.0005
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Organic Carbon	mg/L	<0.5
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	9.49
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Fluoride	mg/L	0.354
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Hardness - Dissolved (as CaCO3)	mg/L	163
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Dissolved	mg/L	<0.01
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Total	mg/L	<0.01
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Dissolved	mg/L	<0.00005
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Total	mg/L	<0.00005
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Dissolved	mg/L	<0.001
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Total	mg/L	<0.001
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Dissolved	mg/L	11.6
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Total	mg/L	10.8
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Dissolved	mg/L	<0.0001
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Total	mg/L	<0.0001
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Total	mg/L	<0.000005
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Dissolved	mg/L	0.000627
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Total	mg/L	0.000624
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Dissolved	mg/L	<0.0005
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Total	mg/L	<0.0005
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrate (as N)	mg/L	0.196
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrite (as N)	mg/L	<0.001
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP	mV	273
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	-187
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Orthophosphate	mg/L	<0.001
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.21
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Lab	pH	8.2
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Phosphorus (P)-Total	mg/L	<0.002
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Dissolved	mg/L	0.212
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Total	mg/L	0.19
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Dissolved	mg/L	0.0012
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Total	mg/L	0.00104
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Dissolved	mg/L	1.27
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Total	mg/L	1.32
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Dissolved	mg/L	<0.00001
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Total	mg/L	<0.00001
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Dissolved	mg/L	0.41
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Total	mg/L	0.34
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Dissolved	mg/L	0.142
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Total	mg/L	0.134
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sulphate	mg/L	52.4
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	6.7
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Total	mg/L	<0.00001
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Dissolved	mg/L	<0.0001
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Total	mg/L	<0.0001
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Total	mg/L	<0.0003
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Dissolved Solids	mg/L	190
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Kjeldahl Nitrogen	mg/L	<0.05
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Organic Carbon	mg/L	<0.5
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	<1
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Field	NTU	-5.77
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	<0.1
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Dissolved	mg/L	0.000866
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Total	mg/L	0.000838
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Dissolved	mg/L	<0.0005
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Total	mg/L	0.00064
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Dissolved	mg/L	0.0012
16	9	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Total	mg/L	<0.003
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Acidity (as CaCO3)	mg/L	<2
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	102
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Total (as CaCO3)	mg/L	102
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Dissolved	mg/L	0.0012
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Total	mg/L	0.0064
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Ammonia, Total (as N)	mg/L	<0.005
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Dissolved	mg/L	<0.0001
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Total	mg/L	<0.0001
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Dissolved	mg/L	<0.0001
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Total	mg/L	0.00013
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Dissolved	mg/L	0.014
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Total	mg/L	0.0146
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Total	mg/L	<0.00002

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Total	mg/L	<0.00005
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Dissolved	mg/L	<0.01
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Total	mg/L	<0.01
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bromide (Br)	mg/L	<0.05
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Dissolved	mg/L	0.0000067
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Total	mg/L	0.0000092
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Dissolved	mg/L	52.2
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Total	mg/L	52.2
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chloride (Cl)	mg/L	0.31
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Dissolved	mg/L	0.00011
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Total	mg/L	0.00014
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Dissolved	mg/L	<0.0001
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Total	mg/L	<0.0001
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Conductivity	uS/cm	315
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Dissolved	mg/L	<0.0002
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Total	mg/L	<0.0005
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Organic Carbon	mg/L	<0.5
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	%	83.2
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	10
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Fluoride	mg/L	0.39
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Hardness - Dissolved (as CaCO3)	mg/L	186
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Dissolved	mg/L	<0.01
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Total	mg/L	<0.01
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Dissolved	mg/L	<0.00005
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Total	mg/L	<0.00005
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Dissolved	mg/L	<0.001
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Total	mg/L	<0.001
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Dissolved	mg/L	13.5
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Total	mg/L	13.2
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Dissolved	mg/L	<0.0001
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Total	mg/L	0.00046
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Total	mg/L	<0.000005
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Dissolved	mg/L	0.000565
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Total	mg/L	0.000658
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Dissolved	mg/L	<0.0005
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Total	mg/L	<0.0005
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrate (as N)	mg/L	0.247
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrite (as N)	mg/L	<0.001
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP	mV	413
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	143.6
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Orthophosphate	mg/L	<0.001
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.23
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Lab	pH	8.15
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Phosphorus (P)-Total	mg/L	0.0025
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Dissolved	mg/L	0.239
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Total	mg/L	0.217
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Dissolved	mg/L	0.0014
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Total	mg/L	0.00114
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Dissolved	mg/L	1.32
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Total	mg/L	1.26
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Dissolved	mg/L	<0.00001
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Total	mg/L	<0.00001
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Dissolved	mg/L	0.363
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Total	mg/L	0.406
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Dissolved	mg/L	0.154
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Total	mg/L	0.164
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sulphate	mg/L	69.7
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	7.3
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Dissolved	mg/L	<0.00001
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Total	mg/L	<0.00001
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Dissolved	mg/L	<0.0001
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Total	mg/L	<0.0001
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Total	mg/L	<0.0003
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Dissolved Solids	mg/L	227
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Kjeldahl Nitrogen	mg/L	0.087
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Organic Carbon	mg/L	<0.5
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	1.3
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	0.11
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Dissolved	mg/L	0.000886
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Total	mg/L	0.000958
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Dissolved	mg/L	<0.0005
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Total	mg/L	<0.0005
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Dissolved	mg/L	0.0014
18	10	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Total	mg/L	<0.003
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Acidity (as CaCO3)	mg/L	2.6
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	116
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Total (as CaCO3)	mg/L	116
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Dissolved	mg/L	0.0012
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Total	mg/L	0.0039
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Ammonia, Total (as N)	mg/L	<0.005
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Dissolved	mg/L	<0.0001
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Total	mg/L	<0.0001
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Dissolved	mg/L	<0.0001
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Total	mg/L	0.00011
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Dissolved	mg/L	0.0142
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Total	mg/L	0.0146
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Dissolved	mg/L	<0.00002
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Total	mg/L	<0.00002
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Total	mg/L	<0.00005
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Dissolved	mg/L	<0.01
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Total	mg/L	<0.01
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bromide (Br)	mg/L	<0.05
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Dissolved	mg/L	<0.000005
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Total	mg/L	<0.000005
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Dissolved	mg/L	47.7
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Total	mg/L	50.8
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chloride (Cl)	mg/L	0.26
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Dissolved	mg/L	0.00013
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Total	mg/L	0.00018
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Dissolved	mg/L	<0.0001
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Total	mg/L	<0.0001
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Conductivity	uS/cm	309
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Dissolved	mg/L	<0.0002
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Total	mg/L	<0.0005
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Organic Carbon	mg/L	<0.5

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	%	79
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	10.96
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Fluoride	mg/L	0.368
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Hardness - Dissolved (as CaCO3)	mg/L	173
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Dissolved	mg/L	<0.01
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Total	mg/L	<0.01
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Dissolved	mg/L	<0.00005
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Total	mg/L	<0.00005
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Dissolved	mg/L	0.0012
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Total	mg/L	<0.001
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Dissolved	mg/L	13
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Total	mg/L	13.4
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Dissolved	mg/L	<0.0001
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Total	mg/L	<0.0001
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Dissolved	mg/L	<0.000005
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Total	mg/L	<0.000005
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Dissolved	mg/L	0.000604
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Total	mg/L	0.00059
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Dissolved	mg/L	<0.0005
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Total	mg/L	<0.0005
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrate (as N)	mg/L	0.256
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrite (as N)	mg/L	<0.001
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP	mV	292
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	124
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Orthophosphate	mg/L	<0.001
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.29
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Lab	pH	8.1
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Phosphorus (P)-Total	mg/L	<0.002
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Dissolved	mg/L	0.204
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Total	mg/L	0.21
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Dissolved	mg/L	0.00138
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Total	mg/L	0.00126
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Dissolved	mg/L	1.23
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Total	mg/L	1.29
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Dissolved	mg/L	<0.00001
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Total	mg/L	<0.00001
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Dissolved	mg/L	0.386
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Total	mg/L	0.367
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Dissolved	mg/L	0.163
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Total	mg/L	0.15
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sulphate	mg/L	71.5
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	1.8
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Dissolved	mg/L	<0.00001
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Total	mg/L	<0.00001
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Dissolved	mg/L	<0.0001
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Total	mg/L	<0.0001
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Dissolved	mg/L	<0.0003
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Total	mg/L	<0.0003
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Dissolved Solids	mg/L	197
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Kjeldahl Nitrogen	mg/L	<0.05
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Organic Carbon	mg/L	<0.5
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	<1
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	<0.1
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Dissolved	mg/L	0.00085
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Total	mg/L	0.000898
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Dissolved	mg/L	<0.0005
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Total	mg/L	<0.0005
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Dissolved	mg/L	0.0012
2	11	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Total	mg/L	<0.003
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Acidity (as CaCO3)	mg/L	<2
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	106
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Alkalinity, Total (as CaCO3)	mg/L	106
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Dissolved	mg/L	0.0018
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Aluminum (Al)-Total	mg/L	0.0035
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Ammonia, Total (as N)	mg/L	<0.005
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Dissolved	mg/L	<0.0001
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Antimony (Sb)-Total	mg/L	<0.0001
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Dissolved	mg/L	<0.0001
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Arsenic (As)-Total	mg/L	<0.0001
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Dissolved	mg/L	0.0153
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Barium (Ba)-Total	mg/L	0.0149
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Beryllium (Be)-Total	mg/L	<0.00002
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bismuth (Bi)-Total	mg/L	<0.00005
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Dissolved	mg/L	<0.01
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Boron (B)-Total	mg/L	<0.01
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Bromide (Br)	mg/L	<0.05
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Dissolved	mg/L	0.0000067
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cadmium (Cd)-Total	mg/L	0.0000058
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Dissolved	mg/L	52
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Calcium (Ca)-Total	mg/L	55.9
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chloride (Cl)	mg/L	0.29
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Dissolved	mg/L	0.00014
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Chromium (Cr)-Total	mg/L	0.00012
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Cobalt (Co)-Total	mg/L	<0.0001
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Conductivity	uS/cm	339
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Dissolved	mg/L	<0.0002
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Copper (Cu)-Total	mg/L	<0.0005
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Organic Carbon	mg/L	<0.5
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	%	76.7
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Dissolved Oxygen, Field	mg/L	11.07
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Fluoride	mg/L	0.353
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Hardness - Dissolved (as CaCO3)	mg/L	184
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Dissolved	mg/L	<0.01
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Iron (Fe)-Total	mg/L	<0.01
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Dissolved	mg/L	<0.00005
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lead (Pb)-Total	mg/L	<0.00005
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Dissolved	mg/L	0.0012
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Lithium (Li)-Total	mg/L	0.0013
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Dissolved	mg/L	13.2
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Magnesium (Mg)-Total	mg/L	13.4
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Dissolved	mg/L	<0.0001
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Manganese (Mn)-Total	mg/L	<0.0001
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Mercury (Hg)-Total	mg/L	<0.000005
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Dissolved	mg/L	0.000631
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Molybdenum (Mo)-Total	mg/L	0.000598

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Dissolved	mg/L	<0.0005
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nickel (Ni)-Total	mg/L	<0.0005
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrate (as N)	mg/L	0.262
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Nitrite (as N)	mg/L	<0.001
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP	mV	449
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	ORP, Field	mV	166.2
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Orthophosphate	mg/L	<0.001
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Field	pH	8.09
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	pH, Lab	pH	8.18
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Phosphorus (P)-Total	mg/L	<0.002
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Dissolved	mg/L	0.2
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Potassium (K)-Total	mg/L	0.201
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Dissolved	mg/L	0.00149
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Selenium (Se)-Total	mg/L	0.00125
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Dissolved	mg/L	1.3
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silicon (Si)-Total	mg/L	1.29
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Dissolved	mg/L	<0.00001
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Silver (Ag)-Total	mg/L	<0.00001
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Dissolved	mg/L	0.397
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sodium (Na)-Total	mg/L	0.384
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Dissolved	mg/L	0.174
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Strontium (Sr)-Total	mg/L	0.172
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Sulphate	mg/L	76.5
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Temperature, Field	deg c	0.4
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Thallium (Tl)-Total	mg/L	<0.00001
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Dissolved	mg/L	<0.0001
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Tin (Sn)-Total	mg/L	<0.0001
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Titanium (Ti)-Total	mg/L	<0.0003
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Dissolved Solids	mg/L	211
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Kjeldahl Nitrogen	mg/L	<0.05
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Organic Carbon	mg/L	<0.5
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Total Suspended Solids	mg/L	<1
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Turbidity, Lab	NTU	0.19
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Dissolved	mg/L	0.00103
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Uranium (U)-Total	mg/L	0.000955
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Dissolved	mg/L	<0.0005
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Vanadium (V)-Total	mg/L	<0.0005
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Dissolved	mg/L	0.0016
7	12	2022	FR_HC3 (RG_HENUP)	FR_HC3	Zinc (Zn)-Total	mg/L	<0.003
27	6	2022	RG_FO26	RG_FO26	Acidity (as CaCO3)	mg/L	<2
27	6	2022	RG_FO26	RG_FO26	Alkalinity, Bicarbonate (as CaCO3)	mg/L	120
27	6	2022	RG_FO26	RG_FO26	Alkalinity, Bicarbonate (as HCO3)	mg/L	147
27	6	2022	RG_FO26	RG_FO26	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
27	6	2022	RG_FO26	RG_FO26	Alkalinity, Carbonate (as CO3)	mg/L	<1
27	6	2022	RG_FO26	RG_FO26	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
27	6	2022	RG_FO26	RG_FO26	Alkalinity, Hydroxide (as OH)	mg/L	<1
27	6	2022	RG_FO26	RG_FO26	Alkalinity, Total (as CaCO3)	mg/L	120
27	6	2022	RG_FO26	RG_FO26	Aluminum (Al)-Dissolved	mg/L	0.0026
27	6	2022	RG_FO26	RG_FO26	Aluminum (Al)-Total	mg/L	0.0266
27	6	2022	RG_FO26	RG_FO26	Ammonia, Total (as N)	mg/L	<0.005
27	6	2022	RG_FO26	RG_FO26	Anion Sum	meq/L	2.62
27	6	2022	RG_FO26	RG_FO26	Antimony (Sb)-Dissolved	mg/L	<0.0001
27	6	2022	RG_FO26	RG_FO26	Antimony (Sb)-Total	mg/L	<0.0001
27	6	2022	RG_FO26	RG_FO26	Arsenic (As)-Dissolved	mg/L	0.00011
27	6	2022	RG_FO26	RG_FO26	Arsenic (As)-Total	mg/L	0.00011
27	6	2022	RG_FO26	RG_FO26	Barium (Ba)-Dissolved	mg/L	0.0283
27	6	2022	RG_FO26	RG_FO26	Barium (Ba)-Total	mg/L	0.028
27	6	2022	RG_FO26	RG_FO26	Beryllium (Be)-Dissolved	mg/L	<0.00002
27	6	2022	RG_FO26	RG_FO26	Beryllium (Be)-Total	mg/L	<0.00002
27	6	2022	RG_FO26	RG_FO26	Bismuth (Bi)-Dissolved	mg/L	<0.00005
27	6	2022	RG_FO26	RG_FO26	Bismuth (Bi)-Total	mg/L	<0.00005
27	6	2022	RG_FO26	RG_FO26	Boron (B)-Dissolved	mg/L	<0.01
27	6	2022	RG_FO26	RG_FO26	Boron (B)-Total	mg/L	<0.01
27	6	2022	RG_FO26	RG_FO26	Bromide (Br)	mg/L	<0.05
27	6	2022	RG_FO26	RG_FO26	Cadmium (Cd)-Dissolved	mg/L	<0.000005
27	6	2022	RG_FO26	RG_FO26	Cadmium (Cd)-Total	mg/L	0.0000076
27	6	2022	RG_FO26	RG_FO26	Calcium (Ca)-Dissolved	mg/L	31.4
27	6	2022	RG_FO26	RG_FO26	Calcium (Ca)-Total	mg/L	32
27	6	2022	RG_FO26	RG_FO26	Cation - Anion Balance	%	87.8
27	6	2022	RG_FO26	RG_FO26	Cation Sum	meq/L	2.3
27	6	2022	RG_FO26	RG_FO26	Chloride (Cl)	mg/L	<0.1
27	6	2022	RG_FO26	RG_FO26	Chromium (Cr)-Dissolved	mg/L	<0.0001
27	6	2022	RG_FO26	RG_FO26	Chromium (Cr)-Total	mg/L	0.00019
27	6	2022	RG_FO26	RG_FO26	Cobalt (Co)-Dissolved	mg/L	<0.0001
27	6	2022	RG_FO26	RG_FO26	Cobalt (Co)-Total	mg/L	<0.0001
27	6	2022	RG_FO26	RG_FO26	Conductivity	uS/cm	216
27	6	2022	RG_FO26	RG_FO26	Conductivity, Field	uS/cm	154.4
27	6	2022	RG_FO26	RG_FO26	Copper (Cu)-Dissolved	mg/L	<0.0002
27	6	2022	RG_FO26	RG_FO26	Copper (Cu)-Total	mg/L	<0.0005
27	6	2022	RG_FO26	RG_FO26	Dissolved Organic Carbon	mg/L	1.61
27	6	2022	RG_FO26	RG_FO26	Dissolved Oxygen, Field	%	82.7
27	6	2022	RG_FO26	RG_FO26	Dissolved Oxygen, Field	mg/L	10.66
27	6	2022	RG_FO26	RG_FO26	DMSeO - Dimethylselenoxide	mg/L	<0.00001
27	6	2022	RG_FO26	RG_FO26	Fluoride	mg/L	0.111
27	6	2022	RG_FO26	RG_FO26	Hardness - Dissolved (as CaCO3)	mg/L	114
27	6	2022	RG_FO26	RG_FO26	ion balance (APHA)	%	6.5
27	6	2022	RG_FO26	RG_FO26	Iron (Fe)-Dissolved	mg/L	<0.01
27	6	2022	RG_FO26	RG_FO26	Iron (Fe)-Total	mg/L	0.028
27	6	2022	RG_FO26	RG_FO26	Lead (Pb)-Dissolved	mg/L	<0.00005
27	6	2022	RG_FO26	RG_FO26	Lead (Pb)-Total	mg/L	<0.00005
27	6	2022	RG_FO26	RG_FO26	Lithium (Li)-Dissolved	mg/L	0.0014
27	6	2022	RG_FO26	RG_FO26	Lithium (Li)-Total	mg/L	0.0014
27	6	2022	RG_FO26	RG_FO26	Magnesium (Mg)-Dissolved	mg/L	8.55
27	6	2022	RG_FO26	RG_FO26	Magnesium (Mg)-Total	mg/L	8.64
27	6	2022	RG_FO26	RG_FO26	Manganese (Mn)-Dissolved	mg/L	0.00018
27	6	2022	RG_FO26	RG_FO26	Manganese (Mn)-Total	mg/L	0.00192
27	6	2022	RG_FO26	RG_FO26	Mercury (Hg)-Dissolved	mg/L	<0.000005
27	6	2022	RG_FO26	RG_FO26	Mercury (Hg)-Total	mg/L	<0.000005
27	6	2022	RG_FO26	RG_FO26	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
27	6	2022	RG_FO26	RG_FO26	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
27	6	2022	RG_FO26	RG_FO26	Molybdenum (Mo)-Dissolved	mg/L	0.000552
27	6	2022	RG_FO26	RG_FO26	Molybdenum (Mo)-Total	mg/L	0.000579
27	6	2022	RG_FO26	RG_FO26	Nickel (Ni)-Dissolved	mg/L	<0.0005
27	6	2022	RG_FO26	RG_FO26	Nickel (Ni)-Total	mg/L	<0.0005
27	6	2022	RG_FO26	RG_FO26	Nitrate (as N)	mg/L	0.0449
27	6	2022	RG_FO26	RG_FO26	Nitrite (as N)	mg/L	<0.001
27	6	2022	RG_FO26	RG_FO26	ORP	mV	242
27	6	2022	RG_FO26	RG_FO26	Orthophosphate	mg/L	0.0032
27	6	2022	RG_FO26	RG_FO26	pH, Field	pH	7.81

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
27	6	2022	RG_FO26	RG_FO26	pH, Lab	pH	8.14
27	6	2022	RG_FO26	RG_FO26	Phosphorus (P)-Total	mg/L	0.007
27	6	2022	RG_FO26	RG_FO26	Potassium (K)-Dissolved	mg/L	0.306
27	6	2022	RG_FO26	RG_FO26	Potassium (K)-Total	mg/L	0.308
27	6	2022	RG_FO26	RG_FO26	Se(IV) - Selenite	mg/L	0.000013
27	6	2022	RG_FO26	RG_FO26	Se(VI) - Selenate	mg/L	0.000322
27	6	2022	RG_FO26	RG_FO26	SeCN - Selenocyanate	mg/L	<0.00001
27	6	2022	RG_FO26	RG_FO26	Selenium (Se)-Dissolved	mg/L	0.000437333
27	6	2022	RG_FO26	RG_FO26	Selenium (Se)-Total	mg/L	0.000393
27	6	2022	RG_FO26	RG_FO26	Selenium Unknown	mg/L	<0.00001
27	6	2022	RG_FO26	RG_FO26	Selenosulphate	mg/L	<0.00001
27	6	2022	RG_FO26	RG_FO26	SeMe - Selenomethionine	mg/L	<0.00001
27	6	2022	RG_FO26	RG_FO26	Silicon (Si)-Dissolved	mg/L	1.77
27	6	2022	RG_FO26	RG_FO26	Silicon (Si)-Total	mg/L	1.84
27	6	2022	RG_FO26	RG_FO26	Silver (Ag)-Dissolved	mg/L	<0.00001
27	6	2022	RG_FO26	RG_FO26	Silver (Ag)-Total	mg/L	<0.00001
27	6	2022	RG_FO26	RG_FO26	Sodium (Na)-Dissolved	mg/L	0.51
27	6	2022	RG_FO26	RG_FO26	Sodium (Na)-Total	mg/L	0.519
27	6	2022	RG_FO26	RG_FO26	Specific Conductivity	uS/cm	252.8
27	6	2022	RG_FO26	RG_FO26	Strontium (Sr)-Dissolved	mg/L	0.0637
27	6	2022	RG_FO26	RG_FO26	Strontium (Sr)-Total	mg/L	0.0659
27	6	2022	RG_FO26	RG_FO26	Sulphate	mg/L	10.3
27	6	2022	RG_FO26	RG_FO26	Sulphur (S)-Dissolved	mg/L	3.3
27	6	2022	RG_FO26	RG_FO26	Sulphur (S)-Total	mg/L	3.58
27	6	2022	RG_FO26	RG_FO26	Temperature, Field	deg c	4.7
27	6	2022	RG_FO26	RG_FO26	Thallium (Tl)-Dissolved	mg/L	<0.00001
27	6	2022	RG_FO26	RG_FO26	Thallium (Tl)-Total	mg/L	<0.00001
27	6	2022	RG_FO26	RG_FO26	Tin (Sn)-Dissolved	mg/L	<0.0001
27	6	2022	RG_FO26	RG_FO26	Tin (Sn)-Total	mg/L	<0.0001
27	6	2022	RG_FO26	RG_FO26	Titanium (Ti)-Dissolved	mg/L	<0.0003
27	6	2022	RG_FO26	RG_FO26	Titanium (Ti)-Total	mg/L	0.00041
27	6	2022	RG_FO26	RG_FO26	Total Dissolved Solids	mg/L	141
27	6	2022	RG_FO26	RG_FO26	Total Kjeldahl Nitrogen	mg/L	0.106
27	6	2022	RG_FO26	RG_FO26	Total Organic Carbon	mg/L	1.68
27	6	2022	RG_FO26	RG_FO26	Total Suspended Solids	mg/L	1.4
27	6	2022	RG_FO26	RG_FO26	Turbidity, Lab	NTU	0.6
27	6	2022	RG_FO26	RG_FO26	Uranium (U)-Dissolved	mg/L	0.000364
27	6	2022	RG_FO26	RG_FO26	Uranium (U)-Total	mg/L	0.000351
27	6	2022	RG_FO26	RG_FO26	Vanadium (V)-Dissolved	mg/L	<0.0005
27	6	2022	RG_FO26	RG_FO26	Vanadium (V)-Total	mg/L	<0.0005
27	6	2022	RG_FO26	RG_FO26	Zinc (Zn)-Dissolved	mg/L	<0.001
27	6	2022	RG_FO26	RG_FO26	Zinc (Zn)-Total	mg/L	<0.003
16	9	2022	RG_FO26	RG_FO26	Acidity (as CaCO3)	mg/L	<2
16	9	2022	RG_FO26	RG_FO26	Alkalinity, Bicarbonate (as CaCO3)	mg/L	141
16	9	2022	RG_FO26	RG_FO26	Alkalinity, Bicarbonate (as HCO3)	mg/L	172
16	9	2022	RG_FO26	RG_FO26	Alkalinity, Carbonate (as CaCO3)	mg/L	3.8
16	9	2022	RG_FO26	RG_FO26	Alkalinity, Carbonate (as CO3)	mg/L	2.3
16	9	2022	RG_FO26	RG_FO26	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	9	2022	RG_FO26	RG_FO26	Alkalinity, Hydroxide (as OH)	mg/L	<1
16	9	2022	RG_FO26	RG_FO26	Alkalinity, Total (as CaCO3)	mg/L	145
16	9	2022	RG_FO26	RG_FO26	Aluminum (Al)-Dissolved	mg/L	<0.001
16	9	2022	RG_FO26	RG_FO26	Aluminum (Al)-Total	mg/L	0.0051
16	9	2022	RG_FO26	RG_FO26	Ammonia, Total (as N)	mg/L	<0.005
16	9	2022	RG_FO26	RG_FO26	Anion Sum	meq/L	3.86
16	9	2022	RG_FO26	RG_FO26	Antimony (Sb)-Dissolved	mg/L	<0.0001
16	9	2022	RG_FO26	RG_FO26	Antimony (Sb)-Total	mg/L	<0.0001
16	9	2022	RG_FO26	RG_FO26	Arsenic (As)-Dissolved	mg/L	<0.0001
16	9	2022	RG_FO26	RG_FO26	Arsenic (As)-Total	mg/L	<0.0001
16	9	2022	RG_FO26	RG_FO26	Barium (Ba)-Dissolved	mg/L	0.0457
16	9	2022	RG_FO26	RG_FO26	Barium (Ba)-Total	mg/L	0.0428
16	9	2022	RG_FO26	RG_FO26	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	9	2022	RG_FO26	RG_FO26	Beryllium (Be)-Total	mg/L	<0.00002
16	9	2022	RG_FO26	RG_FO26	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	9	2022	RG_FO26	RG_FO26	Bismuth (Bi)-Total	mg/L	<0.00005
16	9	2022	RG_FO26	RG_FO26	Boron (B)-Dissolved	mg/L	<0.01
16	9	2022	RG_FO26	RG_FO26	Boron (B)-Total	mg/L	<0.01
16	9	2022	RG_FO26	RG_FO26	Bromide (Br)	mg/L	<0.05
16	9	2022	RG_FO26	RG_FO26	Cadmium (Cd)-Dissolved	mg/L	0.0000088
16	9	2022	RG_FO26	RG_FO26	Cadmium (Cd)-Total	mg/L	0.0000072
16	9	2022	RG_FO26	RG_FO26	Calcium (Ca)-Dissolved	mg/L	47.1
16	9	2022	RG_FO26	RG_FO26	Calcium (Ca)-Total	mg/L	46.2
16	9	2022	RG_FO26	RG_FO26	Cation - Anion Balance	%	90.7
16	9	2022	RG_FO26	RG_FO26	Cation Sum	meq/L	3.5
16	9	2022	RG_FO26	RG_FO26	Chloride (Cl)	mg/L	0.14
16	9	2022	RG_FO26	RG_FO26	Chromium (Cr)-Dissolved	mg/L	0.00011
16	9	2022	RG_FO26	RG_FO26	Chromium (Cr)-Total	mg/L	0.00012
16	9	2022	RG_FO26	RG_FO26	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	9	2022	RG_FO26	RG_FO26	Cobalt (Co)-Total	mg/L	<0.0001
16	9	2022	RG_FO26	RG_FO26	Conductivity	uS/cm	333
16	9	2022	RG_FO26	RG_FO26	Conductivity, Field	uS/cm	322.9
16	9	2022	RG_FO26	RG_FO26	Copper (Cu)-Dissolved	mg/L	<0.0002
16	9	2022	RG_FO26	RG_FO26	Copper (Cu)-Total	mg/L	<0.0005
16	9	2022	RG_FO26	RG_FO26	Dissolved Organic Carbon	mg/L	<0.5
16	9	2022	RG_FO26	RG_FO26	Dissolved Oxygen, Field	%	87
16	9	2022	RG_FO26	RG_FO26	Dissolved Oxygen, Field	mg/L	9.995
16	9	2022	RG_FO26	RG_FO26	DMSeO - Dimethylselenoxide	mg/L	<0.00001
16	9	2022	RG_FO26	RG_FO26	Fluoride	mg/L	0.172
16	9	2022	RG_FO26	RG_FO26	Hardness - Dissolved (as CaCO3)	mg/L	174
16	9	2022	RG_FO26	RG_FO26	ion balance (APHA)	%	4.89
16	9	2022	RG_FO26	RG_FO26	Iron (Fe)-Dissolved	mg/L	<0.01
16	9	2022	RG_FO26	RG_FO26	Iron (Fe)-Total	mg/L	<0.01
16	9	2022	RG_FO26	RG_FO26	Lead (Pb)-Dissolved	mg/L	<0.00005
16	9	2022	RG_FO26	RG_FO26	Lead (Pb)-Total	mg/L	<0.00005
16	9	2022	RG_FO26	RG_FO26	Lithium (Li)-Dissolved	mg/L	0.0018
16	9	2022	RG_FO26	RG_FO26	Lithium (Li)-Total	mg/L	0.0023
16	9	2022	RG_FO26	RG_FO26	Magnesium (Mg)-Dissolved	mg/L	13.6
16	9	2022	RG_FO26	RG_FO26	Magnesium (Mg)-Total	mg/L	13.3
16	9	2022	RG_FO26	RG_FO26	Manganese (Mn)-Dissolved	mg/L	<0.0001
16	9	2022	RG_FO26	RG_FO26	Manganese (Mn)-Total	mg/L	0.00019
16	9	2022	RG_FO26	RG_FO26	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	9	2022	RG_FO26	RG_FO26	Mercury (Hg)-Total	mg/L	<0.000005
16	9	2022	RG_FO26	RG_FO26	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
16	9	2022	RG_FO26	RG_FO26	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
16	9	2022	RG_FO26	RG_FO26	Molybdenum (Mo)-Dissolved	mg/L	0.000666
16	9	2022	RG_FO26	RG_FO26	Molybdenum (Mo)-Total	mg/L	0.000678
16	9	2022	RG_FO26	RG_FO26	Nickel (Ni)-Dissolved	mg/L	<0.0005
16	9	2022	RG_FO26	RG_FO26	Nickel (Ni)-Total	mg/L	<0.0005
16	9	2022	RG_FO26	RG_FO26	Nitrate (as N)	mg/L	0.0271
16	9	2022	RG_FO26	RG_FO26	Nitrite (as N)	mg/L	<0.001
16	9	2022	RG_FO26	RG_FO26	ORP	mV	299
16	9	2022	RG_FO26	RG_FO26	Orthophosphate	mg/L	0.0024

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	9	2022	RG_FO26	RG_FO26	pH, Field	pH	8.585
16	9	2022	RG_FO26	RG_FO26	pH, Lab	pH	8.32
16	9	2022	RG_FO26	RG_FO26	Phosphorus (P)-Total	mg/L	0.0028
16	9	2022	RG_FO26	RG_FO26	Potassium (K)-Dissolved	mg/L	0.369
16	9	2022	RG_FO26	RG_FO26	Potassium (K)-Total	mg/L	0.356
16	9	2022	RG_FO26	RG_FO26	Se(IV) - Selenite	mg/L	<0.00002
16	9	2022	RG_FO26	RG_FO26	Se(VI) - Selenate	mg/L	0.000653
16	9	2022	RG_FO26	RG_FO26	SeCN - Selenocyanate	mg/L	<0.00001
16	9	2022	RG_FO26	RG_FO26	Selenium (Se)-Dissolved	mg/L	0.000795
16	9	2022	RG_FO26	RG_FO26	Selenium (Se)-Total	mg/L	0.0007965
16	9	2022	RG_FO26	RG_FO26	Selenium Unknown	mg/L	<0.00001
16	9	2022	RG_FO26	RG_FO26	Selenosulphate	mg/L	<0.00001
16	9	2022	RG_FO26	RG_FO26	SeMe - Selenomethionine	mg/L	<0.00001
16	9	2022	RG_FO26	RG_FO26	Silicon (Si)-Dissolved	mg/L	1.86
16	9	2022	RG_FO26	RG_FO26	Silicon (Si)-Total	mg/L	1.86
16	9	2022	RG_FO26	RG_FO26	Silver (Ag)-Dissolved	mg/L	<0.00001
16	9	2022	RG_FO26	RG_FO26	Silver (Ag)-Total	mg/L	<0.00001
16	9	2022	RG_FO26	RG_FO26	Sodium (Na)-Dissolved	mg/L	0.567
16	9	2022	RG_FO26	RG_FO26	Sodium (Na)-Total	mg/L	0.574
16	9	2022	RG_FO26	RG_FO26	Specific Conductivity	uS/cm	476.9
16	9	2022	RG_FO26	RG_FO26	Strontium (Sr)-Dissolved	mg/L	0.109
16	9	2022	RG_FO26	RG_FO26	Strontium (Sr)-Total	mg/L	0.104
16	9	2022	RG_FO26	RG_FO26	Sulphate	mg/L	45.7
16	9	2022	RG_FO26	RG_FO26	Sulphur (S)-Dissolved	mg/L	16.5
16	9	2022	RG_FO26	RG_FO26	Sulphur (S)-Total	mg/L	17.6
16	9	2022	RG_FO26	RG_FO26	Temperature, Field	deg c	8.2
16	9	2022	RG_FO26	RG_FO26	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	9	2022	RG_FO26	RG_FO26	Thallium (Tl)-Total	mg/L	<0.00001
16	9	2022	RG_FO26	RG_FO26	Tin (Sn)-Dissolved	mg/L	<0.0001
16	9	2022	RG_FO26	RG_FO26	Tin (Sn)-Total	mg/L	<0.0001
16	9	2022	RG_FO26	RG_FO26	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	9	2022	RG_FO26	RG_FO26	Titanium (Ti)-Total	mg/L	<0.0003
16	9	2022	RG_FO26	RG_FO26	Total Dissolved Solids	mg/L	206
16	9	2022	RG_FO26	RG_FO26	Total Kjeldahl Nitrogen	mg/L	<0.5
16	9	2022	RG_FO26	RG_FO26	Total Organic Carbon	mg/L	<0.5
16	9	2022	RG_FO26	RG_FO26	Total Suspended Solids	mg/L	<1
16	9	2022	RG_FO26	RG_FO26	Turbidity, Lab	NTU	0.1
16	9	2022	RG_FO26	RG_FO26	Uranium (U)-Dissolved	mg/L	0.00045
16	9	2022	RG_FO26	RG_FO26	Uranium (U)-Total	mg/L	0.000466
16	9	2022	RG_FO26	RG_FO26	Vanadium (V)-Dissolved	mg/L	<0.0005
16	9	2022	RG_FO26	RG_FO26	Vanadium (V)-Total	mg/L	<0.0005
16	9	2022	RG_FO26	RG_FO26	Zinc (Zn)-Dissolved	mg/L	<0.001
16	9	2022	RG_FO26	RG_FO26	Zinc (Zn)-Total	mg/L	<0.003
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	144
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	144
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0052
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0243
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Ammonia, Total (as N)	mg/L	0.018
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00012
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0634
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0661
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000098
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000131
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	47
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Calcium (Ca)-Total	mg/L	47.6
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Chloride (Cl)	mg/L	0.15
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00013
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00021
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Conductivity	uS/cm	324
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Conductivity, Field	uS/cm	348.3
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Dissolved Organic Carbon	mg/L	0.77
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Dissolved Oxygen, Field	%	75.5
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	10.94
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Fluoride	mg/L	0.105
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	171
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.016
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0017
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Lithium (Li)-Total	mg/L	<0.003
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	13
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	13.8
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00036
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00065
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.0000005
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000567
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000611
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Nitrate (as N)	mg/L	0.151
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	ORP	mV	420
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	ORP, Field	mV	117.1
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Orthophosphate	mg/L	0.0024
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	pH, Field	pH	8.28
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	pH, Lab	pH	8.28
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0051
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.344
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Potassium (K)-Total	mg/L	0.368
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000802
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000918
16	1	2022	FR_UFR1 (RG_UFR1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.84

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.682
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.745
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0891
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0914
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	43
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	0.3
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	<0.0006
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	199
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.09
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	0.82
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.52
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000477
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000477
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
16	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	140
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as HCO3)	mg/L	171
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CO3)	mg/L	<1
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as OH)	mg/L	<1
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	140
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0015
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0271
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	0.0253
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Anion Sum	meq/L	3.78
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00013
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0677
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0652
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.00001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000153
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	46.9
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	49.3
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cation - Anion Difference	%	3.42
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cation - Anion Ratio	%	93.4
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cation Sum	meq/L	3.53
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.13
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.0001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00015
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	323
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity, Field	uS/cm	209.6
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	0.9
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	81.2
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.87
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	DMS ₂ SeO - Dimethylselenoxide	mg/L	<0.00001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.11
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	174
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.014
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0016
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0018
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	13.9
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	13.6
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00022
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00052
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000584
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000602
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.157
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	350
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0042
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.08
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.24
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0063
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.366
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.364
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Se(IV) - Selenite	mg/L	<0.00001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Se(VI) - Selenate	mg/L	0.000806
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	SeCN - Selenocyanate	mg/L	<0.00001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.0009895
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000950667
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium Unknown	mg/L	<0.00001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenosulphate	mg/L	<0.00001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	SeMe - Selenomethionine	mg/L	<0.00001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.98
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.06
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.736
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.716
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Specific Conductivity	uS/cm	400.5
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0915
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0945
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	46
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphur (S)-Dissolved	mg/L	15.3
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphur (S)-Total	mg/L	15.4
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	0
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00056
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	133
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.06
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	0.88
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.55
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000488
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000508
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
18	1	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	148
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	148
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0049
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0253
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.0001
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0686
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0684
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000091
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000171
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	50.4
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	52.6
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.15
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00014
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00024
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	322
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	<0.5
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	82.8
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	12.08
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.102
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	182
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.018
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0016
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0016
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	13.7
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	13.3
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00038
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00096
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.0000005
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000648
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000572
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.133
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	432
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	160.1
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0041
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	10.02
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.16
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0074
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.368
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.382
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000886
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000885
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.91
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.05
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.789
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.762
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0953
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.101
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	42.5
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	0
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00059
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	204
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.05
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	<0.5

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.7
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000502
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.00047
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
1	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	134
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	134
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0138
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0496
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	0.0001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00011
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0629
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0667
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000186
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000247
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	46.6
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	46.6
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.14
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00013
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00019
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	303
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity, Field	uS/cm	342.7
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	0.00021
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	1.22
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	81.1
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	1149
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	DMSeO - Dimethylselenoxide	mg/L	<0.00001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.121
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	168
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	0.016
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.041
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0016
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0015
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	12.6
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	12.3
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00141
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.0019
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	0.0000107
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000587
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000714
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.126
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	470
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	153
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0048
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.25
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.26
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0098
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.361
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.394
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Se(IV) - Selenite	mg/L	<0.00002
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Se(VI) - Selenate	mg/L	0.000719
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	SeCN - Selenocyanate	mg/L	<0.00001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000923
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.00102
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium Unknown	mg/L	<0.00001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenosulphate	mg/L	<0.00001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	SeMe - Selenomethionine	mg/L	<0.00001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.92
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.11
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.698
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.731
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0847
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0884
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	41.3
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	1.1
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	0.00046
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00085
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	193
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.061
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	1.2
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	2.08
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	2.17
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.00045
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000436
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	0.0011

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	0.0324
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	135
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as HCO3)	mg/L	165
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CO3)	mg/L	<1
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as OH)	mg/L	<1
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	135
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0028
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0385
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Anion Sum	meq/L	3.61
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	0.0001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00011
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0605
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0668
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.000011
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000139
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	46
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	49.4
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cation - Anion Balance	%	95.3
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cation Sum	meq/L	3.44
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.13
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00017
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	316
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity, Field	uS/cm	184.5
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	0.65
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	81.2
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.83
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	DMSeO - Dimethylselenoxide	mg/L	<0.00001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.105
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	170
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ion balance (APHA)	%	2.41
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.028
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0016
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0017
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	13.4
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	13.8
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.0005
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00094
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	0.0000063
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000535
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000595
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.141
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	330
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0013
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.23
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.27
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.008
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.381
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.388
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Se(IV) - Selenite	mg/L	0.000031
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Se(VI) - Selenate	mg/L	0.000765
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	SeCN - Selenocyanate	mg/L	<0.00001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000913
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000891
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium Unknown	mg/L	<0.00001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenosulphate	mg/L	<0.00001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	SeMe - Selenomethionine	mg/L	<0.00001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.86
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.674
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.743
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Specific Conductivity	uS/cm	350.8
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0878
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0905
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	43
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphur (S)-Dissolved	mg/L	13.7
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphur (S)-Total	mg/L	15.7
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	0.1
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00076
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	165
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	<0.05
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	0.61
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.99
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000466
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000469
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
17	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	140
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	140
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0098
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0417
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00013
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.065
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0693
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000108
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000181
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	47.8
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	47.8
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.12
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00012
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00018
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	322
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity, Field	uS/cm	346.1
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	0.89
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	81.6
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.95
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.102
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	169
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	0.011
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.025
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0015
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0015
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	12
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	12.9
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00074
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00101
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	0.00000096
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000564
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000588
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.136
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	461
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	152.2
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0032
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.26
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.25
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.005
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.358
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.381
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000808
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000926
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.84
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.1
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.627
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.709
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.089
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0903
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	45.9
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	-0.1
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	0.00047
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00083
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	215
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.061
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	0.91
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	0.21
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.82
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000427
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000468
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	0.0015
22	2	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	2.9
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	141
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	141
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0059
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0277
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00011
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0686
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0704

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000106
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000161
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	46.9
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	54.7
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.13
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00015
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	325
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	0.61
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	82
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.96
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.114
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	171
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.019
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0015
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0019
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	13
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	15.4
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00059
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.0008
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	0.0000063
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000577
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.00058
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.147
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	0.0011
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	481
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	179.7
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	<0.001
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	6.68
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.28
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0062
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.368
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.396
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000901
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000898
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.91
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.05
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.707
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.748
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0911
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0954
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	44.5
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	0.1
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00063
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	178
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.063
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	0.54
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	0.71
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.54
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000465
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000476
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	0.0018
1	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	135
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	135
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0028
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0385
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	0.0001
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00011
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0605
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0668
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.000011
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000139
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	46
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	49.4
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.13
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00017
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	316

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	0.65
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.83
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.105
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	170
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.028
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0016
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0017
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	13.4
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	13.8
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.0005
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00094
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	0.0000063
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000535
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000595
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.141
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	330
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0013
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.23
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.27
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.008
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.381
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.388
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000913
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000891
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.86
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.674
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.743
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0878
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0905
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	43
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	0.1
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00076
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	165
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	<0.05
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	0.61
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.99
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000466
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000469
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
7	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	138
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	138
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0024
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0384
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	0.0075
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	0.0001
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00014
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0686
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0699
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.000098
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000162
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	47.7
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	48.5
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.16
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00011
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00022
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	325
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity, Field	uS/cm	1353
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	0.85
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	80.1
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.49
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.11
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	171
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.033
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0016
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0015
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	12.7
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	13.2
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00065
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00149
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	0.0000056

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000585
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000663
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.129
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	462
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	152.6
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.004
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.37
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.23
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0062
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.382
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.387
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000873
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000869
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.76
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.05
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.701
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.771
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0892
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0979
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	45.5
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	0.5
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	0.00011
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00077
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	210
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.063
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	1.12
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	3.8
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	1.29
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.5
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000506
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.00055
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
8	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	138
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	138
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0084
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.035
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00012
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0711
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0764
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.000012
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000208
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	40.2
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	50.9
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.15
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00013
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.0002
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	322
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity, Field	uS/cm	463.4
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	<0.5
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	80.4
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.73
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.107
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	155
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	0.036
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.028
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0016
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0019
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	13.2
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	14.5
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00132
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00164
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	0.0000071
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.0005
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000682
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.177
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	434
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	181.3
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0045
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.32
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.05
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0059
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.424
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.418
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000873
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000963

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.76
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.11
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.745
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.8
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0809
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.101
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	45.4
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	0
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00066
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	174
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	<0.05
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	0.54
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	5.9
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	1.41
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.84
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000441
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.00054
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	0.0022
15	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	142
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as HCO3)	mg/L	173
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CO3)	mg/L	<1
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as OH)	mg/L	<1
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	142
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.007
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0132
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Anion Sum	meq/L	3.83
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00013
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0704
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0651
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000081
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000101
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	45.1
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	51.2
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cation - Anion Balance	%	88.2
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cation Sum	meq/L	3.38
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.14
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.0001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00012
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	327
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity, Field	uS/cm	162.4
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	0.58
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	85.6
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	12.43
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	DMSeO - Dimethylselenoxide	mg/L	<0.00001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.109
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	167
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ion balance (APHA)	%	6.24
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.012
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0015
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.002
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	13.2
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	12.7
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00048
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00067
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	0.0000052
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000556
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000616
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.123
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	457
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0038
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.2
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.22
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0058
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.374
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.372
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Se(IV) - Selenite	mg/L	<0.00001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Se(VI) - Selenate	mg/L	0.000819
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	SeCN - Selenocyanate	mg/L	<0.00001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000815667
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000927
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium Unknown	mg/L	<0.00001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenosulphate	mg/L	<0.00001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	SeMe - Selenomethionine	mg/L	<0.00001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.93

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.08
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.753
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.699
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Specific Conductivity	uS/cm	308.8
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0871
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0942
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	47
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphur (S)-Dissolved	mg/L	15.9
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphur (S)-Total	mg/L	17.1
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	0.2
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0006
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	<0.0003
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	189
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	<0.05
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	0.65
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.42
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000475
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000508
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
16	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
22	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	83.8
22	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	12.22
22	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	103.6
22	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.25
22	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	0.1
22	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
22	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	1.71
22	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.87
28	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	78.9
28	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.35
28	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	276.7
28	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.21
28	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	0.3
28	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	3.9
28	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	7.5
28	3	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	8.82
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	103
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	103
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0265
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.212
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	0.00015
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00023
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0476
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0547
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000206
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000424
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	34.4
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	34.5
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.12
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00044
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	234
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	0.00048
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	0.00068
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	4.12
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	81.3
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.57
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.108
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	123
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	0.035
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.154
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	0.000111
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0011
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0013
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	9.07
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	10.5
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00164
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00413
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	0.00000262
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.00259
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000702
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	0.00052
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	0.00099
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0355
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	428
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	158.3
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0106
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.33
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.11
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0277
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.352
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.438
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000685
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.00089

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.97
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.55
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	0.000019
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.573
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.688
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.062
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0683
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	25.7
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	0.9
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	0.000013
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	0.00052
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00304
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	174
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.131
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	4.28
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	1.8
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	4.4
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000321
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000364
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	0.0011
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	0.0011
4	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	0.0039
11	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	83.3
11	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	12.14
11	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	135.1
11	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.21
11	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	0.01
11	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	5.5
11	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	0.385
11	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	8.06
19	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	77.3
19	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.75
19	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	125.6
19	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.4
19	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	1
19	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	2.8
19	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	6.74
19	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	4.88
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	69.4
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	69.4
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0638
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	1.01
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	0.0088
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	0.00014
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	0.0002
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00064
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0376
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0602
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	0.000092
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000549
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.000304
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	21.6
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	22.8
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.13
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00015
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.0017
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	0.00021
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	0.00083
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	150
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	0.00083
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	0.00255
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	9.14
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.32
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.082
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	77.8
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	0.085
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.85
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	0.00101
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	<0.001
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0016
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	5.79
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	5.85
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.0213
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.0497
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	0.0000138
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000408
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000458
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	0.00107
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	0.00365
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0194
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	447
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	105.5
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0146
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	7.98
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	7.96
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.142
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.445
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.651
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000532
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000669
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	2.08
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	3.36
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	0.000011

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	0.000079
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.544
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.526
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0415
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0449
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	13.9
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	1.8
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	0.000078
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	0.00186
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.0116
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	130
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.354
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	9.45
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	83.5
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	46.96
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	62
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.00026
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000441
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	0.00057
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	0.00557
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	0.0017
25	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	0.0159
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	94.5
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	94.5
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0484
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.271
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	0.00015
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00024
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0426
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0452
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	0.000021
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000386
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000608
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	29.9
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	29.5
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	<0.1
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00014
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00056
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	0.00018
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	0.00028
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	200
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	0.00068
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	0.00073
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	5.85
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	82.6
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.65
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.053
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	110
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	0.064
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.204
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	0.000159
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0011
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0012
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	8.64
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	8.04
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.0185
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.0209
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	0.0000051
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000474
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000508
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	0.00074
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	0.00105
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0244
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	263
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	142
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.011
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.15
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	7.94
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0227
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.405
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.422
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000695
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000652
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	2.08
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.46
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	0.000023
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.646
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.61
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0565
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0594
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	18.2
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	1.3
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	0.000018
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	0.00058
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00475
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	114
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.175
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	6.21
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	10.2

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	8.38
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000307
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.00035
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	0.00142
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	0.0058
26	4	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	0.0052
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	109
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	2.4
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	111
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0146
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0818
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	0.00012
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00014
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0427
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0444
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000115
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000214
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	34.4
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	34.7
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	<0.1
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.0001
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00029
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	236
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	0.00032
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	2.98
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.4
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.12
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	126
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	0.013
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.059
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0011
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0013
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	9.83
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	9.62
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00081
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00209
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000556
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000737
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0085
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	516
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	89.7
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0026
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.39
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.41
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.011
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.343
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.378
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000743
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.00072
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.99
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.11
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.631
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.666
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0692
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0695
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	19.2
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	2.6
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00161
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	116
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.117
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	3.06
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	1.8
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	1.57
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	1.61
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000353
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000385
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
5	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
11	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.85
11	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	155.1
11	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.35
11	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	1.8
11	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	1.7
11	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	1.53
11	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	1.13
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	128
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	128
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0048
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.108
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00016
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0374
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0382
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000084
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.000022
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	33.9
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	34.3
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.24
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00018
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	233
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	0.00022
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	2.09
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	82.8
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.46
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.11
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	121
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.098
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	0.000087
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0011
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0013
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	8.91
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	9.55
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00021
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00484
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000555
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000548
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0693
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	0.0011
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	344
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	154.4
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0021
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.24
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.15
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0153
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.308
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.36
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000546
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000638
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.65
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	1.92
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.576
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.632
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0708
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0698
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	16.8
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	2
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00196
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	106
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.12
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	2.2
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	4.9
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	2.47
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000334
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000367
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
17	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	119
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	119
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0087
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0333
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00013
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0438
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0435
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000105

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.000267
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	38.5
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	38.3
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	<0.1
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.0001
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00015
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	245
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	0.00028
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	1.89
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	83.5
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.29
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.131
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	137
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	0.014
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.028
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0013
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0013
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	10
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	11.2
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00105
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.0033
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000618
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.00061
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0196
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	284
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	205.1
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0019
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.27
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.32
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0086
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.322
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.364
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000612
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000625
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.86
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.07
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.604
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.677
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0684
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0789
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	16.1
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	2.8
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00036
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	161
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.087
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	1.87
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	8.8
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	1.14
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000373
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000394
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	0.001
24	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	108
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	108
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0048
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0412
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00012
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0375
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0383
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.000078
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.000184
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	32.3
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	30
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	<0.1
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00014
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	216
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	0.00026
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	2.64
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	82.1
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.42
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.11
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	117
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.04

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0013
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0013
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	8.88
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	9.21
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00021
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.0024
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000548
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000513
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0361
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	0.0028
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	304
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	93.6
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0031
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.19
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.18
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0098
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.325
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.316
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000487
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000622
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.87
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	1.9
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.588
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.56
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0644
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0696
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	8.98
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	1.7
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00089
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	130
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.068
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	2.51
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	5.6
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	1.31
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000298
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000327
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
31	5	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	114
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	114
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0046
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0925
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00017
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.034
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0347
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.000052
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000204
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	28.9
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	31.4
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	<0.1
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00023
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	206
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	0.00024
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	2.55
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.22
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.104
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	108
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.104
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	0.000082
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0011
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0012
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	8.71
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	9.05
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00018
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.0054
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000481
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000494
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	0.0005
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0299
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	231
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	211.4
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0022

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.14
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.13
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0195
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.307
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.333
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000492
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000479
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.89
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	1.96
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.522
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.54
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0585
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0636
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	7.8
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	3
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00119
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	127
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.111
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	2.52
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	9
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	4.77
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	2.81
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000262
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.00029
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
7	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	108
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	108
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0077
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0876
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	0.0079
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00013
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0322
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0346
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.000008
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000172
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	28.8
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	30.6
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	<0.1
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00011
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00023
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	192
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	2.53
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.33
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.092
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	107
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.094
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	0.000076
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0011
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0013
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	8.53
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	8.69
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00035
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00506
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000495
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000534
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0443
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	343
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	115.7
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0062
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.35
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.16
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0144
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.293
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.351
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000382
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000454
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.85
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.12
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.51
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.544
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0592
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0626
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	7.74
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	1.8
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00083
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	133
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.081
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	2.75
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	5.5
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	3.62
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	3.41
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.00027
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000293
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
14	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	111
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	111
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0044
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.258
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00028
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0315
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0367
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.001
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000067
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.000038
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	26.8
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	29.6
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.11
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00011
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00051
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	0.00017
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	200
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	0.00028
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	0.00071
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	2.28
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	10.5
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.091
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	98.4
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.365
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	0.000234
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.001
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0015
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	7.65
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	8.11
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00029
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.017
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000494
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000508
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	0.00077
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0457
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	281
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	184.1
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.002
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.1
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.27
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0326
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.338
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.477
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000402
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000424
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.79
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.31
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.461
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.508
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0582
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0563
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	7.18
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	4.2
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	0.000011
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00189
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	135
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.216
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	3.28
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	18.7
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	9.24
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	7.07
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000265
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000302
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	0.0013
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
20	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	0.0041
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	113
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as HCO3)	mg/L	138
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CO3)	mg/L	<1
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as OH)	mg/L	<1
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	113
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0028
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0604
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Anion Sum	meq/L	2.48
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	0.00011
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00013
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0322
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0336
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000071
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.000011
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	31.7
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	31
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cation - Anion Balance	%	92.7
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cation Sum	meq/L	2.3
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.13
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00014
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	212
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity, Field	uS/cm	161.6
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	1.48
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	83.1
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	10.45
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	DMSeO - Dimethylselenoxide	mg/L	<0.00001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.133
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	113
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ion balance (APHA)	%	3.76
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.074
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	0.000063
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0015
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0014
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	8.3
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	8.45
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00023
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.0036
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000564
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.00053
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0256
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	266
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	196.2
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0033
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	7.92
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.1
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0092
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.317
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.335
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Se(IV) - Selenite	mg/L	0.000015
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Se(VI) - Selenate	mg/L	0.000356
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	SeCN - Selenocyanate	mg/L	<0.00001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000459
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000393667
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium Unknown	mg/L	<0.00001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenosulphate	mg/L	<0.00001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	SeMe - Selenomethionine	mg/L	<0.00001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.8
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	1.85
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.515
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.526
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Specific Conductivity	uS/cm	252.9
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.063
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0644
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	9.94
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphur (S)-Dissolved	mg/L	3.38
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphur (S)-Total	mg/L	3.48
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	6.05
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	0.00013
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00055
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	132
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.079
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	2.02
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	5.15
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	1.38
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	1.89
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.00033
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000326
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
27	6	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	124
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	3.6
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	127
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0028
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0151
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00012
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0374
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0383
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.000072
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.000111
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	33.1
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	36.2
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	<0.1
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.0001
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00013
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	217
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	0.00021
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	1.26
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	84.6
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	9.96
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.12
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	119
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.021
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0012
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0012
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	8.85
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	9.26
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00027
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00192
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000608
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000626
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	<0.005
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	283
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	128.7
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.002
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.32
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.36
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0065
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.353
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.376
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000441
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000499
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.76
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	1.96
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.535
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.536
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0629
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0685
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	13.1
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	8.2
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	<0.0003
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	135
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.132
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	1.35
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	1.9
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	1.2
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.82
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000334
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000353
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
7	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
13	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	9.42
13	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	104.9
13	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.5
13	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	9.4
13	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	10.8
13	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	1.31
13	7	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.23
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	139
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	9.2
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	148
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0014
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0041
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00011
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.069
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0716
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000095
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000126
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	47.4
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	50.7
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.15
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00012
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00012
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	320
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	0.79
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	82.2
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	9.2
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.119
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	174
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	<0.01
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0019
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0021
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	13.6
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	13.9
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00023
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00054
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000754
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000779
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.01
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	375
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	219.4
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	<0.001
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.38
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.42
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.004
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.46
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.466
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000769
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.00113
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	2.26
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.15
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.629
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.676
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0999
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.101
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	34.6
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	10.3
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	<0.0003
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	204
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	<0.05
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	0.67
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	2.3
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.16
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.00043
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000488
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
16	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	150
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	6
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	156
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	<0.001
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0056
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	0.00012
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00011
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0743
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0679
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000092
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000098
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	47
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	51.6
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.13

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00012
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	314
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	<0.5
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	8.5
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	74.8
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.152
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	174
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	<0.01
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0015
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0018
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	13.9
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	13.8
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00024
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00049
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000687
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000697
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0141
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	311
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	134.6
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0022
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.18
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.45
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0035
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.474
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.455
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000814
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000628
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	2.25
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.19
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.652
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.657
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.102
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.1
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	37.9
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	9.7
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	<0.0003
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	203
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	<0.05
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	<0.5
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	0.03
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.15
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000431
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000448
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
23	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	141
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	6.6
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	147
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0016
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	<0.0165
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	0.0065
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	0.0001
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00018
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0695
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0665
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.000083
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000114
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	48.3
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	49.4
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	<0.1
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00011
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00015
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	317
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	0.51
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	83
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	9.9
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.027
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	177
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	<0.01
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0019

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0017
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	13.6
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	13.7
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00021
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00069
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000661
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000683
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0438
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	303
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	148.2
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	<0.001
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.18
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.33
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0057
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.421
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.426
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000791
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000673
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	2.14
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.16
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.637
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.645
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.103
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.103
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	7.62
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	7.6
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	<0.0003
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	199
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.055
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	0.71
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	1.2
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.34
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.00042
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000424
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.003
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
30	8	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	148
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	8.4
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	156
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	<0.001
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0059
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00018
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0807
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0706
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000099
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000098
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	52.6
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	50.8
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.14
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00011
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	<0.0001
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	322
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	<0.5
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	83.2
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	10.12
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.155
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	188
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	<0.01
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0019
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.002
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	13.7
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	13.6
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.0002
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00044
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.00072
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000652
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0181
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	309
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	152.8
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	<0.001
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.2

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.41
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0031
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.414
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.407
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000805
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000734
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	2.04
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.08
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.636
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.616
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.107
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0989
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	38.1
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	6.9
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	<0.0003
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	211
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	<0.05
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	<0.5
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	-2.3
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.12
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000442
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000418
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.001
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
6	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	150
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	4.2
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	154
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.0029
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.028
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	0.00012
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00018
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0878
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0715
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.000009
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000148
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	53.6
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	51.1
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.14
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00013
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00017
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	325
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	0.76
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	8.24
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.132
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	194
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.026
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.002
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0014
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	14.6
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	14.8
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00026
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00231
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000775
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000673
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0114
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	327
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	151
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	<0.001
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.2
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.31
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0079
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.434
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.437
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.001
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000736
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	2.01
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	2.14
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.665
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.635
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.106
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.103
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	40.8
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	14.27
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00056
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	203
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	<0.05
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	0.74
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	2
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Field	NTU	1.25
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.46
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000489
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.00046
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	0.00072
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
13	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	139
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as HCO3)	mg/L	170
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	5.8
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CO3)	mg/L	3.5
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as OH)	mg/L	<1
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	145
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	<0.001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0643
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Anion Sum	meq/L	3.78
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	0.00011
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00018
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0731
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0742
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000103
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000118
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	47.6
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	47.1
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cation - Anion Balance	%	92.6
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cation Sum	meq/L	3.5
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.14
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00023
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	333
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity, Field	uS/cm	190.3
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	<0.5
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	83
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	9.7
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	DMSeO - Dimethylselenoxide	mg/L	<0.00001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.147
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	173
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ion balance (APHA)	%	3.85
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.023
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0012
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0017
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	13.2
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	13.8
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00012
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00056
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000672
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000635
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.009
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	303
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	<0.001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.46
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.41
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0047
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.371
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.435
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Se(IV) - Selenite	mg/L	<0.00002
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Se(VI) - Selenate	mg/L	0.000618
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	SeCN - Selenocyanate	mg/L	<0.00001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000795
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000744
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium Unknown	mg/L	<0.00001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenosulphate	mg/L	<0.00001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	SeMe - Selenomethionine	mg/L	<0.00001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.95
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	1.76
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.607
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.656
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Specific Conductivity	uS/cm	277.7
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.1
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.1
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	41.7
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphur (S)-Dissolved	mg/L	15.5
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphur (S)-Total	mg/L	15.3
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	8.5

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00181
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	166
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	<0.5
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	<0.5
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	1.12
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000391
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000467
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	0.00093
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
19	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
29	9	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	184.3
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	154
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	3
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	157
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	<0.001
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0106
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	0.005
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.0001
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0621
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0714
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000087
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000175
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	47.4
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	46.1
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.16
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00011
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00015
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	326
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	<0.5
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	84.5
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	10.36
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.131
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	169
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.023
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0014
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0015
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	12.3
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	14.3
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00032
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.001
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000654
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000577
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0105
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	292
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	142.1
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	0.0031
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.34
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.34
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0075
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.353
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.412
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000849
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000644
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.74
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	1.86
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.551
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.659
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0885
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0945
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	46.9
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	6.6
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	<0.0003
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	200
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.061
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	<0.5
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	2.6
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.38
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000456
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000415
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
11	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	156
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	156
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	<0.001
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0042
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.00011
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0737
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0647
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.000009
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000146
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	54.4
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	54.6
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.17
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.0001
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	324
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	<0.5
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	86.4
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	10.9
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.149
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	195
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	<0.01
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0016
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0014
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	14.4
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	14.5
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00015
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00034
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000663
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000587
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.01
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	284
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	155
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	<0.001
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.2
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.21
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0022
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.401
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.392
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.00107
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000828
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.85
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	1.83
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.563
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.623
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.108
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.101
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	47.7
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	5.4
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	<0.0003
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	218
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.056
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	<0.5
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.17
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000357
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.00044
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	0.0012
18	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	161
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	8.4
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	169
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	<0.001
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.005
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	<0.0001
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0798
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0863
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	<0.000005
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000057
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	54.5
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	47.9
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.16
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00011
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00012
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	326
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	<0.5
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	77.1
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	10.56
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.143
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	200
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	<0.01
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0017
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0016
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	15.4
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	13.5
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00019
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00042
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000581
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000568
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0095
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	257
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	149.4
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	<0.001
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.22
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.42
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0029
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.405
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.35
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.000891
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000811
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.78
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	1.65
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.68
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.602
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.103
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0938
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	46.8
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	2.3
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	<0.0003
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	210
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.063
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	<0.5
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.24
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000519
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000445
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
25	10	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	128
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	7.2
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	136
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	<0.001
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0109
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	<0.0001
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.067
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0635
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000079
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.000009
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	46.8
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	46
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.22
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00015
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	329
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	<0.5
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	74.5
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	10.2

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.142
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	177
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	<0.01
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0014
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0014
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	14.6
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	14.2
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00013
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00038
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000602
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000611
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0325
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	349
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	120.9
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	<0.001
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.49
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.41
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0039
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.369
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.368
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.00103
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000818
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.56
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	1.62
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.619
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.619
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0952
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.086
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	45.6
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	2.3
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	<0.0003
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	186
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.092
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	<0.5
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.32
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000447
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000451
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
1	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	141
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	3.2
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	144
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	0.001
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0434
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.0001
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0714
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0639
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000093
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000157
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	47.4
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	50
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.22
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00024
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	338
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	0.66
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	84.8
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	12.37
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.136
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	171
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	0.049
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0016
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0018
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	12.8
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	13
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00046
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00242
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000604
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000639
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.0531
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	280
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	125
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	<0.001
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.55
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.33
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0052
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.408
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.363
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.00107
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000913
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.7
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	1.72
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.694
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.581
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0988
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0981
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	47.8
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	0
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	0.00057
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	191
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.06
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	0.6
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	9
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	0.66
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000481
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000519
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
8	11	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	141
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	141
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	<0.001
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0038
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	0.0001
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	0.0001
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.068
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0631
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000081
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000099
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	51.5
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	51.4
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.18
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00013
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00016
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	321
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	<0.5
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	78.4
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.47
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.139
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	192
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	<0.01
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0016
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0011
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	15.4
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	15.1
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	0.00013
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00025
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000554
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000551
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.113
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	444
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP, Field	mV	144
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	<0.001
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	8.08
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.21
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0048
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.382
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.358
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.00115
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.00071
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.93
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	1.67
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.653
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.637

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0959
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0941
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	49
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	0.55
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	<0.0003
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	224
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.066
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	<0.5
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	<0.1
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.000521
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000456
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
1	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Acidity (as CaCO3)	mg/L	<2
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	132
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Bicarbonate (as HCO3)	mg/L	162
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CaCO3)	mg/L	5
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Carbonate (as CO3)	mg/L	3
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Hydroxide (as OH)	mg/L	<1
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Alkalinity, Total (as CaCO3)	mg/L	137
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Dissolved	mg/L	<0.001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Aluminum (Al)-Total	mg/L	0.0051
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Ammonia, Total (as N)	mg/L	<0.005
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Anion Sum	meq/L	3.79
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Antimony (Sb)-Total	mg/L	<0.0001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Dissolved	mg/L	<0.0001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Arsenic (As)-Total	mg/L	<0.0001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Dissolved	mg/L	0.0722
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Barium (Ba)-Total	mg/L	0.0652
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Beryllium (Be)-Total	mg/L	<0.00002
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bismuth (Bi)-Total	mg/L	<0.00005
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Dissolved	mg/L	<0.01
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Boron (B)-Total	mg/L	<0.01
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Bromide (Br)	mg/L	<0.05
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Dissolved	mg/L	0.0000076
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cadmium (Cd)-Total	mg/L	0.0000083
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Dissolved	mg/L	51.3
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Calcium (Ca)-Total	mg/L	50.2
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cation - Anion Balance	%	101
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cation Sum	meq/L	3.82
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chloride (Cl)	mg/L	0.17
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Dissolved	mg/L	0.00011
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Chromium (Cr)-Total	mg/L	0.00014
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Cobalt (Co)-Total	mg/L	<0.0001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity	uS/cm	333
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Conductivity, Field	uS/cm	203
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Dissolved	mg/L	<0.0002
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Copper (Cu)-Total	mg/L	<0.0005
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Organic Carbon	mg/L	<0.5
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	%	80.9
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	11.8
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	DMSeO - Dimethylselenoxide	mg/L	<0.00001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Fluoride	mg/L	0.134
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Hardness - Dissolved (as CaCO3)	mg/L	189
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ion balance (APHA)	%	0.39
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Dissolved	mg/L	<0.01
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Iron (Fe)-Total	mg/L	<0.01
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Dissolved	mg/L	<0.00005
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lead (Pb)-Total	mg/L	<0.00005
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Dissolved	mg/L	0.0012
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Lithium (Li)-Total	mg/L	0.0015
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Dissolved	mg/L	14.8
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Magnesium (Mg)-Total	mg/L	15.5
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Dissolved	mg/L	<0.0001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Manganese (Mn)-Total	mg/L	0.00015
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Mercury (Hg)-Total	mg/L	<0.000005
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Dissolved	mg/L	0.000567
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Molybdenum (Mo)-Total	mg/L	0.000571
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nickel (Ni)-Total	mg/L	<0.0005
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrate (as N)	mg/L	0.127
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Nitrite (as N)	mg/L	<0.001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	ORP	mV	331
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Orthophosphate	mg/L	<0.001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	7.84
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Lab	pH	8.3
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Phosphorus (P)-Total	mg/L	0.0031
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Dissolved	mg/L	0.362
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Potassium (K)-Total	mg/L	0.371
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Se(IV) - Selenite	mg/L	<0.00002
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Se(VI) - Selenate	mg/L	0.000764
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	SeCN - Selenocyanate	mg/L	<0.00001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Dissolved	mg/L	0.0009165
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium (Se)-Total	mg/L	0.000844
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenium Unknown	mg/L	<0.00001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Selenosulphate	mg/L	<0.00001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	SeMe - Selenomethionine	mg/L	<0.00001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Dissolved	mg/L	1.8
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silicon (Si)-Total	mg/L	1.85
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Dissolved	mg/L	<0.00001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Silver (Ag)-Total	mg/L	<0.00001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Dissolved	mg/L	0.674
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sodium (Na)-Total	mg/L	0.652
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Specific Conductivity	uS/cm	392
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Dissolved	mg/L	0.0929

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Strontium (Sr)-Total	mg/L	0.0921
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphate	mg/L	49.4
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphur (S)-Dissolved	mg/L	17.1
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Sulphur (S)-Total	mg/L	17.7
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	0
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Thallium (Tl)-Total	mg/L	<0.00001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Dissolved	mg/L	<0.0001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Tin (Sn)-Total	mg/L	<0.0001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Titanium (Ti)-Total	mg/L	<0.0003
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Dissolved Solids	mg/L	225
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Kjeldahl Nitrogen	mg/L	0.522
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Organic Carbon	mg/L	<0.5
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Total Suspended Solids	mg/L	<1
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Turbidity, Lab	NTU	<0.1
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Dissolved	mg/L	0.00053
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Uranium (U)-Total	mg/L	0.000488
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Dissolved	mg/L	<0.0005
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Vanadium (V)-Total	mg/L	<0.0005
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Dissolved	mg/L	<0.001
5	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Zinc (Zn)-Total	mg/L	<0.003
14	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Dissolved Oxygen, Field	mg/L	12.16
14	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	pH, Field	pH	7.98
14	12	2022	FR_UFR1 (RG_URF1)	FR_UFR1	Temperature, Field	deg c	0.2
21	1	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Bicarbonate (as CaCO3)	mg/L	226
21	1	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Bicarbonate (as HCO3)	mg/L	276
21	1	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
21	1	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Carbonate (as CO3)	mg/L	<1
21	1	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
21	1	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Hydroxide (as OH)	mg/L	<1
21	1	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Total (as CaCO3)	mg/L	226
21	1	2022	RG_FRGHSC	RG_FRGHSC	Aluminum (Al)-Dissolved	mg/L	<0.001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Aluminum (Al)-Total	mg/L	0.0033
21	1	2022	RG_FRGHSC	RG_FRGHSC	Ammonia, Total (as N)	mg/L	0.0064
21	1	2022	RG_FRGHSC	RG_FRGHSC	Anion Sum	meq/L	15.3
21	1	2022	RG_FRGHSC	RG_FRGHSC	Antimony (Sb)-Dissolved	mg/L	<0.0001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Antimony (Sb)-Total	mg/L	<0.0001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Arsenic (As)-Dissolved	mg/L	<0.0001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Arsenic (As)-Total	mg/L	0.00012
21	1	2022	RG_FRGHSC	RG_FRGHSC	Barium (Ba)-Dissolved	mg/L	0.104
21	1	2022	RG_FRGHSC	RG_FRGHSC	Barium (Ba)-Total	mg/L	0.103
21	1	2022	RG_FRGHSC	RG_FRGHSC	Beryllium (Be)-Dissolved	mg/L	<0.00002
21	1	2022	RG_FRGHSC	RG_FRGHSC	Beryllium (Be)-Total	mg/L	<0.00002
21	1	2022	RG_FRGHSC	RG_FRGHSC	Bismuth (Bi)-Dissolved	mg/L	<0.00005
21	1	2022	RG_FRGHSC	RG_FRGHSC	Bismuth (Bi)-Total	mg/L	<0.00005
21	1	2022	RG_FRGHSC	RG_FRGHSC	Boron (B)-Dissolved	mg/L	0.017
21	1	2022	RG_FRGHSC	RG_FRGHSC	Boron (B)-Total	mg/L	0.017
21	1	2022	RG_FRGHSC	RG_FRGHSC	Bromide (Br)	mg/L	<0.25
21	1	2022	RG_FRGHSC	RG_FRGHSC	Cadmium (Cd)-Dissolved	mg/L	0.0000464
21	1	2022	RG_FRGHSC	RG_FRGHSC	Cadmium (Cd)-Total	mg/L	0.0000464
21	1	2022	RG_FRGHSC	RG_FRGHSC	Calcium (Ca)-Dissolved	mg/L	176
21	1	2022	RG_FRGHSC	RG_FRGHSC	Calcium (Ca)-Total	mg/L	168
21	1	2022	RG_FRGHSC	RG_FRGHSC	Cation - Anion Difference	%	0.328
21	1	2022	RG_FRGHSC	RG_FRGHSC	Cation - Anion Ratio	%	99.3
21	1	2022	RG_FRGHSC	RG_FRGHSC	Cation Sum	meq/L	15.2
21	1	2022	RG_FRGHSC	RG_FRGHSC	Chloride (Cl)	mg/L	2.14
21	1	2022	RG_FRGHSC	RG_FRGHSC	Chromium (Cr)-Dissolved	mg/L	0.00013
21	1	2022	RG_FRGHSC	RG_FRGHSC	Chromium (Cr)-Total	mg/L	0.00016
21	1	2022	RG_FRGHSC	RG_FRGHSC	Cobalt (Co)-Dissolved	mg/L	<0.0001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Cobalt (Co)-Total	mg/L	<0.0001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Conductivity	uS/cm	1310
21	1	2022	RG_FRGHSC	RG_FRGHSC	Conductivity, Field	uS/cm	887
21	1	2022	RG_FRGHSC	RG_FRGHSC	Copper (Cu)-Dissolved	mg/L	<0.0002
21	1	2022	RG_FRGHSC	RG_FRGHSC	Copper (Cu)-Total	mg/L	<0.0005
21	1	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Organic Carbon	mg/L	0.76
21	1	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Oxygen, Field	%	78.7
21	1	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Oxygen, Field	mg/L	10.05
21	1	2022	RG_FRGHSC	RG_FRGHSC	DMSeO - Dimethylselenoxide	mg/L	<0.00001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Fluoride	mg/L	0.111
21	1	2022	RG_FRGHSC	RG_FRGHSC	Hardness - Dissolved (as CaCO3)	mg/L	748
21	1	2022	RG_FRGHSC	RG_FRGHSC	Iron (Fe)-Dissolved	mg/L	<0.01
21	1	2022	RG_FRGHSC	RG_FRGHSC	Iron (Fe)-Total	mg/L	<0.01
21	1	2022	RG_FRGHSC	RG_FRGHSC	Lead (Pb)-Dissolved	mg/L	<0.00005
21	1	2022	RG_FRGHSC	RG_FRGHSC	Lead (Pb)-Total	mg/L	<0.00005
21	1	2022	RG_FRGHSC	RG_FRGHSC	Lithium (Li)-Dissolved	mg/L	0.0634
21	1	2022	RG_FRGHSC	RG_FRGHSC	Lithium (Li)-Total	mg/L	0.0618
21	1	2022	RG_FRGHSC	RG_FRGHSC	Magnesium (Mg)-Dissolved	mg/L	75
21	1	2022	RG_FRGHSC	RG_FRGHSC	Magnesium (Mg)-Total	mg/L	78.9
21	1	2022	RG_FRGHSC	RG_FRGHSC	Manganese (Mn)-Dissolved	mg/L	0.00016
21	1	2022	RG_FRGHSC	RG_FRGHSC	Manganese (Mn)-Total	mg/L	0.0002
21	1	2022	RG_FRGHSC	RG_FRGHSC	Mercury (Hg)-Dissolved	mg/L	<0.000005
21	1	2022	RG_FRGHSC	RG_FRGHSC	Mercury (Hg)-Total	mg/L	<0.000005
21	1	2022	RG_FRGHSC	RG_FRGHSC	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
21	1	2022	RG_FRGHSC	RG_FRGHSC	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Molybdenum (Mo)-Dissolved	mg/L	0.00069
21	1	2022	RG_FRGHSC	RG_FRGHSC	Molybdenum (Mo)-Total	mg/L	0.00065
21	1	2022	RG_FRGHSC	RG_FRGHSC	Nickel (Ni)-Dissolved	mg/L	<0.0005
21	1	2022	RG_FRGHSC	RG_FRGHSC	Nickel (Ni)-Total	mg/L	<0.0005
21	1	2022	RG_FRGHSC	RG_FRGHSC	Nitrate (as N)	mg/L	31.6
21	1	2022	RG_FRGHSC	RG_FRGHSC	Nitrite (as N)	mg/L	<0.005
21	1	2022	RG_FRGHSC	RG_FRGHSC	ORP	mV	426
21	1	2022	RG_FRGHSC	RG_FRGHSC	Orthophosphate	mg/L	0.0025
21	1	2022	RG_FRGHSC	RG_FRGHSC	pH, Field	pH	7.65
21	1	2022	RG_FRGHSC	RG_FRGHSC	pH, Lab	pH	8.06
21	1	2022	RG_FRGHSC	RG_FRGHSC	Phosphorus (P)-Total	mg/L	0.0039
21	1	2022	RG_FRGHSC	RG_FRGHSC	Potassium (K)-Dissolved	mg/L	2.72
21	1	2022	RG_FRGHSC	RG_FRGHSC	Potassium (K)-Total	mg/L	2.7
21	1	2022	RG_FRGHSC	RG_FRGHSC	Se(IV) - Selenite	mg/L	0.000068
21	1	2022	RG_FRGHSC	RG_FRGHSC	Se(VI) - Selenate	mg/L	0.102
21	1	2022	RG_FRGHSC	RG_FRGHSC	SeCN - Selenocyanate	mg/L	<0.00001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Selenium (Se)-Dissolved	mg/L	0.1225
21	1	2022	RG_FRGHSC	RG_FRGHSC	Selenium (Se)-Total	mg/L	0.117666667
21	1	2022	RG_FRGHSC	RG_FRGHSC	Selenium Unknown	mg/L	<0.00001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Selenosulphate	mg/L	<0.00001
21	1	2022	RG_FRGHSC	RG_FRGHSC	SeMe - Selenomethionine	mg/L	<0.00001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Silicon (Si)-Dissolved	mg/L	2.48
21	1	2022	RG_FRGHSC	RG_FRGHSC	Silicon (Si)-Total	mg/L	2.24
21	1	2022	RG_FRGHSC	RG_FRGHSC	Silver (Ag)-Dissolved	mg/L	<0.00001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Silver (Ag)-Total	mg/L	<0.00001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Sodium (Na)-Dissolved	mg/L	3.86

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
21	1	2022	RG_FRGHSC	RG_FRGHSC	Sodium (Na)-Total	mg/L	3.87
21	1	2022	RG_FRGHSC	RG_FRGHSC	Specific Conductivity	uS/cm	1445
21	1	2022	RG_FRGHSC	RG_FRGHSC	Strontium (Sr)-Dissolved	mg/L	0.193
21	1	2022	RG_FRGHSC	RG_FRGHSC	Strontium (Sr)-Total	mg/L	0.188
21	1	2022	RG_FRGHSC	RG_FRGHSC	Sulphate	mg/L	406
21	1	2022	RG_FRGHSC	RG_FRGHSC	Sulphur (S)-Dissolved	mg/L	150
21	1	2022	RG_FRGHSC	RG_FRGHSC	Sulphur (S)-Total	mg/L	137
21	1	2022	RG_FRGHSC	RG_FRGHSC	Temperature, Field	deg c	4.8
21	1	2022	RG_FRGHSC	RG_FRGHSC	Thallium (Tl)-Dissolved	mg/L	<0.00001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Thallium (Tl)-Total	mg/L	<0.00001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Tin (Sn)-Dissolved	mg/L	<0.0001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Tin (Sn)-Total	mg/L	<0.0001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Titanium (Ti)-Dissolved	mg/L	<0.0003
21	1	2022	RG_FRGHSC	RG_FRGHSC	Titanium (Ti)-Total	mg/L	<0.0003
21	1	2022	RG_FRGHSC	RG_FRGHSC	Total Dissolved Solids	mg/L	955
21	1	2022	RG_FRGHSC	RG_FRGHSC	Total Kjeldahl Nitrogen	mg/L	<0.05
21	1	2022	RG_FRGHSC	RG_FRGHSC	Total Organic Carbon	mg/L	0.83
21	1	2022	RG_FRGHSC	RG_FRGHSC	Total Suspended Solids	mg/L	1.9
21	1	2022	RG_FRGHSC	RG_FRGHSC	Turbidity, Lab	NTU	0.11
21	1	2022	RG_FRGHSC	RG_FRGHSC	Uranium (U)-Dissolved	mg/L	0.00449
21	1	2022	RG_FRGHSC	RG_FRGHSC	Uranium (U)-Total	mg/L	0.00475
21	1	2022	RG_FRGHSC	RG_FRGHSC	Vanadium (V)-Dissolved	mg/L	<0.0005
21	1	2022	RG_FRGHSC	RG_FRGHSC	Vanadium (V)-Total	mg/L	<0.0005
21	1	2022	RG_FRGHSC	RG_FRGHSC	Zinc (Zn)-Dissolved	mg/L	<0.001
21	1	2022	RG_FRGHSC	RG_FRGHSC	Zinc (Zn)-Total	mg/L	<0.003
18	2	2022	RG_FRGHSC	RG_FRGHSC	Acidity (as CaCO3)	mg/L	10.8
18	2	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Bicarbonate (as CaCO3)	mg/L	274
18	2	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Bicarbonate (as HCO3)	mg/L	334
18	2	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
18	2	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Carbonate (as CO3)	mg/L	<1
18	2	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	2	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Hydroxide (as OH)	mg/L	<1
18	2	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Total (as CaCO3)	mg/L	274
18	2	2022	RG_FRGHSC	RG_FRGHSC	Aluminum (Al)-Dissolved	mg/L	<0.001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Aluminum (Al)-Total	mg/L	0.0034
18	2	2022	RG_FRGHSC	RG_FRGHSC	Ammonia, Total (as N)	mg/L	<0.005
18	2	2022	RG_FRGHSC	RG_FRGHSC	Anion Sum	meq/L	16.5
18	2	2022	RG_FRGHSC	RG_FRGHSC	Antimony (Sb)-Dissolved	mg/L	<0.0001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Antimony (Sb)-Total	mg/L	<0.0001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Arsenic (As)-Dissolved	mg/L	<0.0001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Arsenic (As)-Total	mg/L	<0.0001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Barium (Ba)-Dissolved	mg/L	0.0922
18	2	2022	RG_FRGHSC	RG_FRGHSC	Barium (Ba)-Total	mg/L	0.095
18	2	2022	RG_FRGHSC	RG_FRGHSC	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	2	2022	RG_FRGHSC	RG_FRGHSC	Beryllium (Be)-Total	mg/L	<0.00002
18	2	2022	RG_FRGHSC	RG_FRGHSC	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	2	2022	RG_FRGHSC	RG_FRGHSC	Bismuth (Bi)-Total	mg/L	<0.00005
18	2	2022	RG_FRGHSC	RG_FRGHSC	Boron (B)-Dissolved	mg/L	0.015
18	2	2022	RG_FRGHSC	RG_FRGHSC	Boron (B)-Total	mg/L	0.017
18	2	2022	RG_FRGHSC	RG_FRGHSC	Bromide (Br)	mg/L	<0.25
18	2	2022	RG_FRGHSC	RG_FRGHSC	Cadmium (Cd)-Dissolved	mg/L	0.0000432
18	2	2022	RG_FRGHSC	RG_FRGHSC	Cadmium (Cd)-Total	mg/L	0.0000443
18	2	2022	RG_FRGHSC	RG_FRGHSC	Calcium (Ca)-Dissolved	mg/L	175
18	2	2022	RG_FRGHSC	RG_FRGHSC	Calcium (Ca)-Total	mg/L	202
18	2	2022	RG_FRGHSC	RG_FRGHSC	Cation - Anion Difference	%	2.8
18	2	2022	RG_FRGHSC	RG_FRGHSC	Cation - Anion Ratio	%	94.5
18	2	2022	RG_FRGHSC	RG_FRGHSC	Cation Sum	meq/L	15.6
18	2	2022	RG_FRGHSC	RG_FRGHSC	Chloride (Cl)	mg/L	2.89
18	2	2022	RG_FRGHSC	RG_FRGHSC	Chromium (Cr)-Dissolved	mg/L	0.00013
18	2	2022	RG_FRGHSC	RG_FRGHSC	Chromium (Cr)-Total	mg/L	0.00018
18	2	2022	RG_FRGHSC	RG_FRGHSC	Cobalt (Co)-Dissolved	mg/L	<0.0001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Cobalt (Co)-Total	mg/L	<0.0001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Conductivity	uS/cm	1320
18	2	2022	RG_FRGHSC	RG_FRGHSC	Conductivity, Field	uS/cm	919
18	2	2022	RG_FRGHSC	RG_FRGHSC	Copper (Cu)-Dissolved	mg/L	<0.0002
18	2	2022	RG_FRGHSC	RG_FRGHSC	Copper (Cu)-Total	mg/L	<0.0005
18	2	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Organic Carbon	mg/L	0.8
18	2	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Oxygen, Field	%	79.2
18	2	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Oxygen, Field	mg/L	10.08
18	2	2022	RG_FRGHSC	RG_FRGHSC	DMSeO - Dimethylselenoxide	mg/L	<0.00001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Fluoride	mg/L	<0.1
18	2	2022	RG_FRGHSC	RG_FRGHSC	Hardness - Dissolved (as CaCO3)	mg/L	772
18	2	2022	RG_FRGHSC	RG_FRGHSC	Iron (Fe)-Dissolved	mg/L	<0.01
18	2	2022	RG_FRGHSC	RG_FRGHSC	Iron (Fe)-Total	mg/L	<0.01
18	2	2022	RG_FRGHSC	RG_FRGHSC	Lead (Pb)-Dissolved	mg/L	<0.00005
18	2	2022	RG_FRGHSC	RG_FRGHSC	Lead (Pb)-Total	mg/L	<0.00005
18	2	2022	RG_FRGHSC	RG_FRGHSC	Lithium (Li)-Dissolved	mg/L	0.0544
18	2	2022	RG_FRGHSC	RG_FRGHSC	Lithium (Li)-Total	mg/L	0.0702
18	2	2022	RG_FRGHSC	RG_FRGHSC	Magnesium (Mg)-Dissolved	mg/L	81.3
18	2	2022	RG_FRGHSC	RG_FRGHSC	Magnesium (Mg)-Total	mg/L	96.5
18	2	2022	RG_FRGHSC	RG_FRGHSC	Manganese (Mn)-Dissolved	mg/L	0.00016
18	2	2022	RG_FRGHSC	RG_FRGHSC	Manganese (Mn)-Total	mg/L	0.00026
18	2	2022	RG_FRGHSC	RG_FRGHSC	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	2	2022	RG_FRGHSC	RG_FRGHSC	Mercury (Hg)-Total	mg/L	<0.000005
18	2	2022	RG_FRGHSC	RG_FRGHSC	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
18	2	2022	RG_FRGHSC	RG_FRGHSC	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Molybdenum (Mo)-Dissolved	mg/L	0.00064
18	2	2022	RG_FRGHSC	RG_FRGHSC	Molybdenum (Mo)-Total	mg/L	0.000716
18	2	2022	RG_FRGHSC	RG_FRGHSC	Nickel (Ni)-Dissolved	mg/L	<0.0005
18	2	2022	RG_FRGHSC	RG_FRGHSC	Nickel (Ni)-Total	mg/L	<0.0005
18	2	2022	RG_FRGHSC	RG_FRGHSC	Nitrate (as N)	mg/L	32
18	2	2022	RG_FRGHSC	RG_FRGHSC	Nitrite (as N)	mg/L	<0.005
18	2	2022	RG_FRGHSC	RG_FRGHSC	ORP	mV	376
18	2	2022	RG_FRGHSC	RG_FRGHSC	Orthophosphate	mg/L	0.0015
18	2	2022	RG_FRGHSC	RG_FRGHSC	pH, Field	pH	7.5
18	2	2022	RG_FRGHSC	RG_FRGHSC	pH, Lab	pH	8.11
18	2	2022	RG_FRGHSC	RG_FRGHSC	Phosphorus (P)-Total	mg/L	0.0026
18	2	2022	RG_FRGHSC	RG_FRGHSC	Potassium (K)-Dissolved	mg/L	2.49
18	2	2022	RG_FRGHSC	RG_FRGHSC	Potassium (K)-Total	mg/L	2.64
18	2	2022	RG_FRGHSC	RG_FRGHSC	Se(IV) - Selenite	mg/L	0.000079
18	2	2022	RG_FRGHSC	RG_FRGHSC	Se(VI) - Selenate	mg/L	0.115
18	2	2022	RG_FRGHSC	RG_FRGHSC	SeCN - Selenocyanate	mg/L	<0.00001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Selenium (Se)-Dissolved	mg/L	0.117
18	2	2022	RG_FRGHSC	RG_FRGHSC	Selenium (Se)-Total	mg/L	0.119
18	2	2022	RG_FRGHSC	RG_FRGHSC	Selenium Unknown	mg/L	<0.00001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Selenosulphate	mg/L	<0.00001
18	2	2022	RG_FRGHSC	RG_FRGHSC	SeMe - Selenomethionine	mg/L	<0.00001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Silicon (Si)-Dissolved	mg/L	2.38
18	2	2022	RG_FRGHSC	RG_FRGHSC	Silicon (Si)-Total	mg/L	2.59
18	2	2022	RG_FRGHSC	RG_FRGHSC	Silver (Ag)-Dissolved	mg/L	<0.00001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Silver (Ag)-Total	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	2	2022	RG_FRGHSC	RG_FRGHSC	Sodium (Na)-Dissolved	mg/L	3.86
18	2	2022	RG_FRGHSC	RG_FRGHSC	Sodium (Na)-Total	mg/L	4.3
18	2	2022	RG_FRGHSC	RG_FRGHSC	Specific Conductivity	uS/cm	1489
18	2	2022	RG_FRGHSC	RG_FRGHSC	Strontium (Sr)-Dissolved	mg/L	0.211
18	2	2022	RG_FRGHSC	RG_FRGHSC	Strontium (Sr)-Total	mg/L	0.225
18	2	2022	RG_FRGHSC	RG_FRGHSC	Sulphate	mg/L	416
18	2	2022	RG_FRGHSC	RG_FRGHSC	Sulphur (S)-Dissolved	mg/L	136
18	2	2022	RG_FRGHSC	RG_FRGHSC	Sulphur (S)-Total	mg/L	162
18	2	2022	RG_FRGHSC	RG_FRGHSC	Temperature, Field	deg c	4.9
18	2	2022	RG_FRGHSC	RG_FRGHSC	Thallium (Tl)-Dissolved	mg/L	<0.00001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Thallium (Tl)-Total	mg/L	<0.00001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Tin (Sn)-Dissolved	mg/L	<0.0001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Tin (Sn)-Total	mg/L	<0.0001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	2	2022	RG_FRGHSC	RG_FRGHSC	Titanium (Ti)-Total	mg/L	<0.0003
18	2	2022	RG_FRGHSC	RG_FRGHSC	Total Dissolved Solids	mg/L	1090
18	2	2022	RG_FRGHSC	RG_FRGHSC	Total Kjeldahl Nitrogen	mg/L	<0.05
18	2	2022	RG_FRGHSC	RG_FRGHSC	Total Organic Carbon	mg/L	0.81
18	2	2022	RG_FRGHSC	RG_FRGHSC	Total Suspended Solids	mg/L	1.1
18	2	2022	RG_FRGHSC	RG_FRGHSC	Turbidity, Lab	NTU	0.15
18	2	2022	RG_FRGHSC	RG_FRGHSC	Uranium (U)-Dissolved	mg/L	0.00495
18	2	2022	RG_FRGHSC	RG_FRGHSC	Uranium (U)-Total	mg/L	0.00503
18	2	2022	RG_FRGHSC	RG_FRGHSC	Vanadium (V)-Dissolved	mg/L	<0.0005
18	2	2022	RG_FRGHSC	RG_FRGHSC	Vanadium (V)-Total	mg/L	<0.0005
18	2	2022	RG_FRGHSC	RG_FRGHSC	Zinc (Zn)-Dissolved	mg/L	<0.001
18	2	2022	RG_FRGHSC	RG_FRGHSC	Zinc (Zn)-Total	mg/L	<0.003
15	3	2022	RG_FRGHSC	RG_FRGHSC	Acidity (as CaCO3)	mg/L	7.9
15	3	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Bicarbonate (as CaCO3)	mg/L	261
15	3	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Bicarbonate (as HCO3)	mg/L	318
15	3	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
15	3	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Carbonate (as CO3)	mg/L	<1
15	3	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	3	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Hydroxide (as OH)	mg/L	<1
15	3	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Total (as CaCO3)	mg/L	261
15	3	2022	RG_FRGHSC	RG_FRGHSC	Aluminum (Al)-Dissolved	mg/L	0.022
15	3	2022	RG_FRGHSC	RG_FRGHSC	Aluminum (Al)-Total	mg/L	0.0039
15	3	2022	RG_FRGHSC	RG_FRGHSC	Ammonia, Total (as N)	mg/L	0.0053
15	3	2022	RG_FRGHSC	RG_FRGHSC	Anion Sum	meq/L	16.8
15	3	2022	RG_FRGHSC	RG_FRGHSC	Antimony (Sb)-Dissolved	mg/L	0.00011
15	3	2022	RG_FRGHSC	RG_FRGHSC	Antimony (Sb)-Total	mg/L	<0.0001
15	3	2022	RG_FRGHSC	RG_FRGHSC	Arsenic (As)-Dissolved	mg/L	<0.0001
15	3	2022	RG_FRGHSC	RG_FRGHSC	Arsenic (As)-Total	mg/L	<0.0001
15	3	2022	RG_FRGHSC	RG_FRGHSC	Barium (Ba)-Dissolved	mg/L	0.0915
15	3	2022	RG_FRGHSC	RG_FRGHSC	Barium (Ba)-Total	mg/L	0.0911
15	3	2022	RG_FRGHSC	RG_FRGHSC	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	3	2022	RG_FRGHSC	RG_FRGHSC	Beryllium (Be)-Total	mg/L	<0.00002
15	3	2022	RG_FRGHSC	RG_FRGHSC	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	3	2022	RG_FRGHSC	RG_FRGHSC	Bismuth (Bi)-Total	mg/L	<0.00005
15	3	2022	RG_FRGHSC	RG_FRGHSC	Boron (B)-Dissolved	mg/L	0.012
15	3	2022	RG_FRGHSC	RG_FRGHSC	Boron (B)-Total	mg/L	0.013
15	3	2022	RG_FRGHSC	RG_FRGHSC	Bromide (Br)	mg/L	<0.25
15	3	2022	RG_FRGHSC	RG_FRGHSC	Cadmium (Cd)-Dissolved	mg/L	0.0000476
15	3	2022	RG_FRGHSC	RG_FRGHSC	Cadmium (Cd)-Total	mg/L	0.0000506
15	3	2022	RG_FRGHSC	RG_FRGHSC	Calcium (Ca)-Dissolved	mg/L	173
15	3	2022	RG_FRGHSC	RG_FRGHSC	Calcium (Ca)-Total	mg/L	179
15	3	2022	RG_FRGHSC	RG_FRGHSC	Cation - Anion Balance	%	94
15	3	2022	RG_FRGHSC	RG_FRGHSC	Cation Sum	meq/L	15.8
15	3	2022	RG_FRGHSC	RG_FRGHSC	Chloride (Cl)	mg/L	3.2
15	3	2022	RG_FRGHSC	RG_FRGHSC	Chromium (Cr)-Dissolved	mg/L	0.00017
15	3	2022	RG_FRGHSC	RG_FRGHSC	Chromium (Cr)-Total	mg/L	0.00015
15	3	2022	RG_FRGHSC	RG_FRGHSC	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	3	2022	RG_FRGHSC	RG_FRGHSC	Cobalt (Co)-Total	mg/L	<0.0001
15	3	2022	RG_FRGHSC	RG_FRGHSC	Conductivity	uS/cm	1340
15	3	2022	RG_FRGHSC	RG_FRGHSC	Conductivity, Field	uS/cm	774
15	3	2022	RG_FRGHSC	RG_FRGHSC	Copper (Cu)-Dissolved	mg/L	0.0181
15	3	2022	RG_FRGHSC	RG_FRGHSC	Copper (Cu)-Total	mg/L	<0.0005
15	3	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Organic Carbon	mg/L	<0.5
15	3	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Oxygen, Field	%	78.1
15	3	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Oxygen, Field	mg/L	9.93
15	3	2022	RG_FRGHSC	RG_FRGHSC	DMSeO - Dimethylselenoxide	mg/L	<0.00001
15	3	2022	RG_FRGHSC	RG_FRGHSC	Fluoride	mg/L	0.116
15	3	2022	RG_FRGHSC	RG_FRGHSC	Hardness - Dissolved (as CaCO3)	mg/L	778
15	3	2022	RG_FRGHSC	RG_FRGHSC	ion balance (APHA)	%	3.07
15	3	2022	RG_FRGHSC	RG_FRGHSC	Iron (Fe)-Dissolved	mg/L	<0.01
15	3	2022	RG_FRGHSC	RG_FRGHSC	Iron (Fe)-Total	mg/L	<0.01
15	3	2022	RG_FRGHSC	RG_FRGHSC	Lead (Pb)-Dissolved	mg/L	0.00195
15	3	2022	RG_FRGHSC	RG_FRGHSC	Lead (Pb)-Total	mg/L	<0.00005
15	3	2022	RG_FRGHSC	RG_FRGHSC	Lithium (Li)-Dissolved	mg/L	0.0575
15	3	2022	RG_FRGHSC	RG_FRGHSC	Lithium (Li)-Total	mg/L	0.0609
15	3	2022	RG_FRGHSC	RG_FRGHSC	Magnesium (Mg)-Dissolved	mg/L	84.1
15	3	2022	RG_FRGHSC	RG_FRGHSC	Magnesium (Mg)-Total	mg/L	85.8
15	3	2022	RG_FRGHSC	RG_FRGHSC	Manganese (Mn)-Dissolved	mg/L	0.00016
15	3	2022	RG_FRGHSC	RG_FRGHSC	Manganese (Mn)-Total	mg/L	0.0002
15	3	2022	RG_FRGHSC	RG_FRGHSC	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	3	2022	RG_FRGHSC	RG_FRGHSC	Mercury (Hg)-Total	mg/L	<0.0000005
15	3	2022	RG_FRGHSC	RG_FRGHSC	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
15	3	2022	RG_FRGHSC	RG_FRGHSC	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
15	3	2022	RG_FRGHSC	RG_FRGHSC	Molybdenum (Mo)-Dissolved	mg/L	0.000712
15	3	2022	RG_FRGHSC	RG_FRGHSC	Molybdenum (Mo)-Total	mg/L	0.000732
15	3	2022	RG_FRGHSC	RG_FRGHSC	Nickel (Ni)-Dissolved	mg/L	<0.0005
15	3	2022	RG_FRGHSC	RG_FRGHSC	Nickel (Ni)-Total	mg/L	<0.0005
15	3	2022	RG_FRGHSC	RG_FRGHSC	Nitrate (as N)	mg/L	30.2
15	3	2022	RG_FRGHSC	RG_FRGHSC	Nitrite (as N)	mg/L	<0.005
15	3	2022	RG_FRGHSC	RG_FRGHSC	ORP	mV	491
15	3	2022	RG_FRGHSC	RG_FRGHSC	Orthophosphate	mg/L	0.002
15	3	2022	RG_FRGHSC	RG_FRGHSC	pH, Field	pH	7.37
15	3	2022	RG_FRGHSC	RG_FRGHSC	pH, Lab	pH	7.85
15	3	2022	RG_FRGHSC	RG_FRGHSC	Phosphorus (P)-Total	mg/L	0.0021
15	3	2022	RG_FRGHSC	RG_FRGHSC	Potassium (K)-Dissolved	mg/L	2.3
15	3	2022	RG_FRGHSC	RG_FRGHSC	Potassium (K)-Total	mg/L	2.41
15	3	2022	RG_FRGHSC	RG_FRGHSC	Se(IV) - Selenite	mg/L	0.00007
15	3	2022	RG_FRGHSC	RG_FRGHSC	Se(VI) - Selenate	mg/L	0.0951
15	3	2022	RG_FRGHSC	RG_FRGHSC	SeCN - Selenocyanate	mg/L	<0.00001
15	3	2022	RG_FRGHSC	RG_FRGHSC	Selenium (Se)-Dissolved	mg/L	0.097533333
15	3	2022	RG_FRGHSC	RG_FRGHSC	Selenium (Se)-Total	mg/L	0.1006
15	3	2022	RG_FRGHSC	RG_FRGHSC	Selenium Unknown	mg/L	<0.00001
15	3	2022	RG_FRGHSC	RG_FRGHSC	Selenosulphate	mg/L	<0.00001
15	3	2022	RG_FRGHSC	RG_FRGHSC	SeMe - Selenomethionine	mg/L	<0.00001
15	3	2022	RG_FRGHSC	RG_FRGHSC	Silicon (Si)-Dissolved	mg/L	2.22
15	3	2022	RG_FRGHSC	RG_FRGHSC	Silicon (Si)-Total	mg/L	2.47
15	3	2022	RG_FRGHSC	RG_FRGHSC	Silver (Ag)-Dissolved	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	3	2022	RG_FRGHSC	RG_FRGHSC	Silver (Ag)-Total	mg/L	<0.00001
15	3	2022	RG_FRGHSC	RG_FRGHSC	Sodium (Na)-Dissolved	mg/L	3.86
15	3	2022	RG_FRGHSC	RG_FRGHSC	Sodium (Na)-Total	mg/L	4.2
15	3	2022	RG_FRGHSC	RG_FRGHSC	Specific Conductivity	uS/cm	1250
15	3	2022	RG_FRGHSC	RG_FRGHSC	Strontium (Sr)-Dissolved	mg/L	0.211
15	3	2022	RG_FRGHSC	RG_FRGHSC	Strontium (Sr)-Total	mg/L	0.221
15	3	2022	RG_FRGHSC	RG_FRGHSC	Sulphate	mg/L	447
15	3	2022	RG_FRGHSC	RG_FRGHSC	Sulphur (S)-Dissolved	mg/L	148
15	3	2022	RG_FRGHSC	RG_FRGHSC	Sulphur (S)-Total	mg/L	153
15	3	2022	RG_FRGHSC	RG_FRGHSC	Temperature, Field	deg c	5.1
15	3	2022	RG_FRGHSC	RG_FRGHSC	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	3	2022	RG_FRGHSC	RG_FRGHSC	Thallium (Tl)-Total	mg/L	<0.00001
15	3	2022	RG_FRGHSC	RG_FRGHSC	Tin (Sn)-Dissolved	mg/L	0.00284
15	3	2022	RG_FRGHSC	RG_FRGHSC	Tin (Sn)-Total	mg/L	<0.0001
15	3	2022	RG_FRGHSC	RG_FRGHSC	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	3	2022	RG_FRGHSC	RG_FRGHSC	Titanium (Ti)-Total	mg/L	<0.0003
15	3	2022	RG_FRGHSC	RG_FRGHSC	Total Dissolved Solids	mg/L	1020
15	3	2022	RG_FRGHSC	RG_FRGHSC	Total Kjeldahl Nitrogen	mg/L	<0.05
15	3	2022	RG_FRGHSC	RG_FRGHSC	Total Organic Carbon	mg/L	<0.5
15	3	2022	RG_FRGHSC	RG_FRGHSC	Total Suspended Solids	mg/L	2.1
15	3	2022	RG_FRGHSC	RG_FRGHSC	Turbidity, Lab	NTU	0.14
15	3	2022	RG_FRGHSC	RG_FRGHSC	Uranium (U)-Dissolved	mg/L	0.00448
15	3	2022	RG_FRGHSC	RG_FRGHSC	Uranium (U)-Total	mg/L	0.00475
15	3	2022	RG_FRGHSC	RG_FRGHSC	Vanadium (V)-Dissolved	mg/L	<0.0005
15	3	2022	RG_FRGHSC	RG_FRGHSC	Vanadium (V)-Total	mg/L	<0.0005
15	3	2022	RG_FRGHSC	RG_FRGHSC	Zinc (Zn)-Dissolved	mg/L	0.0284
15	3	2022	RG_FRGHSC	RG_FRGHSC	Zinc (Zn)-Total	mg/L	<0.003
29	6	2022	RG_FRGHSC	RG_FRGHSC	Acidity (as CaCO3)	mg/L	2.8
29	6	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Bicarbonate (as CaCO3)	mg/L	249
29	6	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Bicarbonate (as HCO3)	mg/L	304
29	6	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
29	6	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Carbonate (as CO3)	mg/L	<1
29	6	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
29	6	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Hydroxide (as OH)	mg/L	<1
29	6	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Total (as CaCO3)	mg/L	249
29	6	2022	RG_FRGHSC	RG_FRGHSC	Aluminum (Al)-Dissolved	mg/L	<0.001
29	6	2022	RG_FRGHSC	RG_FRGHSC	Aluminum (Al)-Total	mg/L	0.0065
29	6	2022	RG_FRGHSC	RG_FRGHSC	Ammonia, Total (as N)	mg/L	<0.005
29	6	2022	RG_FRGHSC	RG_FRGHSC	Anion Sum	meq/L	11.3
29	6	2022	RG_FRGHSC	RG_FRGHSC	Antimony (Sb)-Dissolved	mg/L	0.00011
29	6	2022	RG_FRGHSC	RG_FRGHSC	Antimony (Sb)-Total	mg/L	0.00012
29	6	2022	RG_FRGHSC	RG_FRGHSC	Arsenic (As)-Dissolved	mg/L	<0.0001
29	6	2022	RG_FRGHSC	RG_FRGHSC	Arsenic (As)-Total	mg/L	<0.0001
29	6	2022	RG_FRGHSC	RG_FRGHSC	Barium (Ba)-Dissolved	mg/L	0.0712
29	6	2022	RG_FRGHSC	RG_FRGHSC	Barium (Ba)-Total	mg/L	0.0659
29	6	2022	RG_FRGHSC	RG_FRGHSC	Beryllium (Be)-Dissolved	mg/L	<0.00002
29	6	2022	RG_FRGHSC	RG_FRGHSC	Beryllium (Be)-Total	mg/L	<0.00002
29	6	2022	RG_FRGHSC	RG_FRGHSC	Bismuth (Bi)-Dissolved	mg/L	<0.00005
29	6	2022	RG_FRGHSC	RG_FRGHSC	Bismuth (Bi)-Total	mg/L	<0.00005
29	6	2022	RG_FRGHSC	RG_FRGHSC	Boron (B)-Dissolved	mg/L	0.014
29	6	2022	RG_FRGHSC	RG_FRGHSC	Boron (B)-Total	mg/L	0.014
29	6	2022	RG_FRGHSC	RG_FRGHSC	Bromide (Br)	mg/L	<0.05
29	6	2022	RG_FRGHSC	RG_FRGHSC	Cadmium (Cd)-Dissolved	mg/L	0.0000301
29	6	2022	RG_FRGHSC	RG_FRGHSC	Cadmium (Cd)-Total	mg/L	0.0000338
29	6	2022	RG_FRGHSC	RG_FRGHSC	Calcium (Ca)-Dissolved	mg/L	123
29	6	2022	RG_FRGHSC	RG_FRGHSC	Calcium (Ca)-Total	mg/L	120
29	6	2022	RG_FRGHSC	RG_FRGHSC	Cation - Anion Balance	%	101
29	6	2022	RG_FRGHSC	RG_FRGHSC	Cation Sum	meq/L	11.4
29	6	2022	RG_FRGHSC	RG_FRGHSC	Chloride (Cl)	mg/L	2.28
29	6	2022	RG_FRGHSC	RG_FRGHSC	Chromium (Cr)-Dissolved	mg/L	0.00011
29	6	2022	RG_FRGHSC	RG_FRGHSC	Chromium (Cr)-Total	mg/L	0.00017
29	6	2022	RG_FRGHSC	RG_FRGHSC	Cobalt (Co)-Dissolved	mg/L	<0.0001
29	6	2022	RG_FRGHSC	RG_FRGHSC	Cobalt (Co)-Total	mg/L	<0.0001
29	6	2022	RG_FRGHSC	RG_FRGHSC	Conductivity	uS/cm	905
29	6	2022	RG_FRGHSC	RG_FRGHSC	Conductivity, Field	uS/cm	678
29	6	2022	RG_FRGHSC	RG_FRGHSC	Copper (Cu)-Dissolved	mg/L	0.00101
29	6	2022	RG_FRGHSC	RG_FRGHSC	Copper (Cu)-Total	mg/L	<0.0005
29	6	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Organic Carbon	mg/L	0.83
29	6	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Oxygen, Field	%	76.9
29	6	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Oxygen, Field	mg/L	9.9
29	6	2022	RG_FRGHSC	RG_FRGHSC	DMS ₂ SeO - Dimethylselenoxide	mg/L	<0.00001
29	6	2022	RG_FRGHSC	RG_FRGHSC	Fluoride	mg/L	0.121
29	6	2022	RG_FRGHSC	RG_FRGHSC	Hardness - Dissolved (as CaCO3)	mg/L	559
29	6	2022	RG_FRGHSC	RG_FRGHSC	ion balance (APHA)	%	0.44
29	6	2022	RG_FRGHSC	RG_FRGHSC	Iron (Fe)-Dissolved	mg/L	<0.01
29	6	2022	RG_FRGHSC	RG_FRGHSC	Iron (Fe)-Total	mg/L	0.011
29	6	2022	RG_FRGHSC	RG_FRGHSC	Lead (Pb)-Dissolved	mg/L	<0.00005
29	6	2022	RG_FRGHSC	RG_FRGHSC	Lead (Pb)-Total	mg/L	<0.00005
29	6	2022	RG_FRGHSC	RG_FRGHSC	Lithium (Li)-Dissolved	mg/L	0.0539
29	6	2022	RG_FRGHSC	RG_FRGHSC	Lithium (Li)-Total	mg/L	0.0524
29	6	2022	RG_FRGHSC	RG_FRGHSC	Magnesium (Mg)-Dissolved	mg/L	61.1
29	6	2022	RG_FRGHSC	RG_FRGHSC	Magnesium (Mg)-Total	mg/L	57.8
29	6	2022	RG_FRGHSC	RG_FRGHSC	Manganese (Mn)-Dissolved	mg/L	0.00011
29	6	2022	RG_FRGHSC	RG_FRGHSC	Manganese (Mn)-Total	mg/L	0.00046
29	6	2022	RG_FRGHSC	RG_FRGHSC	Mercury (Hg)-Dissolved	mg/L	<0.000005
29	6	2022	RG_FRGHSC	RG_FRGHSC	Mercury (Hg)-Total	mg/L	<0.000005
29	6	2022	RG_FRGHSC	RG_FRGHSC	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
29	6	2022	RG_FRGHSC	RG_FRGHSC	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
29	6	2022	RG_FRGHSC	RG_FRGHSC	Molybdenum (Mo)-Dissolved	mg/L	0.000893
29	6	2022	RG_FRGHSC	RG_FRGHSC	Molybdenum (Mo)-Total	mg/L	0.000948
29	6	2022	RG_FRGHSC	RG_FRGHSC	Nickel (Ni)-Dissolved	mg/L	<0.0005
29	6	2022	RG_FRGHSC	RG_FRGHSC	Nickel (Ni)-Total	mg/L	<0.0005
29	6	2022	RG_FRGHSC	RG_FRGHSC	Nitrate (as N)	mg/L	22.3
29	6	2022	RG_FRGHSC	RG_FRGHSC	Nitrite (as N)	mg/L	0.0023
29	6	2022	RG_FRGHSC	RG_FRGHSC	ORP	mV	310
29	6	2022	RG_FRGHSC	RG_FRGHSC	Orthophosphate	mg/L	<0.001
29	6	2022	RG_FRGHSC	RG_FRGHSC	pH, Field	pH	7.29
29	6	2022	RG_FRGHSC	RG_FRGHSC	pH, Lab	pH	8.02
29	6	2022	RG_FRGHSC	RG_FRGHSC	Phosphorus (P)-Total	mg/L	0.0038
29	6	2022	RG_FRGHSC	RG_FRGHSC	Potassium (K)-Dissolved	mg/L	2.42
29	6	2022	RG_FRGHSC	RG_FRGHSC	Potassium (K)-Total	mg/L	2.27
29	6	2022	RG_FRGHSC	RG_FRGHSC	Se(IV) - Selenite	mg/L	0.000055
29	6	2022	RG_FRGHSC	RG_FRGHSC	Se(VI) - Selenate	mg/L	0.0682
29	6	2022	RG_FRGHSC	RG_FRGHSC	SeCN - Selenocyanate	mg/L	<0.00001
29	6	2022	RG_FRGHSC	RG_FRGHSC	Selenium (Se)-Dissolved	mg/L	0.075733333
29	6	2022	RG_FRGHSC	RG_FRGHSC	Selenium (Se)-Total	mg/L	0.07005
29	6	2022	RG_FRGHSC	RG_FRGHSC	Selenium Unknown	mg/L	<0.00001
29	6	2022	RG_FRGHSC	RG_FRGHSC	Selenosulphate	mg/L	<0.00001
29	6	2022	RG_FRGHSC	RG_FRGHSC	SeMe - Selenomethionine	mg/L	<0.00001
29	6	2022	RG_FRGHSC	RG_FRGHSC	Silicon (Si)-Dissolved	mg/L	1.97
29	6	2022	RG_FRGHSC	RG_FRGHSC	Silicon (Si)-Total	mg/L	2.08

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
29	6	2022	RG_FRGHSC	RG_FRGHSC	Silver (Ag)-Dissolved	mg/L	<0.00001
29	6	2022	RG_FRGHSC	RG_FRGHSC	Silver (Ag)-Total	mg/L	<0.00001
29	6	2022	RG_FRGHSC	RG_FRGHSC	Sodium (Na)-Dissolved	mg/L	3.73
29	6	2022	RG_FRGHSC	RG_FRGHSC	Sodium (Na)-Total	mg/L	3.77
29	6	2022	RG_FRGHSC	RG_FRGHSC	Specific Conductivity	uS/cm	1114
29	6	2022	RG_FRGHSC	RG_FRGHSC	Strontium (Sr)-Dissolved	mg/L	0.129
29	6	2022	RG_FRGHSC	RG_FRGHSC	Strontium (Sr)-Total	mg/L	0.136
29	6	2022	RG_FRGHSC	RG_FRGHSC	Sulphate	mg/L	225
29	6	2022	RG_FRGHSC	RG_FRGHSC	Sulphur (S)-Dissolved	mg/L	85.1
29	6	2022	RG_FRGHSC	RG_FRGHSC	Sulphur (S)-Total	mg/L	89
29	6	2022	RG_FRGHSC	RG_FRGHSC	Temperature, Field	deg c	4.5
29	6	2022	RG_FRGHSC	RG_FRGHSC	Thallium (Tl)-Dissolved	mg/L	<0.00001
29	6	2022	RG_FRGHSC	RG_FRGHSC	Thallium (Tl)-Total	mg/L	<0.00001
29	6	2022	RG_FRGHSC	RG_FRGHSC	Tin (Sn)-Dissolved	mg/L	<0.0001
29	6	2022	RG_FRGHSC	RG_FRGHSC	Tin (Sn)-Total	mg/L	<0.0001
29	6	2022	RG_FRGHSC	RG_FRGHSC	Titanium (Ti)-Dissolved	mg/L	<0.0003
29	6	2022	RG_FRGHSC	RG_FRGHSC	Titanium (Ti)-Total	mg/L	<0.0003
29	6	2022	RG_FRGHSC	RG_FRGHSC	Total Dissolved Solids	mg/L	724
29	6	2022	RG_FRGHSC	RG_FRGHSC	Total Kjeldahl Nitrogen	mg/L	1.93
29	6	2022	RG_FRGHSC	RG_FRGHSC	Total Organic Carbon	mg/L	0.91
29	6	2022	RG_FRGHSC	RG_FRGHSC	Total Suspended Solids	mg/L	1.3
29	6	2022	RG_FRGHSC	RG_FRGHSC	Turbidity, Lab	NTU	0.36
29	6	2022	RG_FRGHSC	RG_FRGHSC	Uranium (U)-Dissolved	mg/L	0.00336
29	6	2022	RG_FRGHSC	RG_FRGHSC	Uranium (U)-Total	mg/L	0.00329
29	6	2022	RG_FRGHSC	RG_FRGHSC	Vanadium (V)-Dissolved	mg/L	<0.0005
29	6	2022	RG_FRGHSC	RG_FRGHSC	Vanadium (V)-Total	mg/L	<0.0005
29	6	2022	RG_FRGHSC	RG_FRGHSC	Zinc (Zn)-Dissolved	mg/L	<0.001
29	6	2022	RG_FRGHSC	RG_FRGHSC	Zinc (Zn)-Total	mg/L	<0.003
18	9	2022	RG_FRGHSC	RG_FRGHSC	Acidity (as CaCO3)	mg/L	3.5
18	9	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Bicarbonate (as CaCO3)	mg/L	282
18	9	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Bicarbonate (as HCO3)	mg/L	344
18	9	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
18	9	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Carbonate (as CO3)	mg/L	<1
18	9	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	9	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Hydroxide (as OH)	mg/L	<1
18	9	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Total (as CaCO3)	mg/L	282
18	9	2022	RG_FRGHSC	RG_FRGHSC	Aluminum (Al)-Dissolved	mg/L	<0.001
18	9	2022	RG_FRGHSC	RG_FRGHSC	Aluminum (Al)-Total	mg/L	0.004
18	9	2022	RG_FRGHSC	RG_FRGHSC	Ammonia, Total (as N)	mg/L	<0.005
18	9	2022	RG_FRGHSC	RG_FRGHSC	Anion Sum	meq/L	13.7
18	9	2022	RG_FRGHSC	RG_FRGHSC	Antimony (Sb)-Dissolved	mg/L	0.00012
18	9	2022	RG_FRGHSC	RG_FRGHSC	Antimony (Sb)-Total	mg/L	0.0001
18	9	2022	RG_FRGHSC	RG_FRGHSC	Arsenic (As)-Dissolved	mg/L	<0.0001
18	9	2022	RG_FRGHSC	RG_FRGHSC	Arsenic (As)-Total	mg/L	0.00014
18	9	2022	RG_FRGHSC	RG_FRGHSC	Barium (Ba)-Dissolved	mg/L	0.096
18	9	2022	RG_FRGHSC	RG_FRGHSC	Barium (Ba)-Total	mg/L	0.0903
18	9	2022	RG_FRGHSC	RG_FRGHSC	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	9	2022	RG_FRGHSC	RG_FRGHSC	Beryllium (Be)-Total	mg/L	<0.00002
18	9	2022	RG_FRGHSC	RG_FRGHSC	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	9	2022	RG_FRGHSC	RG_FRGHSC	Bismuth (Bi)-Total	mg/L	<0.00005
18	9	2022	RG_FRGHSC	RG_FRGHSC	Boron (B)-Dissolved	mg/L	0.021
18	9	2022	RG_FRGHSC	RG_FRGHSC	Boron (B)-Total	mg/L	0.018
18	9	2022	RG_FRGHSC	RG_FRGHSC	Bromide (Br)	mg/L	<0.25
18	9	2022	RG_FRGHSC	RG_FRGHSC	Cadmium (Cd)-Dissolved	mg/L	0.0000337
18	9	2022	RG_FRGHSC	RG_FRGHSC	Cadmium (Cd)-Total	mg/L	0.0000331
18	9	2022	RG_FRGHSC	RG_FRGHSC	Calcium (Ca)-Dissolved	mg/L	156
18	9	2022	RG_FRGHSC	RG_FRGHSC	Calcium (Ca)-Total	mg/L	138
18	9	2022	RG_FRGHSC	RG_FRGHSC	Cation - Anion Balance	%	101
18	9	2022	RG_FRGHSC	RG_FRGHSC	Cation Sum	meq/L	13.8
18	9	2022	RG_FRGHSC	RG_FRGHSC	Chloride (Cl)	mg/L	4.48
18	9	2022	RG_FRGHSC	RG_FRGHSC	Chromium (Cr)-Dissolved	mg/L	0.00013
18	9	2022	RG_FRGHSC	RG_FRGHSC	Chromium (Cr)-Total	mg/L	0.00013
18	9	2022	RG_FRGHSC	RG_FRGHSC	Cobalt (Co)-Dissolved	mg/L	<0.0001
18	9	2022	RG_FRGHSC	RG_FRGHSC	Cobalt (Co)-Total	mg/L	<0.0001
18	9	2022	RG_FRGHSC	RG_FRGHSC	Conductivity	uS/cm	1100
18	9	2022	RG_FRGHSC	RG_FRGHSC	Conductivity, Field	uS/cm	1076
18	9	2022	RG_FRGHSC	RG_FRGHSC	Copper (Cu)-Dissolved	mg/L	<0.0002
18	9	2022	RG_FRGHSC	RG_FRGHSC	Copper (Cu)-Total	mg/L	<0.0005
18	9	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Organic Carbon	mg/L	<0.5
18	9	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Oxygen, Field	%	82.3
18	9	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Oxygen, Field	mg/L	9.77
18	9	2022	RG_FRGHSC	RG_FRGHSC	DMSeO - Dimethylselenoxide	mg/L	<0.00001
18	9	2022	RG_FRGHSC	RG_FRGHSC	Fluoride	mg/L	0.16
18	9	2022	RG_FRGHSC	RG_FRGHSC	Hardness - Dissolved (as CaCO3)	mg/L	675
18	9	2022	RG_FRGHSC	RG_FRGHSC	ion balance (APHA)	%	0.364
18	9	2022	RG_FRGHSC	RG_FRGHSC	Iron (Fe)-Dissolved	mg/L	<0.01
18	9	2022	RG_FRGHSC	RG_FRGHSC	Iron (Fe)-Total	mg/L	<0.01
18	9	2022	RG_FRGHSC	RG_FRGHSC	Lead (Pb)-Dissolved	mg/L	<0.00005
18	9	2022	RG_FRGHSC	RG_FRGHSC	Lead (Pb)-Total	mg/L	<0.00005
18	9	2022	RG_FRGHSC	RG_FRGHSC	Lithium (Li)-Dissolved	mg/L	0.0697
18	9	2022	RG_FRGHSC	RG_FRGHSC	Lithium (Li)-Total	mg/L	0.0578
18	9	2022	RG_FRGHSC	RG_FRGHSC	Magnesium (Mg)-Dissolved	mg/L	69.4
18	9	2022	RG_FRGHSC	RG_FRGHSC	Magnesium (Mg)-Total	mg/L	69.7
18	9	2022	RG_FRGHSC	RG_FRGHSC	Manganese (Mn)-Dissolved	mg/L	0.00014
18	9	2022	RG_FRGHSC	RG_FRGHSC	Manganese (Mn)-Total	mg/L	0.00018
18	9	2022	RG_FRGHSC	RG_FRGHSC	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	9	2022	RG_FRGHSC	RG_FRGHSC	Mercury (Hg)-Total	mg/L	<0.000005
18	9	2022	RG_FRGHSC	RG_FRGHSC	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
18	9	2022	RG_FRGHSC	RG_FRGHSC	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
18	9	2022	RG_FRGHSC	RG_FRGHSC	Molybdenum (Mo)-Dissolved	mg/L	0.000885
18	9	2022	RG_FRGHSC	RG_FRGHSC	Molybdenum (Mo)-Total	mg/L	0.000824
18	9	2022	RG_FRGHSC	RG_FRGHSC	Nickel (Ni)-Dissolved	mg/L	<0.0005
18	9	2022	RG_FRGHSC	RG_FRGHSC	Nickel (Ni)-Total	mg/L	<0.0005
18	9	2022	RG_FRGHSC	RG_FRGHSC	Nitrate (as N)	mg/L	23.6
18	9	2022	RG_FRGHSC	RG_FRGHSC	Nitrite (as N)	mg/L	<0.005
18	9	2022	RG_FRGHSC	RG_FRGHSC	ORP	mV	294
18	9	2022	RG_FRGHSC	RG_FRGHSC	Orthophosphate	mg/L	<0.001
18	9	2022	RG_FRGHSC	RG_FRGHSC	pH, Lab	pH	8
18	9	2022	RG_FRGHSC	RG_FRGHSC	Phosphorus (P)-Total	mg/L	0.0057
18	9	2022	RG_FRGHSC	RG_FRGHSC	Potassium (K)-Dissolved	mg/L	2.78
18	9	2022	RG_FRGHSC	RG_FRGHSC	Potassium (K)-Total	mg/L	2.77
18	9	2022	RG_FRGHSC	RG_FRGHSC	Se(IV) - Selenite	mg/L	0.000087
18	9	2022	RG_FRGHSC	RG_FRGHSC	Se(VI) - Selenate	mg/L	0.0874
18	9	2022	RG_FRGHSC	RG_FRGHSC	SeCN - Selenocyanate	mg/L	<0.00001
18	9	2022	RG_FRGHSC	RG_FRGHSC	Selenium (Se)-Dissolved	mg/L	0.101066667
18	9	2022	RG_FRGHSC	RG_FRGHSC	Selenium (Se)-Total	mg/L	0.0862
18	9	2022	RG_FRGHSC	RG_FRGHSC	Selenium Unknown	mg/L	<0.00001
18	9	2022	RG_FRGHSC	RG_FRGHSC	Selenosulphate	mg/L	<0.00001
18	9	2022	RG_FRGHSC	RG_FRGHSC	SeMe - Selenomethionine	mg/L	<0.00001
18	9	2022	RG_FRGHSC	RG_FRGHSC	Silicon (Si)-Dissolved	mg/L	2.77
18	9	2022	RG_FRGHSC	RG_FRGHSC	Silicon (Si)-Total	mg/L	2.15

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	9	2022	RG_FRGHSC	RG_FRGHSC	Silver (Ag)-Dissolved	mg/L	<0.00001
18	9	2022	RG_FRGHSC	RG_FRGHSC	Silver (Ag)-Total	mg/L	<0.00001
18	9	2022	RG_FRGHSC	RG_FRGHSC	Sodium (Na)-Dissolved	mg/L	4.42
18	9	2022	RG_FRGHSC	RG_FRGHSC	Sodium (Na)-Total	mg/L	4.4
18	9	2022	RG_FRGHSC	RG_FRGHSC	Specific Conductivity	uS/cm	1606
18	9	2022	RG_FRGHSC	RG_FRGHSC	Strontium (Sr)-Dissolved	mg/L	0.174
18	9	2022	RG_FRGHSC	RG_FRGHSC	Strontium (Sr)-Total	mg/L	0.158
18	9	2022	RG_FRGHSC	RG_FRGHSC	Sulphate	mg/L	299
18	9	2022	RG_FRGHSC	RG_FRGHSC	Sulphur (S)-Dissolved	mg/L	124
18	9	2022	RG_FRGHSC	RG_FRGHSC	Sulphur (S)-Total	mg/L	104
18	9	2022	RG_FRGHSC	RG_FRGHSC	Temperature, Field	deg c	7.7
18	9	2022	RG_FRGHSC	RG_FRGHSC	Thallium (Tl)-Dissolved	mg/L	<0.00001
18	9	2022	RG_FRGHSC	RG_FRGHSC	Thallium (Tl)-Total	mg/L	<0.00001
18	9	2022	RG_FRGHSC	RG_FRGHSC	Tin (Sn)-Dissolved	mg/L	<0.0001
18	9	2022	RG_FRGHSC	RG_FRGHSC	Tin (Sn)-Total	mg/L	<0.0001
18	9	2022	RG_FRGHSC	RG_FRGHSC	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	9	2022	RG_FRGHSC	RG_FRGHSC	Titanium (Ti)-Total	mg/L	<0.0003
18	9	2022	RG_FRGHSC	RG_FRGHSC	Total Dissolved Solids	mg/L	856
18	9	2022	RG_FRGHSC	RG_FRGHSC	Total Kjeldahl Nitrogen	mg/L	1.94
18	9	2022	RG_FRGHSC	RG_FRGHSC	Total Organic Carbon	mg/L	<0.5
18	9	2022	RG_FRGHSC	RG_FRGHSC	Total Suspended Solids	mg/L	<1
18	9	2022	RG_FRGHSC	RG_FRGHSC	Turbidity, Lab	NTU	0.18
18	9	2022	RG_FRGHSC	RG_FRGHSC	Uranium (U)-Dissolved	mg/L	0.00433
18	9	2022	RG_FRGHSC	RG_FRGHSC	Uranium (U)-Total	mg/L	0.00389
18	9	2022	RG_FRGHSC	RG_FRGHSC	Vanadium (V)-Dissolved	mg/L	<0.0005
18	9	2022	RG_FRGHSC	RG_FRGHSC	Vanadium (V)-Total	mg/L	<0.0005
18	9	2022	RG_FRGHSC	RG_FRGHSC	Zinc (Zn)-Dissolved	mg/L	<0.001
18	9	2022	RG_FRGHSC	RG_FRGHSC	Zinc (Zn)-Total	mg/L	<0.003
8	12	2022	RG_FRGHSC	RG_FRGHSC	Acidity (as CaCO3)	mg/L	2.8
8	12	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Bicarbonate (as CaCO3)	mg/L	261
8	12	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Bicarbonate (as HCO3)	mg/L	319
8	12	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
8	12	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Carbonate (as CO3)	mg/L	<1
8	12	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	12	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Hydroxide (as OH)	mg/L	<1
8	12	2022	RG_FRGHSC	RG_FRGHSC	Alkalinity, Total (as CaCO3)	mg/L	261
8	12	2022	RG_FRGHSC	RG_FRGHSC	Aluminum (Al)-Dissolved	mg/L	<0.001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Aluminum (Al)-Total	mg/L	0.0044
8	12	2022	RG_FRGHSC	RG_FRGHSC	Ammonia, Total (as N)	mg/L	<0.005
8	12	2022	RG_FRGHSC	RG_FRGHSC	Anion Sum	meq/L	17.2
8	12	2022	RG_FRGHSC	RG_FRGHSC	Antimony (Sb)-Dissolved	mg/L	<0.0001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Antimony (Sb)-Total	mg/L	0.00011
8	12	2022	RG_FRGHSC	RG_FRGHSC	Arsenic (As)-Dissolved	mg/L	<0.0001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Arsenic (As)-Total	mg/L	<0.0001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Barium (Ba)-Dissolved	mg/L	0.0942
8	12	2022	RG_FRGHSC	RG_FRGHSC	Barium (Ba)-Total	mg/L	0.0998
8	12	2022	RG_FRGHSC	RG_FRGHSC	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	12	2022	RG_FRGHSC	RG_FRGHSC	Beryllium (Be)-Total	mg/L	<0.00002
8	12	2022	RG_FRGHSC	RG_FRGHSC	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	12	2022	RG_FRGHSC	RG_FRGHSC	Bismuth (Bi)-Total	mg/L	<0.00005
8	12	2022	RG_FRGHSC	RG_FRGHSC	Boron (B)-Dissolved	mg/L	0.015
8	12	2022	RG_FRGHSC	RG_FRGHSC	Boron (B)-Total	mg/L	0.017
8	12	2022	RG_FRGHSC	RG_FRGHSC	Bromide (Br)	mg/L	<0.25
8	12	2022	RG_FRGHSC	RG_FRGHSC	Cadmium (Cd)-Dissolved	mg/L	0.0000438
8	12	2022	RG_FRGHSC	RG_FRGHSC	Cadmium (Cd)-Total	mg/L	0.0000536
8	12	2022	RG_FRGHSC	RG_FRGHSC	Calcium (Ca)-Dissolved	mg/L	165
8	12	2022	RG_FRGHSC	RG_FRGHSC	Calcium (Ca)-Total	mg/L	194
8	12	2022	RG_FRGHSC	RG_FRGHSC	Cation - Anion Balance	%	82.6
8	12	2022	RG_FRGHSC	RG_FRGHSC	Cation Sum	meq/L	14.2
8	12	2022	RG_FRGHSC	RG_FRGHSC	Chloride (Cl)	mg/L	18.9
8	12	2022	RG_FRGHSC	RG_FRGHSC	Chromium (Cr)-Dissolved	mg/L	0.00013
8	12	2022	RG_FRGHSC	RG_FRGHSC	Chromium (Cr)-Total	mg/L	0.00015
8	12	2022	RG_FRGHSC	RG_FRGHSC	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Cobalt (Co)-Total	mg/L	<0.0001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Conductivity	uS/cm	1350
8	12	2022	RG_FRGHSC	RG_FRGHSC	Conductivity, Field	uS/cm	998
8	12	2022	RG_FRGHSC	RG_FRGHSC	Copper (Cu)-Dissolved	mg/L	<0.0002
8	12	2022	RG_FRGHSC	RG_FRGHSC	Copper (Cu)-Total	mg/L	<0.0005
8	12	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Organic Carbon	mg/L	<0.5
8	12	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Oxygen, Field	%	79.7
8	12	2022	RG_FRGHSC	RG_FRGHSC	Dissolved Oxygen, Field	mg/L	9.93
8	12	2022	RG_FRGHSC	RG_FRGHSC	DMSeO - Dimethylselenoxide	mg/L	<0.00001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Fluoride	mg/L	0.159
8	12	2022	RG_FRGHSC	RG_FRGHSC	Hardness - Dissolved (as CaCO3)	mg/L	690
8	12	2022	RG_FRGHSC	RG_FRGHSC	ion balance (APHA)	%	-9.55
8	12	2022	RG_FRGHSC	RG_FRGHSC	Iron (Fe)-Dissolved	mg/L	<0.01
8	12	2022	RG_FRGHSC	RG_FRGHSC	Iron (Fe)-Total	mg/L	<0.01
8	12	2022	RG_FRGHSC	RG_FRGHSC	Lead (Pb)-Dissolved	mg/L	<0.00005
8	12	2022	RG_FRGHSC	RG_FRGHSC	Lead (Pb)-Total	mg/L	<0.00005
8	12	2022	RG_FRGHSC	RG_FRGHSC	Lithium (Li)-Dissolved	mg/L	0.0701
8	12	2022	RG_FRGHSC	RG_FRGHSC	Lithium (Li)-Total	mg/L	0.0749
8	12	2022	RG_FRGHSC	RG_FRGHSC	Magnesium (Mg)-Dissolved	mg/L	67.5
8	12	2022	RG_FRGHSC	RG_FRGHSC	Magnesium (Mg)-Total	mg/L	88.9
8	12	2022	RG_FRGHSC	RG_FRGHSC	Manganese (Mn)-Dissolved	mg/L	0.00013
8	12	2022	RG_FRGHSC	RG_FRGHSC	Manganese (Mn)-Total	mg/L	0.00043
8	12	2022	RG_FRGHSC	RG_FRGHSC	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	12	2022	RG_FRGHSC	RG_FRGHSC	Mercury (Hg)-Total	mg/L	<0.000005
8	12	2022	RG_FRGHSC	RG_FRGHSC	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
8	12	2022	RG_FRGHSC	RG_FRGHSC	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Molybdenum (Mo)-Dissolved	mg/L	0.000729
8	12	2022	RG_FRGHSC	RG_FRGHSC	Molybdenum (Mo)-Total	mg/L	0.000833
8	12	2022	RG_FRGHSC	RG_FRGHSC	Nickel (Ni)-Dissolved	mg/L	<0.0005
8	12	2022	RG_FRGHSC	RG_FRGHSC	Nickel (Ni)-Total	mg/L	<0.0005
8	12	2022	RG_FRGHSC	RG_FRGHSC	Nitrate (as N)	mg/L	23
8	12	2022	RG_FRGHSC	RG_FRGHSC	Nitrite (as N)	mg/L	<0.005
8	12	2022	RG_FRGHSC	RG_FRGHSC	ORP	mV	424
8	12	2022	RG_FRGHSC	RG_FRGHSC	Orthophosphate	mg/L	<0.001
8	12	2022	RG_FRGHSC	RG_FRGHSC	pH, Field	pH	7.41
8	12	2022	RG_FRGHSC	RG_FRGHSC	pH, Lab	pH	8.04
8	12	2022	RG_FRGHSC	RG_FRGHSC	Phosphorus (P)-Total	mg/L	0.0032
8	12	2022	RG_FRGHSC	RG_FRGHSC	Potassium (K)-Dissolved	mg/L	2.57
8	12	2022	RG_FRGHSC	RG_FRGHSC	Potassium (K)-Total	mg/L	2.87
8	12	2022	RG_FRGHSC	RG_FRGHSC	Se(IV) - Selenite	mg/L	0.000078
8	12	2022	RG_FRGHSC	RG_FRGHSC	Se(VI) - Selenate	mg/L	0.0814
8	12	2022	RG_FRGHSC	RG_FRGHSC	SeCN - Selenocyanate	mg/L	<0.00001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Selenium (Se)-Dissolved	mg/L	0.095166667
8	12	2022	RG_FRGHSC	RG_FRGHSC	Selenium (Se)-Total	mg/L	0.0858
8	12	2022	RG_FRGHSC	RG_FRGHSC	Selenium Unknown	mg/L	<0.00001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Selenosulphate	mg/L	<0.00001
8	12	2022	RG_FRGHSC	RG_FRGHSC	SeMe - Selenomethionine	mg/L	<0.00001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Silicon (Si)-Dissolved	mg/L	2.55

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	12	2022	RG_FRGHSC	RG_FRGHSC	Silicon (Si)-Total	mg/L	2.44
8	12	2022	RG_FRGHSC	RG_FRGHSC	Silver (Ag)-Dissolved	mg/L	<0.00001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Silver (Ag)-Total	mg/L	<0.00001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Sodium (Na)-Dissolved	mg/L	7.91
8	12	2022	RG_FRGHSC	RG_FRGHSC	Sodium (Na)-Total	mg/L	8.98
8	12	2022	RG_FRGHSC	RG_FRGHSC	Specific Conductivity	uS/cm	1578
8	12	2022	RG_FRGHSC	RG_FRGHSC	Strontium (Sr)-Dissolved	mg/L	0.199
8	12	2022	RG_FRGHSC	RG_FRGHSC	Strontium (Sr)-Total	mg/L	0.209
8	12	2022	RG_FRGHSC	RG_FRGHSC	Sulphate	mg/L	469
8	12	2022	RG_FRGHSC	RG_FRGHSC	Sulphur (S)-Dissolved	mg/L	169
8	12	2022	RG_FRGHSC	RG_FRGHSC	Sulphur (S)-Total	mg/L	159
8	12	2022	RG_FRGHSC	RG_FRGHSC	Temperature, Field	deg c	5.8
8	12	2022	RG_FRGHSC	RG_FRGHSC	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Thallium (Tl)-Total	mg/L	<0.00001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Tin (Sn)-Dissolved	mg/L	<0.0001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Tin (Sn)-Total	mg/L	<0.0001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	12	2022	RG_FRGHSC	RG_FRGHSC	Titanium (Ti)-Total	mg/L	<0.0003
8	12	2022	RG_FRGHSC	RG_FRGHSC	Total Dissolved Solids	mg/L	1120
8	12	2022	RG_FRGHSC	RG_FRGHSC	Total Kjeldahl Nitrogen	mg/L	1.57
8	12	2022	RG_FRGHSC	RG_FRGHSC	Total Organic Carbon	mg/L	<0.5
8	12	2022	RG_FRGHSC	RG_FRGHSC	Total Suspended Solids	mg/L	1.7
8	12	2022	RG_FRGHSC	RG_FRGHSC	Turbidity, Lab	NTU	0.22
8	12	2022	RG_FRGHSC	RG_FRGHSC	Uranium (U)-Dissolved	mg/L	0.00534
8	12	2022	RG_FRGHSC	RG_FRGHSC	Uranium (U)-Total	mg/L	0.00526
8	12	2022	RG_FRGHSC	RG_FRGHSC	Vanadium (V)-Dissolved	mg/L	<0.0005
8	12	2022	RG_FRGHSC	RG_FRGHSC	Vanadium (V)-Total	mg/L	<0.0005
8	12	2022	RG_FRGHSC	RG_FRGHSC	Zinc (Zn)-Dissolved	mg/L	<0.001
8	12	2022	RG_FRGHSC	RG_FRGHSC	Zinc (Zn)-Total	mg/L	<0.003
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	115
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	115
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0197
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.704
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	0.0052
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	0.00014
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	0.00012
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00023
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0506
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0558
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000258
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000508
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	54.5
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	59
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.18
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	0.0001
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00213
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	0.00012
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	410
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	0.00038
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	0.00068
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	3.66
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	%	93.02
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	9.77
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.12
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	217
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	0.018
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	0.214
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	0.000162
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0056
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0063
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	19.7
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	21.3
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00436
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00757
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	0.00000281
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.000653
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000706
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	0.00067
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.00126
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	1.86
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	0.0012
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	473
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	172
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	0.0088
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.37
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.09
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0201
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.614
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.793
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.0134
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.0145
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.85
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	3.47
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	0.000029
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.67
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.686
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.0887
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.0939
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	82.7
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	4.4
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	0.000028
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.00035
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	0.026

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	253
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.327
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	4.08
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	7.2
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	7.42
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.000757
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.000844
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	0.00302
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	0.0015
30	3	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	0.0039
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	131
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	131
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0093
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.0701
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	0.00012
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00014
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0501
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.058
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000233
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000306
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	75.7
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	82.2
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.27
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00022
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	594
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	<0.0002
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	1.97
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	%	82
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	11.27
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.169
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	317
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	<0.01
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	0.06
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	<0.00005
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0098
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0118
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	31.1
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	37
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00185
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00297
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	0.00000113
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.000695
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.00361
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	0.00075
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.00111
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	4.68
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	<0.001
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	430
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	166.4
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	0.0042
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.21
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.19
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0075
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.8
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.969
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.0255
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.034
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.64
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	2.09
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.733
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.937
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.117
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.139
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	177
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	2.1
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	0.00102
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	427
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.35
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	2.58
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	1.6
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	2.39
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.00125
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.00142
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	<0.0005
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	<0.001
4	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	<0.003
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	144
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	144
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0143
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.104

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	0.00011
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00017
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0482
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.051
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000287
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000345
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	76.9
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	74.9
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.27
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	0.00012
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00029
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	612
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	0.00035
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	3.07
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	%	87.6
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	12.71
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.185
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	329
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	0.017
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	0.069
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	0.000059
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0114
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0107
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	33.2
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	33.9
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00226
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00309
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.000725
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000767
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	0.00088
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.00092
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	5.21
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	0.0024
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	437
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	228.7
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	<0.001
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.34
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	7.77
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0075
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.851
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.94
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.0335
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.0352
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.78
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	2.09
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.75
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.785
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.115
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.126
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	191
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	0.2
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	0.00264
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	404
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.454
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	2.95
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	1.5
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	3.17
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.00134
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.00139
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	0.00074
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	0.003
11	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	<0.003
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	127
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	127
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0159
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.118
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	0.00012
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00016
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0483
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0518
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000234
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000285
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	62.4
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	67.2

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.22
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.0003
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	507
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	0.00031
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	2.39
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	%	77.8
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	11.35
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.142
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	259
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	0.017
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	0.075
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	<0.00005
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0084
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.009
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	25
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	27.9
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.0013
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00202
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.000723
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000744
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.001
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	3.87
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	<0.001
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	276
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	146.5
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	0.0033
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.39
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.26
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0083
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.75
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.773
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.0219
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.0242
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.75
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	2.12
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.718
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.797
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.104
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.112
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	130
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	0
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	0.00261
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	377
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.296
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	2.73
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	1.4
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	2.1
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.00104
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.00113
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	0.00075
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	0.0025
20	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	0.0036
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	85.5
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	85.5
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0522
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	1.05
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	0.0073
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	0.00016
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	0.00018
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00064
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0452
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0601
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	0.000085
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.001
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.000568
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.000276
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	37.1
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	37.8
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.13
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	0.00011
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00183
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	0.00023
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	0.00088
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	283
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	0.00083
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	0.00247
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	9.36
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	%	82.3
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	11.16
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.103
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	154
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	0.076
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	1.03
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	0.000995
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0043

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.005
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	15
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	13.8
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.0196
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.0444
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	0.0000127
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.000564
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.00065
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	0.00116
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.00408
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	1.55
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	0.0015
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	477
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	137.7
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	0.0116
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.03
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.04
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.121
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.616
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.851
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.01
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.00993
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	2.03
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	3.26
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	0.00008
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.6
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.589
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.0651
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.0647
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	61.2
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	2.7
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	0.000078
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	0.00073
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	0.0137
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	147
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.618
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	8.04
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	78.2
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	54.8
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.000579
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.000748
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	0.00611
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	0.0022
25	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	0.0167
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	114
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	114
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0359
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.199
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	0.0084
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	0.00013
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00019
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.045
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.047
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000342
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000746
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	48.5
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	52
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.2
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	0.00011
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00044
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	0.00014
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	0.00021
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	373
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	0.00047
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	0.00076
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	5.14
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	12.8
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.11
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	198
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	0.056
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	0.138
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	0.00012
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0056
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0066
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	18.6
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	18.8
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.0138
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.0172
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.00066
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000694
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	0.00086
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.00113
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	2.28
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	0.0022
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	300
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	181.1
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	0.007
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.29
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	7.96
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0233

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.608
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.659
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.0139
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.0137
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.85
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	2.24
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	0.000012
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.669
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.662
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.0836
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.0873
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	85.4
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	1.2
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	0.000013
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	0.00048
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	<0.0045
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	242
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.302
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	5.69
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	6.9
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Field	NTU	14.63
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	9.38
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.000762
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.00076
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	0.00107
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	0.0026
26	4	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	0.0043
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	127
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	127
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0103
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.0563
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	0.0078
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	0.0001
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00014
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0421
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0428
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000193
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000312
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	56.5
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	58.9
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.26
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	0.0001
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00028
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	442
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	0.00026
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	2.27
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	12.7
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.166
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	232
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	0.011
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	0.041
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	<0.00005
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0066
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.007
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	22
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	23.7
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00203
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00387
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.00143
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000682
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	0.00071
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.00085
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	2.89
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	0.0023
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	284
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	104.5
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	0.002
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.45
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.13
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0084
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.657
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.651
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.0182
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.0168
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.84
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	1.99
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.723
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.712
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.095
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.0933
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	107
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	1.6
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	0.00122
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	284
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.276
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	2.54
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	3.8
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Field	NTU	2.06
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	1.43
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.000955
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.000925
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	<0.0005
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	<0.001
3	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	<0.003
9	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	11.37
9	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	229.6
9	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.36
9	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	4.3
9	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Field	NTU	1.99
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	134
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	134
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0081
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.0478
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	0.00011
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00016
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0374
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0382
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000138
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000272
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	54.8
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	52.3
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.16
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	0.00018
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00015
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	398
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	0.00038
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	2.42
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	11.32
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.186
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	221
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	<0.01
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	0.038
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	<0.00005
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0064
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0065
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	20.4
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	19.4
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00132
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00305
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.000679
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000698
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	0.00056
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.00082
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	2.24
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	0.0017
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	425
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	112.2
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	<0.001
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.42
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.23
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0116
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.621
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.592
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.0144
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.0146
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.68
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	1.77
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.655
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.633
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.0919
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.0939
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	86.5
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	1.6
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	0.00096
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	303
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.335
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	2.33
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	4.9
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Field	NTU	4.61
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	1.48
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.000861
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.000838
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	0.00055
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	<0.001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
10	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	<0.003
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	135
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	135
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0042
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.0306
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	0.00012
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00014
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0369
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0377
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000184
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000226
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	58.2
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	54.6
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.14
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	0.00012
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	<0.0001
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	384
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	0.00032
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	2.34
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	11.85
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.179
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	223
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	<0.01
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	0.03
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	<0.00005
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0055
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.006
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	18.9
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	19.9
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00115
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00291
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.000659
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000758
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.00054
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	1.96
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	0.0016
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	360
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	229.3
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	<0.001
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.3
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.29
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0075
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.552
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.569
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.0107
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.0117
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.6
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	1.76
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.642
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.685
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.0989
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.0948
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	74.3
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	3.6
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	0.00036
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	264
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.238
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	7.26
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	2
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Field	NTU	1.7
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	2.08
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.000861
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.000875
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	<0.0005
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	<0.001
17	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	<0.003
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	132
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	132
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0044
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.0185
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	<0.0001
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	<0.0001
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0341
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0362
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000163
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000187
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	49.2
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	50.4
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.16
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	0.00011
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00011
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	380
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	0.00034
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	1.41
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	11.49
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.187
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	197
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	<0.01
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	0.016
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	<0.00005
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0052
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0057
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	18
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	19.2
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.001
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00168
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.000763
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000698
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	0.00051
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.00058
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	1.69
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	0.0011
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	321
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	149.8
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	<0.001
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.31
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.27
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0067
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.526
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.542
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.0113
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.0109
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.56
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	1.7
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.626
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.64
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.0941
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.0951
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	74.2
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	2.9
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	0.00031
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	233
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.268
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	1.48
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	1.1
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Field	NTU	4.05
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	1.3
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.000795
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.000818
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	<0.0005
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	0.004
25	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	<0.003
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	121
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	122
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.004
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.0355
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	<0.0001
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00014
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0344
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0343
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000112
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000169
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	40.7
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	42.3
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.13
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	0.0001
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00024
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	284
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	0.00024
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	1.85
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	%	85.3

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	11.27
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.156
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	158
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	<0.01
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	0.03
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	<0.00005
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0034
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0033
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	13.6
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	14.1
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00056
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00197
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.000631
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000592
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.00054
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	0.739
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	0.001
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	301
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	177.5
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	0.0013
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.33
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.27
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0063
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.432
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.451
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.00581
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.00568
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.64
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	1.69
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.562
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.56
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.0788
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.0787
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	35.7
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	3.7
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	0.00062
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	195
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.1
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	1.76
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	1
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	0.71
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.000586
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.000614
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	<0.0005
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	<0.001
31	5	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	<0.003
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	150
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	150
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0036
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.0574
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	0.00012
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	0.00015
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	0.0001
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00018
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0369
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0406
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000476
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.000068
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	57.3
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	61.1
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.91
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00015
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	0.00014
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	505
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	0.00024
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	1.27
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	11.1
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.123
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	250
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	<0.01
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	0.087
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	0.000084
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0202
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0206
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	26
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	25
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00125
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00944
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.00111
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.00113
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	0.00227
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.00277

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	6.5
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	0.0013
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	357
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	187.3
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	0.003
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.24
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.29
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0222
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	1.03
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	1.02
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.0251
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.0261
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.54
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	1.76
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	1.42
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	1.39
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.084
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.0859
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	93.1
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	3.3
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	0.00096
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	308
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.351
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	1.17
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	11.7
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Field	NTU	4.08
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	4.01
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.00151
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.00163
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	<0.0005
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	0.0021
7	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	0.0034
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	109
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as HCO3)	mg/L	133
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CO3)	mg/L	<1
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as OH)	mg/L	<1
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	109
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0109
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.0473
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Anion Sum	meq/L	2.73
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	0.00015
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	0.0001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00012
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0256
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0282
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000121
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000203
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	33.7
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	34.7
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cation - Anion Balance	%	94.9
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cation Sum	meq/L	2.59
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.18
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	0.00023
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00052
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	232
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity, Field	uS/cm	151
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	0.00082
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	0.00166
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	3.33
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	%	99.8
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	13.14
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	DMSeO - Dimethylselenoxide	mg/L	<0.00001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.15
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	128
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	ion balance (APHA)	%	2.63
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	<0.01
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	0.046
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	0.000173
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0032
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0029
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	10.6
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	10.6
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00315
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00777
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.000532
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000533
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	0.00054
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.00118
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	0.525
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	<0.001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	344
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	<0.001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.18
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	7.97

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0086
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.531
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.686
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Se(IV) - Selenite	mg/L	0.000029
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Se(VI) - Selenate	mg/L	0.00373
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	SeCN - Selenocyanate	mg/L	<0.00001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.004025
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.003945
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium Unknown	mg/L	<0.00001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenosulphate	mg/L	<0.00001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	SeMe - Selenomethionine	mg/L	<0.00001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.44
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	1.57
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.561
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.678
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Specific Conductivity	uS/cm	254.1
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.0643
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.0668
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	24.3
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphur (S)-Dissolved	mg/L	7.56
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphur (S)-Total	mg/L	8.66
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	3.8
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	0.00013
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	0.00111
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	149
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	<0.5
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	2.04
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	8.3
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	2.86
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.000474
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.000476
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	<0.0005
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	0.0083
13	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	0.0174
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	110
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	110
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0039
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.0488
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	<0.0001
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00013
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0274
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0273
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.000008
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000243
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	37.2
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	34.8
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	<0.1
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00016
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	246
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	<0.0002
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	1.62
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	11.48
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.129
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	136
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	<0.01
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	0.043
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	0.000054
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0031
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0034
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	10.6
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	11.6
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00078
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00378
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	0.0000076
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.00059
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000572
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	<0.0005
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	0.63
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	0.001
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	287
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	150.5
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	0.0022
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.31
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.14
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0072
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.401
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.449
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.00423
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.00481
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.59
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	1.74
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.464

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.59
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.0676
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.0695
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	25.9
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	2.4
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	0.0009
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	160
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.088
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	1.93
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	4.9
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Field	NTU	2.71
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	2.33
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.000507
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.00051
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	<0.0005
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	<0.001
14	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	<0.003
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	112
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	4.2
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	116
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0056
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.0572
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	0.00011
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00012
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0277
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0259
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000113
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000182
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	38.8
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	37.3
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	<0.1
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00023
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	260
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	0.00021
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	1.82
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	%	84.8
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	10.62
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.129
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	147
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	<0.01
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	0.064
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	0.000063
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0034
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0034
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	12.1
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	11
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.001
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00528
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.000568
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000584
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.0006
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	0.684
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	<0.001
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	298
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	170.9
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	0.0027
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.1
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.29
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0122
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.438
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.412
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.00504
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.00485
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.65
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	1.61
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.647
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.432
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.068
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.0694
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	26.8
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	5.7
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	0.00137
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	172
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.096
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	2.37
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	7.8
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	3.58
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.000544

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.000543
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	<0.0005
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	<0.001
21	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	<0.003
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	124
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	124
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0033
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.0233
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00011
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0237
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0228
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000096
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000137
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	35.2
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	34.8
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.11
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00014
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	264
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	<0.0002
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	0.94
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	%	86.5
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	10.42
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.134
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	133
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	<0.01
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	0.02
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	<0.00005
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.003
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0029
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	10.9
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	10.4
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00078
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00263
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.000584
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000582
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	<0.0005
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	0.687
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	<0.001
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	271
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	148.9
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	<0.001
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.36
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.2
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0074
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.409
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.386
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.00426
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.00462
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.43
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	1.41
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.406
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.415
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.0661
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.0661
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	27.2
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	7.3
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	0.00042
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	154
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.167
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	0.99
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	3
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	1.85
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.000544
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.000529
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	<0.0005
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	<0.001
28	6	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	<0.003
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	106
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	1.6
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	107
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0034
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.044
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00012
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0219

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0232
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000071
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000127
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	36.1
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	36.1
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	<0.1
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00017
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	244
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	<0.0002
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	1.02
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	10.8
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.141
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	135
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	<0.01
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	0.03
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	<0.00005
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.003
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0031
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	10.9
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	10.5
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00064
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00279
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.000606
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000551
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	<0.0005
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	0.593
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	<0.001
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	228
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	177.6
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	<0.001
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.38
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.22
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0083
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.374
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.412
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.00438
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.00463
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.38
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	1.52
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.404
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.428
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.0674
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.0667
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	29.2
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	6
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	0.00325
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	0.00073
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	167
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.139
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	1.22
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	3.6
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Field	NTU	4
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	2.39
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.000499
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.000552
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	<0.0005
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	<0.001
5	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	<0.003
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	121
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	121
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0022
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.009
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	<0.0001
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	<0.0001
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0228
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0218
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000095
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000112
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	35.6
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	36.1
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.11
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00011
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	264

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	<0.0002
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	0.65
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	10.36
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.195
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	132
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	<0.01
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	<0.01
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	<0.00005
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0033
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0029
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	10.6
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	11.7
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00071
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00115
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.00061
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000583
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	<0.0005
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	0.739
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	<0.001
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	358
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	224.8
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	<0.001
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.17
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	7.27
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0039
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.399
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.403
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.00563
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.0054
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.24
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	1.3
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.375
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.382
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.0672
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.0645
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	34.6
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	6.4
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	<0.0003
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	173
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.064
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	0.54
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	2.7
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Field	NTU	0.84
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	0.61
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.000546
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.000572
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	<0.0005
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	<0.001
13	7	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	<0.003
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	136
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	3.2
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	139
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0019
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.0067
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	0.00011
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00012
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0376
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0343
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000184
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000176
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	54.7
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	53.3
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.16
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	0.00012
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00042
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	436
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	<0.0002
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	<0.5
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	%	85.5
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	8.87
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.239
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	223
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	<0.01
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	<0.01
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	<0.00005
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.007
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0071
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	20.9
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	20.2
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00124
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.0016
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.000853
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000863
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	<0.0005
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	1.86
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	0.0021
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	307
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	218.1
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	<0.001
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.33
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.36
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0034
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.692
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.684
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.0145
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.0148
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.62
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	1.61
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.528
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.549
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.0999
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.0986
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	88
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	13.6
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	<0.0003
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	258
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.112
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	<0.5
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	1.1
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Field	NTU	0.14
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	0.26
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.000905
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.000888
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	<0.0005
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	<0.001
9	8	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	<0.003
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	133
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	6.2
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	140
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0046
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.0101
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00013
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.041
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0416
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000183
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.000021
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	64.3
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	69.9
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.25
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	0.00013
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00017
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	468
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	<0.0002
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	<0.5
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	%	86.3
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	9.49
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.242
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	261
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	<0.01
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	<0.01
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	<0.00005
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0075
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0075
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	24.3
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	26.7
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00081
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00148
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.000907
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000949
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	0.0005
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.00057
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	2.28
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	0.0018
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	334
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	167.3
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	<0.001
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.33
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.33
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	<0.002
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.698
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.74
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.0191
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.0183

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.61
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	1.66
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.598
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.615
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.117
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.122
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	115
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	11
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	<0.0003
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	322
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.236
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	<0.5
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	<1
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Field	NTU	0.7
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	0.22
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.00108
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.00109
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	<0.0005
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	<0.001
13	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	<0.003
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	136
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as HCO3)	mg/L	166
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	5.2
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CO3)	mg/L	3.1
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as OH)	mg/L	<1
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	141
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	<0.001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.008
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Anion Sum	meq/L	5.52
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	<0.0001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00013
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0421
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0412
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000177
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000134
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	66.5
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	61.5
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cation - Anion Balance	%	98.9
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cation Sum	meq/L	5.46
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.21
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00012
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	486
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity, Field	uS/cm	280.4
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	<0.0002
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	<0.5
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	%	85.8
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	9.896666667
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	DMSeO - Dimethylselenoxide	mg/L	<0.00001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.238
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	271
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	ion balance (APHA)	%	0.546
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	<0.01
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	<0.01
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	<0.00005
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0077
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0086
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	25.5
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	24.3
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00075
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00126
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.0009
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000859
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	<0.0005
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.00053
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	2.28
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	0.0023
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	302
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	<0.001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.4
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.37
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0025
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.658
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.703
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Se(IV) - Selenite	mg/L	0.000076
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Se(VI) - Selenate	mg/L	0.0163
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	SeCN - Selenocyanate	mg/L	<0.00001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.0191
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.018266667
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium Unknown	mg/L	<0.00001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenosulphate	mg/L	<0.00001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	SeMe - Selenomethionine	mg/L	<0.00001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.6

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	1.42
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.632
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.645
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Specific Conductivity	uS/cm	410.7
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.12
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.116
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	121
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphur (S)-Dissolved	mg/L	42.9
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphur (S)-Total	mg/L	42.5
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	8.833333333
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	<0.0003
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	280
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	<0.5
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	<0.5
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	<1
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	0.21
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.000964
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.00106
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	<0.0005
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	<0.001
19	9	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	<0.003
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	154
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	3
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	157
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	<0.001
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.0047
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	<0.0001
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	0.00012
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.0392
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0441
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000216
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.000017
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	74.4
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	76.6
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.28
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	<0.0001
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	527
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	<0.0002
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	0.00219
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	0.71
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Oxygen, Field	mg/L	9.87
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.243
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	296
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	<0.01
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	<0.01
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	<0.00005
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0106
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0105
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	26.7
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	30
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00049
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00078
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.000912
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000878
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	0.00075
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.00228
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	2.81
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	0.0031
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	273
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP, Field	mV	167.5
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	0.0011
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Field	pH	8.36
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.32
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	<0.002
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.766
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.821
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.0333
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.0238
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.51
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	1.66
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.63
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.713
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.124
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.122
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	150
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Temperature, Field	deg c	9.1
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	0.000013
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	<0.0003
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	304

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.213
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	1.14
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	<1
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Field	NTU	2.12
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	0.21
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.00111
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.00113
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	<0.0005
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	<0.001
12	10	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	<0.003
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Acidity (as CaCO3)	mg/L	<2
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	158
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Carbonate (as CaCO3)	mg/L	4
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Alkalinity, Total (as CaCO3)	mg/L	162
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Dissolved	mg/L	0.0014
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Aluminum (Al)-Total	mg/L	0.0054
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Ammonia, Total (as N)	mg/L	<0.005
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Dissolved	mg/L	<0.0001
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Antimony (Sb)-Total	mg/L	<0.0001
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Dissolved	mg/L	<0.0001
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Arsenic (As)-Total	mg/L	<0.0001
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Dissolved	mg/L	0.038
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Barium (Ba)-Total	mg/L	0.0396
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Dissolved	mg/L	<0.00002
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Beryllium (Be)-Total	mg/L	<0.00002
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bismuth (Bi)-Total	mg/L	<0.00005
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Dissolved	mg/L	<0.01
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Boron (B)-Total	mg/L	<0.01
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Bromide (Br)	mg/L	<0.05
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Dissolved	mg/L	0.0000237
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cadmium (Cd)-Total	mg/L	0.0000174
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Dissolved	mg/L	67.9
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Calcium (Ca)-Total	mg/L	75.2
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chloride (Cl)	mg/L	0.27
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Dissolved	mg/L	<0.0001
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Chromium (Cr)-Total	mg/L	0.00019
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Dissolved	mg/L	<0.0001
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Cobalt (Co)-Total	mg/L	<0.0001
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Conductivity	uS/cm	535
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Dissolved	mg/L	0.00055
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Copper (Cu)-Total	mg/L	<0.0005
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Dissolved Organic Carbon	mg/L	<0.5
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Fluoride	mg/L	0.231
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Hardness - Dissolved (as CaCO3)	mg/L	286
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Dissolved	mg/L	<0.01
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Iron (Fe)-Total	mg/L	<0.01
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Dissolved	mg/L	<0.00005
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lead (Pb)-Total	mg/L	<0.00005
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Dissolved	mg/L	0.0086
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Lithium (Li)-Total	mg/L	0.0091
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Dissolved	mg/L	28.2
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Magnesium (Mg)-Total	mg/L	32.1
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Dissolved	mg/L	0.00059
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Manganese (Mn)-Total	mg/L	0.00078
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Dissolved	mg/L	<0.000005
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Mercury (Hg)-Total	mg/L	<0.000005
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Dissolved	mg/L	0.000857
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Molybdenum (Mo)-Total	mg/L	0.000875
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Dissolved	mg/L	0.00052
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nickel (Ni)-Total	mg/L	0.00062
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrate (as N)	mg/L	2.78
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Nitrite (as N)	mg/L	0.0025
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	ORP	mV	310
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Orthophosphate	mg/L	<0.001
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	pH, Lab	pH	8.31
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Phosphorus (P)-Total	mg/L	0.0031
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Dissolved	mg/L	0.658
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Potassium (K)-Total	mg/L	0.728
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Dissolved	mg/L	0.0321
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Selenium (Se)-Total	mg/L	0.0254
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Dissolved	mg/L	1.54
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silicon (Si)-Total	mg/L	1.64
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Dissolved	mg/L	<0.00001
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Silver (Ag)-Total	mg/L	<0.00001
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Dissolved	mg/L	0.619
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sodium (Na)-Total	mg/L	0.68
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Dissolved	mg/L	0.118
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Strontium (Sr)-Total	mg/L	0.125
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Sulphate	mg/L	168
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Dissolved	mg/L	<0.00001
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Thallium (Tl)-Total	mg/L	<0.00001
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Dissolved	mg/L	<0.0001
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Tin (Sn)-Total	mg/L	<0.0001
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Dissolved	mg/L	<0.0003
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Titanium (Ti)-Total	mg/L	<0.0003
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Dissolved Solids	mg/L	372
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Kjeldahl Nitrogen	mg/L	0.246
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Organic Carbon	mg/L	<0.5
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Total Suspended Solids	mg/L	<1
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Turbidity, Lab	NTU	0.18
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Dissolved	mg/L	0.00113
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Uranium (U)-Total	mg/L	0.00115
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Dissolved	mg/L	<0.0005
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Vanadium (V)-Total	mg/L	<0.0005
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Dissolved	mg/L	0.0014
3	11	2022	FR_FR1 (RG_FODHE)	FR_FR1	Zinc (Zn)-Total	mg/L	<0.003
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Acidity (as CaCO3)	mg/L	<2
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Bicarbonate (as CaCO3)	mg/L	113
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Bicarbonate (as HCO3)	mg/L	138
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Carbonate (as CO3)	mg/L	<1
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Hydroxide (as OH)	mg/L	<1
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Total (as CaCO3)	mg/L	113
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Aluminum (Al)-Dissolved	mg/L	0.003
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Aluminum (Al)-Total	mg/L	0.0358
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Ammonia, Total (as N)	mg/L	0.0112
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Anion Sum	meq/L	3.06

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Antimony (Sb)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Antimony (Sb)-Total	mg/L	<0.0001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Arsenic (As)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Arsenic (As)-Total	mg/L	0.0001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Barium (Ba)-Dissolved	mg/L	0.0295
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Barium (Ba)-Total	mg/L	0.0291
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Beryllium (Be)-Total	mg/L	<0.00002
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Bismuth (Bi)-Total	mg/L	<0.00005
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Boron (B)-Dissolved	mg/L	<0.01
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Boron (B)-Total	mg/L	<0.01
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Bromide (Br)	mg/L	<0.05
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cadmium (Cd)-Dissolved	mg/L	0.0000125
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cadmium (Cd)-Total	mg/L	0.0000189
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Calcium (Ca)-Dissolved	mg/L	35.7
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Calcium (Ca)-Total	mg/L	36.6
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cation - Anion Balance	%	91.2
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cation Sum	meq/L	2.79
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Chloride (Cl)	mg/L	0.28
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Chromium (Cr)-Dissolved	mg/L	0.00011
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Chromium (Cr)-Total	mg/L	0.00013
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cobalt (Co)-Total	mg/L	<0.0001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Conductivity	uS/cm	259
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Conductivity, Field	uS/cm	166.8
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Copper (Cu)-Dissolved	mg/L	0.0002
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Copper (Cu)-Total	mg/L	<0.0005
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Dissolved Organic Carbon	mg/L	2.17
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Dissolved Oxygen, Field	%	101
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Dissolved Oxygen, Field	mg/L	13.1
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	DMSeO - Dimethylselenoxide	mg/L	<0.00001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Fluoride	mg/L	0.154
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Hardness - Dissolved (as CaCO3)	mg/L	138
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	ion balance (APHA)	%	4.62
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Iron (Fe)-Dissolved	mg/L	<0.01
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Iron (Fe)-Total	mg/L	0.034
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Lead (Pb)-Dissolved	mg/L	<0.00005
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Lead (Pb)-Total	mg/L	<0.00005
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Lithium (Li)-Dissolved	mg/L	0.0037
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Lithium (Li)-Total	mg/L	0.0034
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Magnesium (Mg)-Dissolved	mg/L	11.9
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Magnesium (Mg)-Total	mg/L	12.2
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Manganese (Mn)-Dissolved	mg/L	0.00058
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Manganese (Mn)-Total	mg/L	0.00292
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Mercury (Hg)-Total	mg/L	<0.000005
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Molybdenum (Mo)-Dissolved	mg/L	0.000569
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Molybdenum (Mo)-Total	mg/L	0.00063
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Nickel (Ni)-Dissolved	mg/L	<0.0005
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Nickel (Ni)-Total	mg/L	0.00066
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Nitrate (as N)	mg/L	0.989
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Nitrite (as N)	mg/L	<0.001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	ORP	mV	328
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Orthophosphate	mg/L	<0.001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	pH, Field	pH	8.15
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	pH, Lab	pH	7.98
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Phosphorus (P)-Total	mg/L	0.0109
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Potassium (K)-Dissolved	mg/L	0.413
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Potassium (K)-Total	mg/L	0.457
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Se(IV) - Selenite	mg/L	0.000039
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Se(VI) - Selenate	mg/L	0.00594
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	SeCN - Selenocyanate	mg/L	<0.00001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Selenium (Se)-Dissolved	mg/L	0.00594
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Selenium (Se)-Total	mg/L	0.006155
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Selenium Unknown	mg/L	<0.00001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Selenosulphate	mg/L	<0.00001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	SeMe - Selenomethionine	mg/L	<0.00001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Silicon (Si)-Dissolved	mg/L	1.47
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Silicon (Si)-Total	mg/L	1.59
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Silver (Ag)-Dissolved	mg/L	<0.00001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Silver (Ag)-Total	mg/L	<0.00001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Sodium (Na)-Dissolved	mg/L	0.488
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Sodium (Na)-Total	mg/L	0.484
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Specific Conductivity	uS/cm	278.5
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Strontium (Sr)-Dissolved	mg/L	0.0674
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Strontium (Sr)-Total	mg/L	0.0717
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Sulphate	mg/L	34.2
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Sulphur (S)-Dissolved	mg/L	10.7
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Sulphur (S)-Total	mg/L	11.3
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Temperature, Field	deg c	4
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Thallium (Tl)-Total	mg/L	<0.00001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Tin (Sn)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Tin (Sn)-Total	mg/L	<0.0001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Titanium (Ti)-Total	mg/L	0.00065
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Total Dissolved Solids	mg/L	152
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Total Kjeldahl Nitrogen	mg/L	<0.5
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Total Organic Carbon	mg/L	3.13
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Total Suspended Solids	mg/L	7.4
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Turbidity, Lab	NTU	2.37
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Uranium (U)-Dissolved	mg/L	0.000526
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Uranium (U)-Total	mg/L	0.000537
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Vanadium (V)-Dissolved	mg/L	<0.0005
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Vanadium (V)-Total	mg/L	<0.0005
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Zinc (Zn)-Dissolved	mg/L	<0.001
13	6	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Zinc (Zn)-Total	mg/L	<0.003
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Acidity (as CaCO3)	mg/L	<2
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Bicarbonate (as CaCO3)	mg/L	165
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Bicarbonate (as HCO3)	mg/L	202
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Carbonate (as CO3)	mg/L	<1
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Hydroxide (as OH)	mg/L	<1
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Total (as CaCO3)	mg/L	165
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Aluminum (Al)-Dissolved	mg/L	0.0013
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Aluminum (Al)-Total	mg/L	0.006
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Ammonia, Total (as N)	mg/L	<0.005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Anion Sum	meq/L	6.8
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Antimony (Sb)-Dissolved	mg/L	<0.0001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Antimony (Sb)-Total	mg/L	<0.0001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Arsenic (As)-Dissolved	mg/L	<0.0001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Arsenic (As)-Total	mg/L	0.00011
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Barium (Ba)-Dissolved	mg/L	0.074
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Barium (Ba)-Total	mg/L	0.0682
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Beryllium (Be)-Total	mg/L	<0.00002
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Bismuth (Bi)-Total	mg/L	<0.00005
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Boron (B)-Dissolved	mg/L	<0.01
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Boron (B)-Total	mg/L	<0.01
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Bromide (Br)	mg/L	<0.05
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cadmium (Cd)-Dissolved	mg/L	0.0000269
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cadmium (Cd)-Total	mg/L	0.000027
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Calcium (Ca)-Dissolved	mg/L	73.6
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Calcium (Ca)-Total	mg/L	71.6
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cation - Anion Balance	%	89.3
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cation Sum	meq/L	6.07
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Chloride (Cl)	mg/L	0.23
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Chromium (Cr)-Dissolved	mg/L	0.0001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Chromium (Cr)-Total	mg/L	0.00012
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cobalt (Co)-Total	mg/L	<0.0001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Conductivity	uS/cm	577
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Conductivity, Field	uS/cm	436.25
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Copper (Cu)-Dissolved	mg/L	<0.0002
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Copper (Cu)-Total	mg/L	<0.0005
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Dissolved Organic Carbon	mg/L	0.54
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Dissolved Oxygen, Field	%	78.85
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Dissolved Oxygen, Field	mg/L	9.32333333
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	DMSeO - Dimethylselenoxide	mg/L	<0.00001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Fluoride	mg/L	0.204
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Hardness - Dissolved (as CaCO3)	mg/L	301
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	ion balance (APHA)	%	5.67
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Iron (Fe)-Dissolved	mg/L	<0.01
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Iron (Fe)-Total	mg/L	<0.01
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Lead (Pb)-Dissolved	mg/L	<0.00005
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Lead (Pb)-Total	mg/L	<0.00005
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Lithium (Li)-Dissolved	mg/L	0.0116
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Lithium (Li)-Total	mg/L	0.012
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Magnesium (Mg)-Dissolved	mg/L	28.5
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Magnesium (Mg)-Total	mg/L	27.2
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Manganese (Mn)-Dissolved	mg/L	0.00047
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Manganese (Mn)-Total	mg/L	0.00071
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Mercury (Hg)-Total	mg/L	<0.000005
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Molybdenum (Mo)-Dissolved	mg/L	0.000839
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Molybdenum (Mo)-Total	mg/L	0.000783
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Nickel (Ni)-Dissolved	mg/L	0.00133
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Nickel (Ni)-Total	mg/L	0.00144
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Nitrate (as N)	mg/L	5.08
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Nitrite (as N)	mg/L	0.0037
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	ORP	mV	290
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Orthophosphate	mg/L	0.0019
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	pH, Field	pH	7.89333333
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	pH, Lab	pH	8.05
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Phosphorus (P)-Total	mg/L	<0.002
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Potassium (K)-Dissolved	mg/L	0.859
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Potassium (K)-Total	mg/L	0.854
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Se(IV) - Selenite	mg/L	0.000124
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Se(VI) - Selenate	mg/L	0.0307
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	SeCN - Selenocyanate	mg/L	<0.00001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Selenium (Se)-Dissolved	mg/L	0.03205
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Selenium (Se)-Total	mg/L	0.0286
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Selenium Unknown	mg/L	<0.00001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Selenosulphate	mg/L	<0.00001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	SeMe - Selenomethionine	mg/L	<0.00001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Silicon (Si)-Dissolved	mg/L	1.84
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Silicon (Si)-Total	mg/L	1.83
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Silver (Ag)-Dissolved	mg/L	<0.00001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Silver (Ag)-Total	mg/L	<0.00001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Sodium (Na)-Dissolved	mg/L	0.694
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Sodium (Na)-Total	mg/L	0.698
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Specific Conductivity	uS/cm	643
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Strontium (Sr)-Dissolved	mg/L	0.122
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Strontium (Sr)-Total	mg/L	0.116
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Sulphate	mg/L	150
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Sulphur (S)-Dissolved	mg/L	52.1
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Sulphur (S)-Total	mg/L	53.6
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Temperature, Field	deg c	8.166666667
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Thallium (Tl)-Total	mg/L	<0.00001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Tin (Sn)-Dissolved	mg/L	<0.0001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Tin (Sn)-Total	mg/L	<0.0001
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Titanium (Ti)-Total	mg/L	<0.0003
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Total Dissolved Solids	mg/L	391
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Total Kjeldahl Nitrogen	mg/L	<0.5
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Total Organic Carbon	mg/L	0.53
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Total Suspended Solids	mg/L	<1
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Turbidity, Lab	NTU	0.11
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Uranium (U)-Dissolved	mg/L	0.00124
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Uranium (U)-Total	mg/L	0.00124
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Vanadium (V)-Dissolved	mg/L	<0.0005
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Vanadium (V)-Total	mg/L	<0.0005
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Zinc (Zn)-Dissolved	mg/L	0.0011
16	9	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Zinc (Zn)-Total	mg/L	<0.003
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Acidity (as CaCO3)	mg/L	<2
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Bicarbonate (as CaCO3)	mg/L	145
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Bicarbonate (as HCO3)	mg/L	177
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Carbonate (as CO3)	mg/L	<1
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Hydroxide (as OH)	mg/L	<1
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Alkalinity, Total (as CaCO3)	mg/L	145
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Aluminum (Al)-Dissolved	mg/L	<0.001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Aluminum (Al)-Total	mg/L	0.0041

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Ammonia, Total (as N)	mg/L	<0.005
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Anion Sum	meq/L	7.59
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Antimony (Sb)-Dissolved	mg/L	<0.0001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Antimony (Sb)-Total	mg/L	<0.0001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Arsenic (As)-Dissolved	mg/L	<0.0001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Arsenic (As)-Total	mg/L	0.00011
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Barium (Ba)-Dissolved	mg/L	0.0919
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Barium (Ba)-Total	mg/L	0.0885
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Beryllium (Be)-Total	mg/L	<0.00002
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Bismuth (Bi)-Total	mg/L	<0.00005
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Boron (B)-Dissolved	mg/L	<0.01
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Boron (B)-Total	mg/L	<0.01
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Bromide (Br)	mg/L	<0.05
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cadmium (Cd)-Dissolved	mg/L	0.0000208
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cadmium (Cd)-Total	mg/L	0.0000248
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Calcium (Ca)-Dissolved	mg/L	91.8
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Calcium (Ca)-Total	mg/L	96.2
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cation - Anion Balance	%	99.5
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cation Sum	meq/L	7.55
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Chloride (Cl)	mg/L	0.31
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Chromium (Cr)-Dissolved	mg/L	0.00014
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Chromium (Cr)-Total	mg/L	0.00011
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cobalt (Co)-Dissolved	mg/L	<0.0001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Cobalt (Co)-Total	mg/L	<0.0001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Conductivity	uS/cm	654
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Conductivity, Field	uS/cm	276
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Copper (Cu)-Dissolved	mg/L	<0.0002
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Copper (Cu)-Total	mg/L	<0.0005
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Dissolved Organic Carbon	mg/L	<0.5
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Dissolved Oxygen, Field	%	80.6
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Dissolved Oxygen, Field	mg/L	11.11
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	DMSeO - Dimethylselenoxide	mg/L	<0.00001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Fluoride	mg/L	0.176
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Hardness - Dissolved (as CaCO3)	mg/L	375
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	ion balance (APHA)	%	-0.26
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Iron (Fe)-Dissolved	mg/L	<0.01
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Iron (Fe)-Total	mg/L	<0.01
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Lead (Pb)-Dissolved	mg/L	<0.00005
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Lead (Pb)-Total	mg/L	<0.00005
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Lithium (Li)-Dissolved	mg/L	0.0087
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Lithium (Li)-Total	mg/L	0.0086
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Magnesium (Mg)-Dissolved	mg/L	35.5
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Magnesium (Mg)-Total	mg/L	38.1
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Manganese (Mn)-Dissolved	mg/L	0.00074
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Manganese (Mn)-Total	mg/L	0.00083
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Mercury (Hg)-Total	mg/L	<0.000005
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Molybdenum (Mo)-Dissolved	mg/L	0.000686
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Molybdenum (Mo)-Total	mg/L	0.000652
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Nickel (Ni)-Dissolved	mg/L	0.00068
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Nickel (Ni)-Total	mg/L	0.00103
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Nitrate (as N)	mg/L	5.42
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Nitrite (as N)	mg/L	0.0017
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	ORP	mV	440
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Orthophosphate	mg/L	<0.001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	pH, Field	pH	7.69
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	pH, Lab	pH	8.25
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Phosphorus (P)-Total	mg/L	0.0103
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Potassium (K)-Dissolved	mg/L	0.791
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Potassium (K)-Total	mg/L	0.849
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Se(IV) - Selenite	mg/L	0.000093
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Se(VI) - Selenate	mg/L	0.0347
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	SeCN - Selenocyanate	mg/L	<0.00001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Selenium (Se)-Dissolved	mg/L	0.03675
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Selenium (Se)-Total	mg/L	0.037133333
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Selenium Unknown	mg/L	<0.00001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Selenosulphate	mg/L	<0.00001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	SeMe - Selenomethionine	mg/L	<0.00001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Silicon (Si)-Dissolved	mg/L	1.66
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Silicon (Si)-Total	mg/L	1.73
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Silver (Ag)-Dissolved	mg/L	<0.00001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Silver (Ag)-Total	mg/L	<0.00001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Sodium (Na)-Dissolved	mg/L	0.729
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Sodium (Na)-Total	mg/L	0.771
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Specific Conductivity	uS/cm	436
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Strontium (Sr)-Dissolved	mg/L	0.139
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Strontium (Sr)-Total	mg/L	0.142
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Sulphate	mg/L	206
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Sulphur (S)-Dissolved	mg/L	72.3
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Sulphur (S)-Total	mg/L	72.1
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Temperature, Field	deg c	2
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Thallium (Tl)-Dissolved	mg/L	<0.00001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Thallium (Tl)-Total	mg/L	<0.00001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Tin (Sn)-Dissolved	mg/L	<0.0001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Tin (Sn)-Total	mg/L	<0.0001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Titanium (Ti)-Total	mg/L	<0.0003
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Total Dissolved Solids	mg/L	464
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Total Kjeldahl Nitrogen	mg/L	1.7
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Total Organic Carbon	mg/L	0.52
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Total Suspended Solids	mg/L	1.3
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Turbidity, Lab	NTU	0.13
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Uranium (U)-Dissolved	mg/L	0.00145
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Uranium (U)-Total	mg/L	0.00142
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Vanadium (V)-Dissolved	mg/L	<0.0005
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Vanadium (V)-Total	mg/L	<0.0005
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Zinc (Zn)-Dissolved	mg/L	<0.001
5	12	2022	FR_FOUCL (RG_FOUCL)	FR_FOUCL	Zinc (Zn)-Total	mg/L	<0.003
13	6	2022	RG_FOUNGD	RG_FOUNGD	Acidity (as CaCO3)	mg/L	<2
13	6	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	117
13	6	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Bicarbonate (as HCO3)	mg/L	142
13	6	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
13	6	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Carbonate (as CO3)	mg/L	<1
13	6	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	6	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Hydroxide (as OH)	mg/L	<1
13	6	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Total (as CaCO3)	mg/L	117
13	6	2022	RG_FOUNGD	RG_FOUNGD	Aluminum (Al)-Dissolved	mg/L	0.0032

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	6	2022	RG_FOUNGD	RG_FOUNGD	Aluminum (Al)-Total	mg/L	0.0584
13	6	2022	RG_FOUNGD	RG_FOUNGD	Ammonia, Total (as N)	mg/L	<0.005
13	6	2022	RG_FOUNGD	RG_FOUNGD	Anion Sum	meq/L	3.58
13	6	2022	RG_FOUNGD	RG_FOUNGD	Antimony (Sb)-Dissolved	mg/L	<0.0001
13	6	2022	RG_FOUNGD	RG_FOUNGD	Antimony (Sb)-Total	mg/L	<0.0001
13	6	2022	RG_FOUNGD	RG_FOUNGD	Arsenic (As)-Dissolved	mg/L	<0.0001
13	6	2022	RG_FOUNGD	RG_FOUNGD	Arsenic (As)-Total	mg/L	0.00012
13	6	2022	RG_FOUNGD	RG_FOUNGD	Barium (Ba)-Dissolved	mg/L	0.0282
13	6	2022	RG_FOUNGD	RG_FOUNGD	Barium (Ba)-Total	mg/L	0.0288
13	6	2022	RG_FOUNGD	RG_FOUNGD	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	6	2022	RG_FOUNGD	RG_FOUNGD	Beryllium (Be)-Total	mg/L	<0.00002
13	6	2022	RG_FOUNGD	RG_FOUNGD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	6	2022	RG_FOUNGD	RG_FOUNGD	Bismuth (Bi)-Total	mg/L	<0.00005
13	6	2022	RG_FOUNGD	RG_FOUNGD	Boron (B)-Dissolved	mg/L	<0.01
13	6	2022	RG_FOUNGD	RG_FOUNGD	Boron (B)-Total	mg/L	<0.01
13	6	2022	RG_FOUNGD	RG_FOUNGD	Bromide (Br)	mg/L	<0.05
13	6	2022	RG_FOUNGD	RG_FOUNGD	Cadmium (Cd)-Dissolved	mg/L	0.0000235
13	6	2022	RG_FOUNGD	RG_FOUNGD	Cadmium (Cd)-Total	mg/L	0.0000338
13	6	2022	RG_FOUNGD	RG_FOUNGD	Calcium (Ca)-Dissolved	mg/L	41.6
13	6	2022	RG_FOUNGD	RG_FOUNGD	Calcium (Ca)-Total	mg/L	41.6
13	6	2022	RG_FOUNGD	RG_FOUNGD	Cation - Anion Balance	%	93
13	6	2022	RG_FOUNGD	RG_FOUNGD	Cation Sum	meq/L	3.33
13	6	2022	RG_FOUNGD	RG_FOUNGD	Chloride (Cl)	mg/L	0.16
13	6	2022	RG_FOUNGD	RG_FOUNGD	Chromium (Cr)-Dissolved	mg/L	<0.0001
13	6	2022	RG_FOUNGD	RG_FOUNGD	Chromium (Cr)-Total	mg/L	0.00019
13	6	2022	RG_FOUNGD	RG_FOUNGD	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	6	2022	RG_FOUNGD	RG_FOUNGD	Cobalt (Co)-Total	mg/L	<0.0001
13	6	2022	RG_FOUNGD	RG_FOUNGD	Conductivity	uS/cm	304
13	6	2022	RG_FOUNGD	RG_FOUNGD	Copper (Cu)-Dissolved	mg/L	0.00022
13	6	2022	RG_FOUNGD	RG_FOUNGD	Copper (Cu)-Total	mg/L	<0.0005
13	6	2022	RG_FOUNGD	RG_FOUNGD	Dissolved Organic Carbon	mg/L	1.93
13	6	2022	RG_FOUNGD	RG_FOUNGD	Dissolved Oxygen, Field	%	80
13	6	2022	RG_FOUNGD	RG_FOUNGD	Dissolved Oxygen, Field	mg/L	10.08
13	6	2022	RG_FOUNGD	RG_FOUNGD	DMSeO - Dimethylselenoxide	mg/L	<0.00001
13	6	2022	RG_FOUNGD	RG_FOUNGD	Fluoride	mg/L	0.146
13	6	2022	RG_FOUNGD	RG_FOUNGD	Hardness - Dissolved (as CaCO3)	mg/L	164
13	6	2022	RG_FOUNGD	RG_FOUNGD	ion balance (APHA)	%	3.62
13	6	2022	RG_FOUNGD	RG_FOUNGD	Iron (Fe)-Dissolved	mg/L	<0.01
13	6	2022	RG_FOUNGD	RG_FOUNGD	Iron (Fe)-Total	mg/L	0.086
13	6	2022	RG_FOUNGD	RG_FOUNGD	Lead (Pb)-Dissolved	mg/L	<0.00005
13	6	2022	RG_FOUNGD	RG_FOUNGD	Lead (Pb)-Total	mg/L	0.00006
13	6	2022	RG_FOUNGD	RG_FOUNGD	Lithium (Li)-Dissolved	mg/L	0.0115
13	6	2022	RG_FOUNGD	RG_FOUNGD	Lithium (Li)-Total	mg/L	0.0109
13	6	2022	RG_FOUNGD	RG_FOUNGD	Magnesium (Mg)-Dissolved	mg/L	14.7
13	6	2022	RG_FOUNGD	RG_FOUNGD	Magnesium (Mg)-Total	mg/L	15
13	6	2022	RG_FOUNGD	RG_FOUNGD	Manganese (Mn)-Dissolved	mg/L	0.00056
13	6	2022	RG_FOUNGD	RG_FOUNGD	Manganese (Mn)-Total	mg/L	0.00477
13	6	2022	RG_FOUNGD	RG_FOUNGD	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	6	2022	RG_FOUNGD	RG_FOUNGD	Mercury (Hg)-Total	mg/L	<0.000005
13	6	2022	RG_FOUNGD	RG_FOUNGD	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
13	6	2022	RG_FOUNGD	RG_FOUNGD	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
13	6	2022	RG_FOUNGD	RG_FOUNGD	Molybdenum (Mo)-Dissolved	mg/L	0.000612
13	6	2022	RG_FOUNGD	RG_FOUNGD	Molybdenum (Mo)-Total	mg/L	0.000639
13	6	2022	RG_FOUNGD	RG_FOUNGD	Nickel (Ni)-Dissolved	mg/L	0.00132
13	6	2022	RG_FOUNGD	RG_FOUNGD	Nickel (Ni)-Total	mg/L	0.00173
13	6	2022	RG_FOUNGD	RG_FOUNGD	Nitrate (as N)	mg/L	2.71
13	6	2022	RG_FOUNGD	RG_FOUNGD	Nitrite (as N)	mg/L	<0.001
13	6	2022	RG_FOUNGD	RG_FOUNGD	ORP	mV	330
13	6	2022	RG_FOUNGD	RG_FOUNGD	Orthophosphate	mg/L	<0.001
13	6	2022	RG_FOUNGD	RG_FOUNGD	pH, Field	pH	8.05
13	6	2022	RG_FOUNGD	RG_FOUNGD	pH, Lab	pH	8.07
13	6	2022	RG_FOUNGD	RG_FOUNGD	Phosphorus (P)-Total	mg/L	0.0083
13	6	2022	RG_FOUNGD	RG_FOUNGD	Potassium (K)-Dissolved	mg/L	0.554
13	6	2022	RG_FOUNGD	RG_FOUNGD	Potassium (K)-Total	mg/L	0.601
13	6	2022	RG_FOUNGD	RG_FOUNGD	Se(IV) - Selenite	mg/L	0.000053
13	6	2022	RG_FOUNGD	RG_FOUNGD	Se(VI) - Selenate	mg/L	0.00968
13	6	2022	RG_FOUNGD	RG_FOUNGD	SeCN - Selenocyanate	mg/L	<0.00001
13	6	2022	RG_FOUNGD	RG_FOUNGD	Selenium (Se)-Dissolved	mg/L	0.00983
13	6	2022	RG_FOUNGD	RG_FOUNGD	Selenium (Se)-Total	mg/L	0.010333333
13	6	2022	RG_FOUNGD	RG_FOUNGD	Selenium Unknown	mg/L	<0.00001
13	6	2022	RG_FOUNGD	RG_FOUNGD	Selenosulphate	mg/L	<0.00001
13	6	2022	RG_FOUNGD	RG_FOUNGD	SeMe - Selenomethionine	mg/L	<0.00001
13	6	2022	RG_FOUNGD	RG_FOUNGD	Silicon (Si)-Dissolved	mg/L	1.46
13	6	2022	RG_FOUNGD	RG_FOUNGD	Silicon (Si)-Total	mg/L	1.64
13	6	2022	RG_FOUNGD	RG_FOUNGD	Silver (Ag)-Dissolved	mg/L	<0.00001
13	6	2022	RG_FOUNGD	RG_FOUNGD	Silver (Ag)-Total	mg/L	<0.00001
13	6	2022	RG_FOUNGD	RG_FOUNGD	Sodium (Na)-Dissolved	mg/L	0.705
13	6	2022	RG_FOUNGD	RG_FOUNGD	Sodium (Na)-Total	mg/L	0.72
13	6	2022	RG_FOUNGD	RG_FOUNGD	Strontium (Sr)-Dissolved	mg/L	0.0697
13	6	2022	RG_FOUNGD	RG_FOUNGD	Strontium (Sr)-Total	mg/L	0.0771
13	6	2022	RG_FOUNGD	RG_FOUNGD	Sulphate	mg/L	49.7
13	6	2022	RG_FOUNGD	RG_FOUNGD	Sulphur (S)-Dissolved	mg/L	16.3
13	6	2022	RG_FOUNGD	RG_FOUNGD	Sulphur (S)-Total	mg/L	17.5
13	6	2022	RG_FOUNGD	RG_FOUNGD	Temperature, Field	deg c	4.2
13	6	2022	RG_FOUNGD	RG_FOUNGD	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	6	2022	RG_FOUNGD	RG_FOUNGD	Thallium (Tl)-Total	mg/L	<0.00001
13	6	2022	RG_FOUNGD	RG_FOUNGD	Tin (Sn)-Dissolved	mg/L	<0.0001
13	6	2022	RG_FOUNGD	RG_FOUNGD	Tin (Sn)-Total	mg/L	<0.0001
13	6	2022	RG_FOUNGD	RG_FOUNGD	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	6	2022	RG_FOUNGD	RG_FOUNGD	Titanium (Ti)-Total	mg/L	0.00064
13	6	2022	RG_FOUNGD	RG_FOUNGD	Total Dissolved Solids	mg/L	187
13	6	2022	RG_FOUNGD	RG_FOUNGD	Total Kjeldahl Nitrogen	mg/L	<0.5
13	6	2022	RG_FOUNGD	RG_FOUNGD	Total Organic Carbon	mg/L	1.84
13	6	2022	RG_FOUNGD	RG_FOUNGD	Total Suspended Solids	mg/L	9.6
13	6	2022	RG_FOUNGD	RG_FOUNGD	Turbidity, Lab	NTU	3.57
13	6	2022	RG_FOUNGD	RG_FOUNGD	Uranium (U)-Dissolved	mg/L	0.0008
13	6	2022	RG_FOUNGD	RG_FOUNGD	Uranium (U)-Total	mg/L	0.000796
13	6	2022	RG_FOUNGD	RG_FOUNGD	Vanadium (V)-Dissolved	mg/L	<0.0005
13	6	2022	RG_FOUNGD	RG_FOUNGD	Vanadium (V)-Total	mg/L	<0.0005
13	6	2022	RG_FOUNGD	RG_FOUNGD	Zinc (Zn)-Dissolved	mg/L	0.0013
13	6	2022	RG_FOUNGD	RG_FOUNGD	Zinc (Zn)-Total	mg/L	<0.003
15	9	2022	RG_FOUNGD	RG_FOUNGD	Acidity (as CaCO3)	mg/L	<2
15	9	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	187.5
15	9	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Bicarbonate (as HCO3)	mg/L	227
15	9	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
15	9	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Carbonate (as CO3)	mg/L	<1
15	9	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	9	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Hydroxide (as OH)	mg/L	<1
15	9	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Total (as CaCO3)	mg/L	187.5
15	9	2022	RG_FOUNGD	RG_FOUNGD	Aluminum (Al)-Dissolved	mg/L	0.00145
15	9	2022	RG_FOUNGD	RG_FOUNGD	Aluminum (Al)-Total	mg/L	0.01835

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	9	2022	RG_FOUNGD	RG_FOUNGD	Ammonia, Total (as N)	mg/L	0.00595
15	9	2022	RG_FOUNGD	RG_FOUNGD	Anion Sum	meq/L	10
15	9	2022	RG_FOUNGD	RG_FOUNGD	Antimony (Sb)-Dissolved	mg/L	0.000205
15	9	2022	RG_FOUNGD	RG_FOUNGD	Antimony (Sb)-Total	mg/L	0.000195
15	9	2022	RG_FOUNGD	RG_FOUNGD	Arsenic (As)-Dissolved	mg/L	<0.0001
15	9	2022	RG_FOUNGD	RG_FOUNGD	Arsenic (As)-Total	mg/L	0.00014
15	9	2022	RG_FOUNGD	RG_FOUNGD	Barium (Ba)-Dissolved	mg/L	0.0788
15	9	2022	RG_FOUNGD	RG_FOUNGD	Barium (Ba)-Total	mg/L	0.0734
15	9	2022	RG_FOUNGD	RG_FOUNGD	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	9	2022	RG_FOUNGD	RG_FOUNGD	Beryllium (Be)-Total	mg/L	<0.00002
15	9	2022	RG_FOUNGD	RG_FOUNGD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	9	2022	RG_FOUNGD	RG_FOUNGD	Bismuth (Bi)-Total	mg/L	<0.00005
15	9	2022	RG_FOUNGD	RG_FOUNGD	Boron (B)-Dissolved	mg/L	0.012
15	9	2022	RG_FOUNGD	RG_FOUNGD	Boron (B)-Total	mg/L	0.0125
15	9	2022	RG_FOUNGD	RG_FOUNGD	Bromide (Br)	mg/L	<0.05
15	9	2022	RG_FOUNGD	RG_FOUNGD	Cadmium (Cd)-Dissolved	mg/L	0.00008025
15	9	2022	RG_FOUNGD	RG_FOUNGD	Cadmium (Cd)-Total	mg/L	0.0001004
15	9	2022	RG_FOUNGD	RG_FOUNGD	Calcium (Ca)-Dissolved	mg/L	115
15	9	2022	RG_FOUNGD	RG_FOUNGD	Calcium (Ca)-Total	mg/L	109
15	9	2022	RG_FOUNGD	RG_FOUNGD	Cation - Anion Balance	%	92.3
15	9	2022	RG_FOUNGD	RG_FOUNGD	Cation Sum	meq/L	9.23
15	9	2022	RG_FOUNGD	RG_FOUNGD	Chloride (Cl)	mg/L	0.75
15	9	2022	RG_FOUNGD	RG_FOUNGD	Chromium (Cr)-Dissolved	mg/L	<0.0001
15	9	2022	RG_FOUNGD	RG_FOUNGD	Chromium (Cr)-Total	mg/L	0.00012
15	9	2022	RG_FOUNGD	RG_FOUNGD	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	9	2022	RG_FOUNGD	RG_FOUNGD	Cobalt (Co)-Total	mg/L	<0.0001
15	9	2022	RG_FOUNGD	RG_FOUNGD	Conductivity	uS/cm	913.5
15	9	2022	RG_FOUNGD	RG_FOUNGD	Conductivity, Field	uS/cm	841
15	9	2022	RG_FOUNGD	RG_FOUNGD	Copper (Cu)-Dissolved	mg/L	0.000205
15	9	2022	RG_FOUNGD	RG_FOUNGD	Copper (Cu)-Total	mg/L	<0.0005
15	9	2022	RG_FOUNGD	RG_FOUNGD	Dissolved Organic Carbon	mg/L	0.65
15	9	2022	RG_FOUNGD	RG_FOUNGD	Dissolved Oxygen, Field	%	78.9
15	9	2022	RG_FOUNGD	RG_FOUNGD	Dissolved Oxygen, Field	mg/L	315.21
15	9	2022	RG_FOUNGD	RG_FOUNGD	DMSeO - Dimethylselenoxide	mg/L	<0.00001
15	9	2022	RG_FOUNGD	RG_FOUNGD	Fluoride	mg/L	0.188
15	9	2022	RG_FOUNGD	RG_FOUNGD	Hardness - Dissolved (as CaCO3)	mg/L	498
15	9	2022	RG_FOUNGD	RG_FOUNGD	ion balance (APHA)	%	4
15	9	2022	RG_FOUNGD	RG_FOUNGD	Iron (Fe)-Dissolved	mg/L	<0.01
15	9	2022	RG_FOUNGD	RG_FOUNGD	Iron (Fe)-Total	mg/L	0.0325
15	9	2022	RG_FOUNGD	RG_FOUNGD	Lead (Pb)-Dissolved	mg/L	<0.00005
15	9	2022	RG_FOUNGD	RG_FOUNGD	Lead (Pb)-Total	mg/L	0.0000615
15	9	2022	RG_FOUNGD	RG_FOUNGD	Lithium (Li)-Dissolved	mg/L	0.066
15	9	2022	RG_FOUNGD	RG_FOUNGD	Lithium (Li)-Total	mg/L	0.0652
15	9	2022	RG_FOUNGD	RG_FOUNGD	Magnesium (Mg)-Dissolved	mg/L	51.25
15	9	2022	RG_FOUNGD	RG_FOUNGD	Magnesium (Mg)-Total	mg/L	49.6
15	9	2022	RG_FOUNGD	RG_FOUNGD	Manganese (Mn)-Dissolved	mg/L	0.00066
15	9	2022	RG_FOUNGD	RG_FOUNGD	Manganese (Mn)-Total	mg/L	0.00274
15	9	2022	RG_FOUNGD	RG_FOUNGD	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	9	2022	RG_FOUNGD	RG_FOUNGD	Mercury (Hg)-Total	mg/L	<0.000005
15	9	2022	RG_FOUNGD	RG_FOUNGD	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
15	9	2022	RG_FOUNGD	RG_FOUNGD	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
15	9	2022	RG_FOUNGD	RG_FOUNGD	Molybdenum (Mo)-Dissolved	mg/L	0.001245
15	9	2022	RG_FOUNGD	RG_FOUNGD	Molybdenum (Mo)-Total	mg/L	0.001145
15	9	2022	RG_FOUNGD	RG_FOUNGD	Nickel (Ni)-Dissolved	mg/L	0.00782
15	9	2022	RG_FOUNGD	RG_FOUNGD	Nickel (Ni)-Total	mg/L	0.00794
15	9	2022	RG_FOUNGD	RG_FOUNGD	Nitrate (as N)	mg/L	21.35
15	9	2022	RG_FOUNGD	RG_FOUNGD	Nitrite (as N)	mg/L	0.01025
15	9	2022	RG_FOUNGD	RG_FOUNGD	ORP	mV	287
15	9	2022	RG_FOUNGD	RG_FOUNGD	Orthophosphate	mg/L	0.00155
15	9	2022	RG_FOUNGD	RG_FOUNGD	pH, Field	pH	7.87
15	9	2022	RG_FOUNGD	RG_FOUNGD	pH, Lab	pH	8.14
15	9	2022	RG_FOUNGD	RG_FOUNGD	Phosphorus (P)-Total	mg/L	0.0034
15	9	2022	RG_FOUNGD	RG_FOUNGD	Potassium (K)-Dissolved	mg/L	1.74
15	9	2022	RG_FOUNGD	RG_FOUNGD	Potassium (K)-Total	mg/L	1.72
15	9	2022	RG_FOUNGD	RG_FOUNGD	Se(IV) - Selenite	mg/L	0.000158
15	9	2022	RG_FOUNGD	RG_FOUNGD	Se(VI) - Selenate	mg/L	0.0494
15	9	2022	RG_FOUNGD	RG_FOUNGD	SeCN - Selenocyanate	mg/L	<0.00001
15	9	2022	RG_FOUNGD	RG_FOUNGD	Selenium (Se)-Dissolved	mg/L	0.06165
15	9	2022	RG_FOUNGD	RG_FOUNGD	Selenium (Se)-Total	mg/L	0.058266667
15	9	2022	RG_FOUNGD	RG_FOUNGD	Selenium Unknown	mg/L	<0.00001
15	9	2022	RG_FOUNGD	RG_FOUNGD	Selenosulphate	mg/L	<0.00001
15	9	2022	RG_FOUNGD	RG_FOUNGD	SeMe - Selenomethionine	mg/L	<0.00001
15	9	2022	RG_FOUNGD	RG_FOUNGD	Silicon (Si)-Dissolved	mg/L	1.885
15	9	2022	RG_FOUNGD	RG_FOUNGD	Silicon (Si)-Total	mg/L	1.87
15	9	2022	RG_FOUNGD	RG_FOUNGD	Silver (Ag)-Dissolved	mg/L	<0.00001
15	9	2022	RG_FOUNGD	RG_FOUNGD	Silver (Ag)-Total	mg/L	<0.00001
15	9	2022	RG_FOUNGD	RG_FOUNGD	Sodium (Na)-Dissolved	mg/L	2.225
15	9	2022	RG_FOUNGD	RG_FOUNGD	Sodium (Na)-Total	mg/L	2.255
15	9	2022	RG_FOUNGD	RG_FOUNGD	Specific Conductivity	uS/cm	1227
15	9	2022	RG_FOUNGD	RG_FOUNGD	Strontium (Sr)-Dissolved	mg/L	0.175
15	9	2022	RG_FOUNGD	RG_FOUNGD	Strontium (Sr)-Total	mg/L	0.166
15	9	2022	RG_FOUNGD	RG_FOUNGD	Sulphate	mg/L	272
15	9	2022	RG_FOUNGD	RG_FOUNGD	Sulphur (S)-Dissolved	mg/L	87.6
15	9	2022	RG_FOUNGD	RG_FOUNGD	Sulphur (S)-Total	mg/L	88.1
15	9	2022	RG_FOUNGD	RG_FOUNGD	Temperature, Field	deg c	8.933333333
15	9	2022	RG_FOUNGD	RG_FOUNGD	Thallium (Tl)-Dissolved	mg/L	0.00001
15	9	2022	RG_FOUNGD	RG_FOUNGD	Thallium (Tl)-Total	mg/L	0.00001
15	9	2022	RG_FOUNGD	RG_FOUNGD	Tin (Sn)-Dissolved	mg/L	<0.0001
15	9	2022	RG_FOUNGD	RG_FOUNGD	Tin (Sn)-Total	mg/L	<0.0001
15	9	2022	RG_FOUNGD	RG_FOUNGD	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	9	2022	RG_FOUNGD	RG_FOUNGD	Titanium (Ti)-Total	mg/L	0.000405
15	9	2022	RG_FOUNGD	RG_FOUNGD	Total Dissolved Solids	mg/L	692.5
15	9	2022	RG_FOUNGD	RG_FOUNGD	Total Kjeldahl Nitrogen	mg/L	1.915
15	9	2022	RG_FOUNGD	RG_FOUNGD	Total Organic Carbon	mg/L	0.63
15	9	2022	RG_FOUNGD	RG_FOUNGD	Total Suspended Solids	mg/L	1.7
15	9	2022	RG_FOUNGD	RG_FOUNGD	Turbidity, Lab	NTU	0.215
15	9	2022	RG_FOUNGD	RG_FOUNGD	Uranium (U)-Dissolved	mg/L	0.00331
15	9	2022	RG_FOUNGD	RG_FOUNGD	Uranium (U)-Total	mg/L	0.003255
15	9	2022	RG_FOUNGD	RG_FOUNGD	Vanadium (V)-Dissolved	mg/L	<0.0005
15	9	2022	RG_FOUNGD	RG_FOUNGD	Vanadium (V)-Total	mg/L	0.00052
15	9	2022	RG_FOUNGD	RG_FOUNGD	Zinc (Zn)-Dissolved	mg/L	0.00505
15	9	2022	RG_FOUNGD	RG_FOUNGD	Zinc (Zn)-Total	mg/L	0.00595
6	12	2022	RG_FOUNGD	RG_FOUNGD	Acidity (as CaCO3)	mg/L	<2
6	12	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	184
6	12	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Bicarbonate (as HCO3)	mg/L	225
6	12	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
6	12	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Carbonate (as CO3)	mg/L	<1
6	12	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	12	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Hydroxide (as OH)	mg/L	<1
6	12	2022	RG_FOUNGD	RG_FOUNGD	Alkalinity, Total (as CaCO3)	mg/L	184
6	12	2022	RG_FOUNGD	RG_FOUNGD	Aluminum (Al)-Dissolved	mg/L	<0.001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	12	2022	RG_FOUNGD	RG_FOUNGD	Aluminum (Al)-Total	mg/L	0.0034
6	12	2022	RG_FOUNGD	RG_FOUNGD	Ammonia, Total (as N)	mg/L	<0.005
6	12	2022	RG_FOUNGD	RG_FOUNGD	Anion Sum	meq/L	13.6
6	12	2022	RG_FOUNGD	RG_FOUNGD	Antimony (Sb)-Dissolved	mg/L	0.0002
6	12	2022	RG_FOUNGD	RG_FOUNGD	Antimony (Sb)-Total	mg/L	0.00018
6	12	2022	RG_FOUNGD	RG_FOUNGD	Arsenic (As)-Dissolved	mg/L	<0.0001
6	12	2022	RG_FOUNGD	RG_FOUNGD	Arsenic (As)-Total	mg/L	<0.0001
6	12	2022	RG_FOUNGD	RG_FOUNGD	Barium (Ba)-Dissolved	mg/L	0.112
6	12	2022	RG_FOUNGD	RG_FOUNGD	Barium (Ba)-Total	mg/L	0.0987
6	12	2022	RG_FOUNGD	RG_FOUNGD	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	12	2022	RG_FOUNGD	RG_FOUNGD	Beryllium (Be)-Total	mg/L	<0.00002
6	12	2022	RG_FOUNGD	RG_FOUNGD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	12	2022	RG_FOUNGD	RG_FOUNGD	Bismuth (Bi)-Total	mg/L	<0.00005
6	12	2022	RG_FOUNGD	RG_FOUNGD	Boron (B)-Dissolved	mg/L	<0.01
6	12	2022	RG_FOUNGD	RG_FOUNGD	Boron (B)-Total	mg/L	<0.01
6	12	2022	RG_FOUNGD	RG_FOUNGD	Bromide (Br)	mg/L	<0.25
6	12	2022	RG_FOUNGD	RG_FOUNGD	Cadmium (Cd)-Dissolved	mg/L	0.0000792
6	12	2022	RG_FOUNGD	RG_FOUNGD	Cadmium (Cd)-Total	mg/L	0.0000819
6	12	2022	RG_FOUNGD	RG_FOUNGD	Calcium (Ca)-Dissolved	mg/L	150
6	12	2022	RG_FOUNGD	RG_FOUNGD	Calcium (Ca)-Total	mg/L	149
6	12	2022	RG_FOUNGD	RG_FOUNGD	Cation - Anion Balance	%	100
6	12	2022	RG_FOUNGD	RG_FOUNGD	Cation Sum	meq/L	13.6
6	12	2022	RG_FOUNGD	RG_FOUNGD	Chloride (Cl)	mg/L	1.14
6	12	2022	RG_FOUNGD	RG_FOUNGD	Chromium (Cr)-Dissolved	mg/L	<0.0001
6	12	2022	RG_FOUNGD	RG_FOUNGD	Chromium (Cr)-Total	mg/L	0.0001
6	12	2022	RG_FOUNGD	RG_FOUNGD	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	12	2022	RG_FOUNGD	RG_FOUNGD	Cobalt (Co)-Total	mg/L	<0.0001
6	12	2022	RG_FOUNGD	RG_FOUNGD	Conductivity	uS/cm	1090
6	12	2022	RG_FOUNGD	RG_FOUNGD	Conductivity, Field	uS/cm	680
6	12	2022	RG_FOUNGD	RG_FOUNGD	Copper (Cu)-Dissolved	mg/L	<0.0002
6	12	2022	RG_FOUNGD	RG_FOUNGD	Copper (Cu)-Total	mg/L	<0.0005
6	12	2022	RG_FOUNGD	RG_FOUNGD	Dissolved Organic Carbon	mg/L	<0.5
6	12	2022	RG_FOUNGD	RG_FOUNGD	Dissolved Oxygen, Field	%	84.1
6	12	2022	RG_FOUNGD	RG_FOUNGD	Dissolved Oxygen, Field	mg/L	11.7
6	12	2022	RG_FOUNGD	RG_FOUNGD	DMSeO - Dimethylselenoxide	mg/L	<0.00001
6	12	2022	RG_FOUNGD	RG_FOUNGD	Fluoride	mg/L	0.175
6	12	2022	RG_FOUNGD	RG_FOUNGD	Hardness - Dissolved (as CaCO3)	mg/L	670
6	12	2022	RG_FOUNGD	RG_FOUNGD	ion balance (APHA)	%	<0.01
6	12	2022	RG_FOUNGD	RG_FOUNGD	Iron (Fe)-Dissolved	mg/L	<0.01
6	12	2022	RG_FOUNGD	RG_FOUNGD	Iron (Fe)-Total	mg/L	<0.01
6	12	2022	RG_FOUNGD	RG_FOUNGD	Lead (Pb)-Dissolved	mg/L	<0.00005
6	12	2022	RG_FOUNGD	RG_FOUNGD	Lead (Pb)-Total	mg/L	<0.00005
6	12	2022	RG_FOUNGD	RG_FOUNGD	Lithium (Li)-Dissolved	mg/L	0.0923
6	12	2022	RG_FOUNGD	RG_FOUNGD	Lithium (Li)-Total	mg/L	0.0891
6	12	2022	RG_FOUNGD	RG_FOUNGD	Magnesium (Mg)-Dissolved	mg/L	71.8
6	12	2022	RG_FOUNGD	RG_FOUNGD	Magnesium (Mg)-Total	mg/L	73
6	12	2022	RG_FOUNGD	RG_FOUNGD	Manganese (Mn)-Dissolved	mg/L	0.00041
6	12	2022	RG_FOUNGD	RG_FOUNGD	Manganese (Mn)-Total	mg/L	0.00044
6	12	2022	RG_FOUNGD	RG_FOUNGD	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	12	2022	RG_FOUNGD	RG_FOUNGD	Mercury (Hg)-Total	mg/L	<0.000005
6	12	2022	RG_FOUNGD	RG_FOUNGD	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
6	12	2022	RG_FOUNGD	RG_FOUNGD	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
6	12	2022	RG_FOUNGD	RG_FOUNGD	Molybdenum (Mo)-Dissolved	mg/L	0.000953
6	12	2022	RG_FOUNGD	RG_FOUNGD	Molybdenum (Mo)-Total	mg/L	0.000982
6	12	2022	RG_FOUNGD	RG_FOUNGD	Nickel (Ni)-Dissolved	mg/L	0.00614
6	12	2022	RG_FOUNGD	RG_FOUNGD	Nickel (Ni)-Total	mg/L	0.00622
6	12	2022	RG_FOUNGD	RG_FOUNGD	Nitrate (as N)	mg/L	27.6
6	12	2022	RG_FOUNGD	RG_FOUNGD	Nitrite (as N)	mg/L	<0.005
6	12	2022	RG_FOUNGD	RG_FOUNGD	ORP	mV	430
6	12	2022	RG_FOUNGD	RG_FOUNGD	Orthophosphate	mg/L	<0.001
6	12	2022	RG_FOUNGD	RG_FOUNGD	pH, Field	pH	7.96
6	12	2022	RG_FOUNGD	RG_FOUNGD	pH, Lab	pH	8.27
6	12	2022	RG_FOUNGD	RG_FOUNGD	Phosphorus (P)-Total	mg/L	0.0021
6	12	2022	RG_FOUNGD	RG_FOUNGD	Potassium (K)-Dissolved	mg/L	1.98
6	12	2022	RG_FOUNGD	RG_FOUNGD	Potassium (K)-Total	mg/L	1.98
6	12	2022	RG_FOUNGD	RG_FOUNGD	Se(IV) - Selenite	mg/L	0.000145
6	12	2022	RG_FOUNGD	RG_FOUNGD	Se(VI) - Selenate	mg/L	0.0741
6	12	2022	RG_FOUNGD	RG_FOUNGD	SeCN - Selenocyanate	mg/L	<0.00001
6	12	2022	RG_FOUNGD	RG_FOUNGD	Selenium (Se)-Dissolved	mg/L	0.0843
6	12	2022	RG_FOUNGD	RG_FOUNGD	Selenium (Se)-Total	mg/L	0.075833333
6	12	2022	RG_FOUNGD	RG_FOUNGD	Selenium Unknown	mg/L	<0.00001
6	12	2022	RG_FOUNGD	RG_FOUNGD	Selenosulphate	mg/L	<0.00001
6	12	2022	RG_FOUNGD	RG_FOUNGD	SeMe - Selenomethionine	mg/L	<0.00001
6	12	2022	RG_FOUNGD	RG_FOUNGD	Silicon (Si)-Dissolved	mg/L	1.84
6	12	2022	RG_FOUNGD	RG_FOUNGD	Silicon (Si)-Total	mg/L	1.89
6	12	2022	RG_FOUNGD	RG_FOUNGD	Silver (Ag)-Dissolved	mg/L	<0.00001
6	12	2022	RG_FOUNGD	RG_FOUNGD	Silver (Ag)-Total	mg/L	<0.00001
6	12	2022	RG_FOUNGD	RG_FOUNGD	Sodium (Na)-Dissolved	mg/L	3.53
6	12	2022	RG_FOUNGD	RG_FOUNGD	Sodium (Na)-Total	mg/L	3.51
6	12	2022	RG_FOUNGD	RG_FOUNGD	Specific Conductivity	uS/cm	1229
6	12	2022	RG_FOUNGD	RG_FOUNGD	Strontium (Sr)-Dissolved	mg/L	0.207
6	12	2022	RG_FOUNGD	RG_FOUNGD	Strontium (Sr)-Total	mg/L	0.207
6	12	2022	RG_FOUNGD	RG_FOUNGD	Sulphate	mg/L	378
6	12	2022	RG_FOUNGD	RG_FOUNGD	Sulphur (S)-Dissolved	mg/L	132
6	12	2022	RG_FOUNGD	RG_FOUNGD	Sulphur (S)-Total	mg/L	128
6	12	2022	RG_FOUNGD	RG_FOUNGD	Temperature, Field	deg c	1.6
6	12	2022	RG_FOUNGD	RG_FOUNGD	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	12	2022	RG_FOUNGD	RG_FOUNGD	Thallium (Tl)-Total	mg/L	<0.00001
6	12	2022	RG_FOUNGD	RG_FOUNGD	Tin (Sn)-Dissolved	mg/L	<0.0001
6	12	2022	RG_FOUNGD	RG_FOUNGD	Tin (Sn)-Total	mg/L	<0.0001
6	12	2022	RG_FOUNGD	RG_FOUNGD	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	12	2022	RG_FOUNGD	RG_FOUNGD	Titanium (Ti)-Total	mg/L	<0.0003
6	12	2022	RG_FOUNGD	RG_FOUNGD	Total Dissolved Solids	mg/L	762
6	12	2022	RG_FOUNGD	RG_FOUNGD	Total Kjeldahl Nitrogen	mg/L	<0.5
6	12	2022	RG_FOUNGD	RG_FOUNGD	Total Organic Carbon	mg/L	<0.5
6	12	2022	RG_FOUNGD	RG_FOUNGD	Total Suspended Solids	mg/L	1.1
6	12	2022	RG_FOUNGD	RG_FOUNGD	Turbidity, Lab	NTU	0.29
6	12	2022	RG_FOUNGD	RG_FOUNGD	Uranium (U)-Dissolved	mg/L	0.0046
6	12	2022	RG_FOUNGD	RG_FOUNGD	Uranium (U)-Total	mg/L	0.00425
6	12	2022	RG_FOUNGD	RG_FOUNGD	Vanadium (V)-Dissolved	mg/L	<0.0005
6	12	2022	RG_FOUNGD	RG_FOUNGD	Vanadium (V)-Total	mg/L	<0.0005
6	12	2022	RG_FOUNGD	RG_FOUNGD	Zinc (Zn)-Dissolved	mg/L	0.0046
6	12	2022	RG_FOUNGD	RG_FOUNGD	Zinc (Zn)-Total	mg/L	0.0032
18	1	2022	FR_FRABEC1 (RG FODNGD)	FR_FRABEC1	Acidity (as CaCO3)	mg/L	<2
18	1	2022	FR_FRABEC1 (RG FODNGD)	FR_FRABEC1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	192
18	1	2022	FR_FRABEC1 (RG FODNGD)	FR_FRABEC1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
18	1	2022	FR_FRABEC1 (RG FODNGD)	FR_FRABEC1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	1	2022	FR_FRABEC1 (RG FODNGD)	FR_FRABEC1	Alkalinity, Total (as CaCO3)	mg/L	192
18	1	2022	FR_FRABEC1 (RG FODNGD)	FR_FRABEC1	Aluminum (Al)-Dissolved	mg/L	0.0021
18	1	2022	FR_FRABEC1 (RG FODNGD)	FR_FRABEC1	Aluminum (Al)-Total	mg/L	0.0063
18	1	2022	FR_FRABEC1 (RG FODNGD)	FR_FRABEC1	Ammonia, Total (as N)	mg/L	0.0102

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Dissolved	mg/L	0.00026
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Total	mg/L	0.00027
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Dissolved	mg/L	<0.0001
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Total	mg/L	0.00014
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Dissolved	mg/L	0.105
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Total	mg/L	0.0948
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Total	mg/L	<0.00002
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Total	mg/L	<0.00005
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Total	mg/L	0.01
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bromide (Br)	mg/L	<0.25
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Dissolved	mg/L	0.000101
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Total	mg/L	0.000104
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Dissolved	mg/L	158
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Total	mg/L	154
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chloride (Cl)	mg/L	3.23
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Dissolved	mg/L	0.00011
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Total	mg/L	<0.0001
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Total	mg/L	<0.0001
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Conductivity	uS/cm	1160
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Dissolved	mg/L	0.00182
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Total	mg/L	<0.0005
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Organic Carbon	mg/L	0.63
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Fluoride	mg/L	0.147
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Hardness - Dissolved (as CaCO3)	mg/L	674
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Dissolved	mg/L	<0.01
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Total	mg/L	<0.01
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Total	mg/L	<0.00005
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Dissolved	mg/L	0.0875
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Total	mg/L	0.0901
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Dissolved	mg/L	68
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Total	mg/L	68.3
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Dissolved	mg/L	0.00125
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Total	mg/L	0.00154
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Total	mg/L	<0.0000005
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Dissolved	mg/L	0.00146
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Total	mg/L	0.00148
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Dissolved	mg/L	0.00829
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Total	mg/L	0.00821
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrate (as N)	mg/L	36
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrite (as N)	mg/L	0.0131
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP	mV	356
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Orthophosphate	mg/L	<0.001
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Lab	pH	8.22
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Phosphorus (P)-Total	mg/L	0.0024
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Dissolved	mg/L	2.24
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Total	mg/L	2.12
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Dissolved	mg/L	0.0852
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Total	mg/L	0.0847
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Dissolved	mg/L	1.91
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Total	mg/L	1.98
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Dissolved	mg/L	<0.00001
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Total	mg/L	<0.00001
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Dissolved	mg/L	3.22
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Total	mg/L	3.16
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Dissolved	mg/L	0.22
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Total	mg/L	0.229
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphate	mg/L	380
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Dissolved	mg/L	<0.00001
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Total	mg/L	<0.00001
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Total	mg/L	<0.0001
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Total	mg/L	<0.0003
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Dissolved Solids	mg/L	890
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Kjeldahl Nitrogen	mg/L	0.471
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Organic Carbon	mg/L	0.7
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Suspended Solids	mg/L	2.5
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Turbidity, Lab	NTU	0.31
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Dissolved	mg/L	0.00442
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Total	mg/L	0.00458
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Dissolved	mg/L	<0.0005
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Total	mg/L	<0.0005
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Dissolved	mg/L	0.005
18	1	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Total	mg/L	0.0045
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Acidity (as CaCO3)	mg/L	3.6
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	197
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Total (as CaCO3)	mg/L	197
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Dissolved	mg/L	0.001
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Total	mg/L	0.0166
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Ammonia, Total (as N)	mg/L	0.047
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Dissolved	mg/L	0.00028
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Total	mg/L	0.00031
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Dissolved	mg/L	0.00012
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Total	mg/L	0.00012
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Dissolved	mg/L	0.0941
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Total	mg/L	0.102
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Total	mg/L	<0.00002
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Total	mg/L	<0.00005
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Dissolved	mg/L	0.011
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Total	mg/L	0.012
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bromide (Br)	mg/L	<0.25
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Dissolved	mg/L	0.0000955
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Total	mg/L	0.00011
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Dissolved	mg/L	145
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Total	mg/L	149
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chloride (Cl)	mg/L	1.16
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Dissolved	mg/L	<0.0001
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Total	mg/L	0.00018
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Dissolved	mg/L	0.00011
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Total	mg/L	0.00014
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Conductivity	uS/cm	1140
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Dissolved	mg/L	<0.0002
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Total	mg/L	<0.0005
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Organic Carbon	mg/L	0.76
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	mg/L	11.81
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Fluoride	mg/L	0.126

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Hardness - Dissolved (as CaCO3)	mg/L	627
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Dissolved	mg/L	<0.01
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Total	mg/L	0.022
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Dissolved	mg/L	<0.00005
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Total	mg/L	<0.00005
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Dissolved	mg/L	0.0808
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Total	mg/L	0.0828
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Dissolved	mg/L	64.3
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Total	mg/L	61.8
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Dissolved	mg/L	0.00136
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Total	mg/L	0.0021
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Total	mg/L	<0.000005
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Dissolved	mg/L	0.00152
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Total	mg/L	0.0015
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Dissolved	mg/L	0.00755
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Total	mg/L	0.00763
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrate (as N)	mg/L	32.6
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrite (as N)	mg/L	0.0272
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP	mV	467
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP, Field	mV	158.5
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Orthophosphate	mg/L	0.0015
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Field	pH	8.03
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Lab	pH	8.24
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Phosphorus (P)-Total	mg/L	0.0052
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Dissolved	mg/L	2.18
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Total	mg/L	2.12
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Dissolved	mg/L	0.0812
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Total	mg/L	0.0839
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Dissolved	mg/L	1.76
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Total	mg/L	1.74
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Dissolved	mg/L	<0.00001
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Total	mg/L	<0.00001
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Dissolved	mg/L	2.84
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Total	mg/L	2.88
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Dissolved	mg/L	0.222
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Total	mg/L	0.225
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphate	mg/L	368
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Temperature, Field	deg c	1.8
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Dissolved	mg/L	0.00001
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Total	mg/L	0.000012
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Dissolved	mg/L	<0.0001
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Total	mg/L	<0.0001
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Total	mg/L	<0.0003
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Dissolved Solids	mg/L	830
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Kjeldahl Nitrogen	mg/L	<0.05
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Organic Carbon	mg/L	0.57
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Suspended Solids	mg/L	3.4
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Turbidity, Lab	NTU	1.03
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Dissolved	mg/L	0.00423
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Total	mg/L	0.0044
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Dissolved	mg/L	<0.0005
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Total	mg/L	<0.0005
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Dissolved	mg/L	0.0042
15	2	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Total	mg/L	0.0046
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Acidity (as CaCO3)	mg/L	2.1
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	195
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Total (as CaCO3)	mg/L	195
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Dissolved	mg/L	0.0012
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Total	mg/L	0.0061
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Ammonia, Total (as N)	mg/L	0.0083
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Dissolved	mg/L	0.00026
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Total	mg/L	0.00028
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Dissolved	mg/L	<0.0001
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Total	mg/L	0.00015
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Dissolved	mg/L	0.0978
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Total	mg/L	0.0964
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Total	mg/L	<0.00002
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Total	mg/L	<0.00005
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Dissolved	mg/L	0.011
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Total	mg/L	0.011
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bromide (Br)	mg/L	<0.25
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Dissolved	mg/L	0.000106
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Total	mg/L	0.0000932
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Dissolved	mg/L	162
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Total	mg/L	174
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chloride (Cl)	mg/L	1.53
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Dissolved	mg/L	<0.0001
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Total	mg/L	0.00011
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Total	mg/L	0.0001
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Conductivity	uS/cm	1180
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Dissolved	mg/L	0.00022
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Total	mg/L	<0.0005
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Organic Carbon	mg/L	0.81
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	%	81.5
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	mg/L	11.56
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Hardness - Dissolved (as CaCO3)	mg/L	689
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Dissolved	mg/L	<0.01
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Total	mg/L	0.013
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Dissolved	mg/L	<0.00005
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Total	mg/L	<0.00005
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Dissolved	mg/L	0.0998
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Total	mg/L	0.0999
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Dissolved	mg/L	69.1
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Total	mg/L	76.4
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Dissolved	mg/L	0.00086
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Total	mg/L	0.00116
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Total	mg/L	<0.000005
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Dissolved	mg/L	0.00138
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Total	mg/L	0.00143
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Dissolved	mg/L	0.00786
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Total	mg/L	0.00826
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrate (as N)	mg/L	34.5
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrite (as N)	mg/L	0.0115

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP	mV	491
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP, Field	mV	292.9
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Orthophosphate	mg/L	<0.001
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Field	pH	7.65
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Lab	pH	8.06
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Phosphorus (P)-Total	mg/L	0.0022
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Dissolved	mg/L	2.3
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Total	mg/L	2.33
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Dissolved	mg/L	0.0891
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Total	mg/L	0.0945
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Dissolved	mg/L	1.8
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Total	mg/L	1.98
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Dissolved	mg/L	<0.00001
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Total	mg/L	<0.00001
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Dissolved	mg/L	3.12
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Total	mg/L	3.2
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Dissolved	mg/L	0.223
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Total	mg/L	0.238
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphate	mg/L	403
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Temperature, Field	deg c	1
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Total	mg/L	0.00001
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Dissolved	mg/L	0.00127
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Total	mg/L	<0.0001
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Total	mg/L	<0.0003
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Dissolved Solids	mg/L	947
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Kjeldahl Nitrogen	mg/L	0.339
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Organic Carbon	mg/L	0.8
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Suspended Solids	mg/L	3.1
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Turbidity, Lab	NTU	0.37
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Dissolved	mg/L	0.00434
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Total	mg/L	0.00471
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Dissolved	mg/L	<0.0005
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Total	mg/L	<0.0005
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Dissolved	mg/L	0.0047
16	3	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Total	mg/L	0.0099
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Acidity (as CaCO3)	mg/L	<2
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	194
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Total (as CaCO3)	mg/L	194
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Dissolved	mg/L	0.0032
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Total	mg/L	0.0109
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Ammonia, Total (as N)	mg/L	0.0316
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Dissolved	mg/L	0.00046
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Total	mg/L	0.00052
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Dissolved	mg/L	0.00012
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Total	mg/L	0.00015
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Dissolved	mg/L	0.0883
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Total	mg/L	0.0918
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Total	mg/L	<0.00002
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Total	mg/L	<0.00005
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Dissolved	mg/L	0.012
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Total	mg/L	0.013
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bromide (Br)	mg/L	<0.25
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Dissolved	mg/L	0.000245
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Total	mg/L	0.000238
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Dissolved	mg/L	155
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Total	mg/L	167
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chloride (Cl)	mg/L	3.74
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Dissolved	mg/L	<0.0001
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Total	mg/L	0.00014
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Dissolved	mg/L	0.00041
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Total	mg/L	0.00042
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Conductivity	uS/cm	1200
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Dissolved	mg/L	0.00034
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Total	mg/L	0.00051
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Organic Carbon	mg/L	1.29
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	%	83.5
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	mg/L	11.44
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Fluoride	mg/L	0.157
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Hardness - Dissolved (as CaCO3)	mg/L	697
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Dissolved	mg/L	<0.01
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Total	mg/L	0.013
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Dissolved	mg/L	<0.00005
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Total	mg/L	<0.00005
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Dissolved	mg/L	0.0924
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Total	mg/L	0.088
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Dissolved	mg/L	75.2
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Total	mg/L	72.6
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Dissolved	mg/L	0.00345
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Total	mg/L	0.00386
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Dissolved	mg/L	<0.000005
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Total	mg/L	<0.000005
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Dissolved	mg/L	0.00233
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Total	mg/L	0.00257
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Dissolved	mg/L	0.0159
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Total	mg/L	0.0151
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrate (as N)	mg/L	32.4
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrite (as N)	mg/L	0.0258
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP	mV	346
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP, Field	mV	213.9
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Orthophosphate	mg/L	<0.001
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Field	pH	7.79
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Lab	pH	8.16
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Phosphorus (P)-Total	mg/L	0.0042
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Dissolved	mg/L	2.7
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Total	mg/L	2.56
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Dissolved	mg/L	0.1
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Total	mg/L	0.109
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Dissolved	mg/L	1.87
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Total	mg/L	1.84
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Dissolved	mg/L	<0.00001
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Total	mg/L	<0.00001
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Dissolved	mg/L	3.02
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Total	mg/L	2.87
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Dissolved	mg/L	0.238
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Total	mg/L	0.248

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphate	mg/L	408
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Temperature, Field	deg c	2.2
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Dissolved	mg/L	0.000013
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Total	mg/L	0.000017
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Dissolved	mg/L	<0.0001
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Total	mg/L	<0.0001
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Total	mg/L	<0.0003
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Dissolved Solids	mg/L	934
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Kjeldahl Nitrogen	mg/L	<0.05
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Organic Carbon	mg/L	1.34
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Suspended Solids	mg/L	1.6
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Turbidity, Lab	NTU	0.46
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Dissolved	mg/L	0.00522
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Total	mg/L	0.00506
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Dissolved	mg/L	<0.0005
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Total	mg/L	<0.0005
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Dissolved	mg/L	0.0135
14	4	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Total	mg/L	0.0114
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Acidity (as CaCO3)	mg/L	<2
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	170
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Total (as CaCO3)	mg/L	170
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Dissolved	mg/L	0.0037
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Total	mg/L	0.0275
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Ammonia, Total (as N)	mg/L	<0.005
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Dissolved	mg/L	0.00028
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Total	mg/L	0.00028
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Dissolved	mg/L	0.00011
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Total	mg/L	0.00015
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Dissolved	mg/L	0.0501
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Total	mg/L	0.0516
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Dissolved	mg/L	<0.00002
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Total	mg/L	<0.00002
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Total	mg/L	<0.00005
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Dissolved	mg/L	<0.01
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Total	mg/L	0.01
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bromide (Br)	mg/L	<0.05
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Dissolved	mg/L	0.000184
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Total	mg/L	0.000222
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Dissolved	mg/L	114
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Total	mg/L	100
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chloride (Cl)	mg/L	0.49
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Dissolved	mg/L	<0.0001
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Total	mg/L	0.00015
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Dissolved	mg/L	0.00024
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Total	mg/L	0.00028
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Conductivity	uS/cm	833
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Dissolved	mg/L	0.0004
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Total	mg/L	0.00055
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Organic Carbon	mg/L	1.87
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	mg/L	10.57
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Fluoride	mg/L	0.13
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Hardness - Dissolved (as CaCO3)	mg/L	467
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Dissolved	mg/L	<0.01
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Total	mg/L	0.026
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Dissolved	mg/L	<0.00005
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Total	mg/L	<0.00005
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Dissolved	mg/L	0.0434
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Total	mg/L	0.0428
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Dissolved	mg/L	44.3
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Total	mg/L	46.4
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Dissolved	mg/L	0.00418
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Total	mg/L	0.00564
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Dissolved	mg/L	<0.000005
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Total	mg/L	<0.000005
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Dissolved	mg/L	0.00141
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Total	mg/L	0.00145
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Dissolved	mg/L	0.00947
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Total	mg/L	0.0107
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrate (as N)	mg/L	19.8
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrite (as N)	mg/L	0.0071
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP	mV	387
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP, Field	mV	137.5
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Orthophosphate	mg/L	<0.001
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Field	pH	8.48
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Lab	pH	8.3
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Phosphorus (P)-Total	mg/L	0.0056
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Dissolved	mg/L	1.69
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Total	mg/L	1.88
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Dissolved	mg/L	0.0715
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Total	mg/L	0.0753
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Dissolved	mg/L	1.6
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Total	mg/L	1.81
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Dissolved	mg/L	<0.00001
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Total	mg/L	<0.00001
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Dissolved	mg/L	1.5
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Total	mg/L	1.74
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Dissolved	mg/L	0.139
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Total	mg/L	0.13
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphate	mg/L	230
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Temperature, Field	deg c	6.1
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Dissolved	mg/L	0.00001
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Total	mg/L	0.000014
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Dissolved	mg/L	<0.0001
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Total	mg/L	<0.0001
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Dissolved	mg/L	<0.0003
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Total	mg/L	0.00051
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Dissolved Solids	mg/L	696
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Kjeldahl Nitrogen	mg/L	<0.05
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Organic Carbon	mg/L	1.9
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Suspended Solids	mg/L	3.9
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Turbidity, Lab	NTU	1.08
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Dissolved	mg/L	0.00293
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Total	mg/L	0.00295
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Dissolved	mg/L	<0.0005
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Total	mg/L	<0.0005
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Dissolved	mg/L	0.0079
11	5	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Total	mg/L	0.01

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Acidity (as CaCO3)	mg/L	<2
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	119
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Bicarbonate (as HCO3)	mg/L	145
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Carbonate (as CO3)	mg/L	<1
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Hydroxide (as OH)	mg/L	<1
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Total (as CaCO3)	mg/L	119
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Dissolved	mg/L	0.0032
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Total	mg/L	0.0807
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Ammonia, Total (as N)	mg/L	0.008
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Anion Sum	meq/L	3.58
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Total	mg/L	<0.0001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Total	mg/L	0.00017
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Dissolved	mg/L	0.0283
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Total	mg/L	0.0313
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Total	mg/L	<0.00002
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Total	mg/L	<0.00005
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Dissolved	mg/L	<0.01
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Total	mg/L	<0.01
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bromide (Br)	mg/L	<0.05
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Dissolved	mg/L	0.0000236
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Total	mg/L	0.0000703
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Dissolved	mg/L	40.5
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Total	mg/L	42.2
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cation - Anion Balance	%	90.5
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cation Sum	meq/L	3.24
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chloride (Cl)	mg/L	0.14
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Dissolved	mg/L	0.00012
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Total	mg/L	0.00026
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Total	mg/L	0.00016
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Conductivity	uS/cm	303
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Dissolved	mg/L	0.0002
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Total	mg/L	<0.0005
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Organic Carbon	mg/L	1.67
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	%	80.4
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	mg/L	10.17
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	DMSeO - Dimethylselenoxide	mg/L	<0.00001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Fluoride	mg/L	0.141
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Hardness - Dissolved (as CaCO3)	mg/L	160
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ion balance (APHA)	%	4.98
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Dissolved	mg/L	<0.01
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Total	mg/L	0.187
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Dissolved	mg/L	<0.00005
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Total	mg/L	0.000151
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Dissolved	mg/L	0.0106
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Total	mg/L	0.0103
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Dissolved	mg/L	14.3
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Total	mg/L	14.7
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Dissolved	mg/L	0.00053
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Total	mg/L	0.0326
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Total	mg/L	<0.000005
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Dissolved	mg/L	0.000608
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Total	mg/L	0.00063
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Dissolved	mg/L	0.00129
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Total	mg/L	0.0029
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrate (as N)	mg/L	2.65
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrite (as N)	mg/L	<0.001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP	mV	336
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Orthophosphate	mg/L	<0.001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Field	pH	8.04
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Lab	pH	8.1
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Phosphorus (P)-Total	mg/L	0.0205
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Dissolved	mg/L	0.546
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Total	mg/L	0.582
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Se(IV) - Selenite	mg/L	0.000052
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Se(VI) - Selenate	mg/L	0.00932
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	SeCN - Selenocyanate	mg/L	<0.00001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Dissolved	mg/L	0.00966
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Total	mg/L	0.010133333
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium Unknown	mg/L	<0.00001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenosulphate	mg/L	<0.00001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	SeMe - Selenomethionine	mg/L	<0.00001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Dissolved	mg/L	1.48
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Total	mg/L	1.64
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Dissolved	mg/L	<0.00001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Total	mg/L	<0.00001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Dissolved	mg/L	0.687
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Total	mg/L	0.678
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Dissolved	mg/L	0.0724
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Total	mg/L	0.0775
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphate	mg/L	48.2
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphur (S)-Dissolved	mg/L	16.3
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphur (S)-Total	mg/L	16.8
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Temperature, Field	deg c	4.2
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Total	mg/L	<0.00001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Total	mg/L	<0.0001
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Total	mg/L	0.00101
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Dissolved Solids	mg/L	190
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Kjeldahl Nitrogen	mg/L	<0.5
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Organic Carbon	mg/L	1.63
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Suspended Solids	mg/L	11.7
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Turbidity, Lab	NTU	4.32
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Dissolved	mg/L	0.000767
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Total	mg/L	0.00081
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Dissolved	mg/L	<0.0005
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Total	mg/L	0.00057
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Dissolved	mg/L	0.0011
13	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Total	mg/L	0.0032
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Acidity (as CaCO3)	mg/L	<2

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	126
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Total (as CaCO3)	mg/L	126
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Dissolved	mg/L	0.0031
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Total	mg/L	0.0295
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Ammonia, Total (as N)	mg/L	<0.005
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Dissolved	mg/L	0.0001
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Total	mg/L	0.00013
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Dissolved	mg/L	0.00011
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Total	mg/L	0.00013
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Dissolved	mg/L	0.0319
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Total	mg/L	0.0287
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Dissolved	mg/L	<0.00002
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Total	mg/L	<0.00002
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Total	mg/L	<0.00005
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Dissolved	mg/L	<0.01
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Total	mg/L	<0.01
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bromide (Br)	mg/L	<0.05
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Dissolved	mg/L	0.0000441
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Total	mg/L	0.0000628
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Dissolved	mg/L	51.4
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Total	mg/L	46.4
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chloride (Cl)	mg/L	0.16
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Total	mg/L	0.00014
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Total	mg/L	<0.0001
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Conductivity	uS/cm	381
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Dissolved	mg/L	0.00022
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Total	mg/L	0.00072
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Organic Carbon	mg/L	1.14
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	mg/L	10.44
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Fluoride	mg/L	0.127
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Hardness - Dissolved (as CaCO3)	mg/L	204
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Dissolved	mg/L	<0.01
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Total	mg/L	0.039
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Dissolved	mg/L	<0.00005
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Total	mg/L	0.000068
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Dissolved	mg/L	0.0174
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Total	mg/L	0.0126
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Dissolved	mg/L	18.4
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Total	mg/L	17.2
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Dissolved	mg/L	0.00094
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Total	mg/L	0.0038
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Dissolved	mg/L	<0.000005
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Total	mg/L	0.0000112
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Dissolved	mg/L	0.000855
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Total	mg/L	0.000759
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Dissolved	mg/L	0.00241
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Total	mg/L	0.00258
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrate (as N)	mg/L	4.03
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrite (as N)	mg/L	0.0025
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP	mV	393
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP, Field	mV	197.4
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Orthophosphate	mg/L	0.0017
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Field	pH	8.42
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Lab	pH	8.22
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Phosphorus (P)-Total	mg/L	0.0123
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Dissolved	mg/L	0.813
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Total	mg/L	0.677
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Dissolved	mg/L	0.0168
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Total	mg/L	0.016
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Dissolved	mg/L	1.63
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Total	mg/L	1.49
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Dissolved	mg/L	<0.00001
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Total	mg/L	<0.00001
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Dissolved	mg/L	0.826
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Total	mg/L	0.752
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Dissolved	mg/L	0.0816
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Total	mg/L	0.0785
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphate	mg/L	61.1
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Temperature, Field	deg c	7
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Dissolved	mg/L	<0.00001
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Total	mg/L	<0.00001
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Total	mg/L	<0.0001
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Dissolved	mg/L	<0.0003
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Total	mg/L	0.00048
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Dissolved Solids	mg/L	219
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Kjeldahl Nitrogen	mg/L	0.299
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Organic Carbon	mg/L	1.36
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Suspended Solids	mg/L	7.6
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Turbidity, Lab	NTU	2.34
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Dissolved	mg/L	0.00106
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Total	mg/L	0.00109
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Dissolved	mg/L	<0.0005
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Total	mg/L	<0.0005
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Dissolved	mg/L	0.0022
28	6	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Total	mg/L	0.0034
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Acidity (as CaCO3)	mg/L	<2
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	149
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Total (as CaCO3)	mg/L	149
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Dissolved	mg/L	0.0016
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Total	mg/L	0.0062
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Ammonia, Total (as N)	mg/L	0.0076
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Dissolved	mg/L	0.00015
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Total	mg/L	0.00016
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Dissolved	mg/L	<0.0001
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Total	mg/L	<0.0001
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Dissolved	mg/L	0.0418
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Total	mg/L	0.0444
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Dissolved	mg/L	<0.00002
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Total	mg/L	<0.00002
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Total	mg/L	<0.00005
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Dissolved	mg/L	<0.01
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Total	mg/L	<0.01

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bromide (Br)	mg/L	<0.05
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Dissolved	mg/L	0.0000838
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Total	mg/L	0.0000895
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Dissolved	mg/L	76.2
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Total	mg/L	76.8
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chloride (Cl)	mg/L	0.28
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Dissolved	mg/L	<0.0001
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Total	mg/L	<0.0001
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Dissolved	mg/L	<0.0001
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Total	mg/L	<0.0001
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Conductivity	uS/cm	552
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Dissolved	mg/L	<0.0002
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Total	mg/L	<0.0005
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Organic Carbon	mg/L	<0.5
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	%	88.5
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	mg/L	9.78
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Fluoride	mg/L	0.203
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Hardness - Dissolved (as CaCO3)	mg/L	316
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Dissolved	mg/L	<0.01
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Total	mg/L	<0.01
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Dissolved	mg/L	<0.00005
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Total	mg/L	<0.00005
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Dissolved	mg/L	0.0342
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Total	mg/L	0.0372
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Dissolved	mg/L	30.6
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Total	mg/L	31.9
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Dissolved	mg/L	0.00078
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Total	mg/L	0.00131
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Dissolved	mg/L	<0.000005
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Total	mg/L	0.0000066
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Dissolved	mg/L	0.00102
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Total	mg/L	0.00102
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Dissolved	mg/L	0.00471
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Total	mg/L	0.0051
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrate (as N)	mg/L	9.81
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrite (as N)	mg/L	0.0083
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP	mV	314
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP, Field	mV	209.9
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Orthophosphate	mg/L	<0.001
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Field	pH	8.01
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Lab	pH	8.14
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Phosphorus (P)-Total	mg/L	0.0032
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Dissolved	mg/L	1.24
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Total	mg/L	1.22
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Dissolved	mg/L	0.04
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Total	mg/L	0.0425
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Dissolved	mg/L	1.55
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Total	mg/L	1.64
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Dissolved	mg/L	<0.00001
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Total	mg/L	<0.00001
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Dissolved	mg/L	1.46
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Total	mg/L	1.53
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Dissolved	mg/L	0.108
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Total	mg/L	0.115
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphate	mg/L	128
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Temperature, Field	deg c	10.9
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Dissolved	mg/L	<0.00001
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Total	mg/L	<0.00001
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Dissolved	mg/L	<0.0001
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Total	mg/L	<0.0001
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Dissolved	mg/L	<0.0003
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Total	mg/L	<0.0003
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Dissolved Solids	mg/L	462
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Kjeldahl Nitrogen	mg/L	0.404
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Organic Carbon	mg/L	0.56
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Suspended Solids	mg/L	3.6
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Turbidity, Lab	NTU	0.53
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Dissolved	mg/L	0.00192
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Total	mg/L	0.00213
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Dissolved	mg/L	<0.0005
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Total	mg/L	<0.0005
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Dissolved	mg/L	0.0042
25	7	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Total	mg/L	0.0044
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Acidity (as CaCO3)	mg/L	<2
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	187
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Total (as CaCO3)	mg/L	187
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Dissolved	mg/L	<0.001
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Total	mg/L	<0.003
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Ammonia, Total (as N)	mg/L	0.0086
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Dissolved	mg/L	0.00024
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Total	mg/L	0.00025
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Dissolved	mg/L	<0.0001
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Total	mg/L	0.00013
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Dissolved	mg/L	0.0805
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Total	mg/L	0.0747
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Dissolved	mg/L	<0.00002
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Total	mg/L	<0.00002
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Total	mg/L	<0.00005
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Dissolved	mg/L	0.012
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Total	mg/L	0.012
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bromide (Br)	mg/L	<0.05
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Dissolved	mg/L	0.00011
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Total	mg/L	0.000109
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Dissolved	mg/L	110
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Total	mg/L	129
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chloride (Cl)	mg/L	0.59
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Dissolved	mg/L	<0.0001
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Total	mg/L	0.00013
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Dissolved	mg/L	<0.0001
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Total	mg/L	<0.0001
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Conductivity	uS/cm	875
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Dissolved	mg/L	<0.0002
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Total	mg/L	<0.0005
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Organic Carbon	mg/L	1.05
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	%	84.9
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	mg/L	8.74
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Fluoride	mg/L	0.165
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Hardness - Dissolved (as CaCO3)	mg/L	487

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Dissolved	mg/L	<0.01
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Total	mg/L	<0.01
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Dissolved	mg/L	<0.00005
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Total	mg/L	<0.00005
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Dissolved	mg/L	0.0638
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Total	mg/L	0.0655
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Dissolved	mg/L	51.6
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Total	mg/L	55.5
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Dissolved	mg/L	0.00064
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Total	mg/L	0.00101
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Dissolved	mg/L	<0.000005
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Total	mg/L	0.00000143
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Dissolved	mg/L	0.00125
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Total	mg/L	0.00128
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Dissolved	mg/L	0.00834
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Total	mg/L	0.00859
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrate (as N)	mg/L	20.6
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrite (as N)	mg/L	0.0128
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP	mV	248
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP, Field	mV	222.9
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Orthophosphate	mg/L	<0.001
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Field	pH	8.02
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Lab	pH	8.15
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Phosphorus (P)-Total	mg/L	0.0026
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Dissolved	mg/L	1.93
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Total	mg/L	1.96
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Dissolved	mg/L	0.0798
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Total	mg/L	0.0682
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Dissolved	mg/L	1.94
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Total	mg/L	2.13
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Dissolved	mg/L	<0.00001
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Total	mg/L	<0.00001
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Dissolved	mg/L	2.58
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Total	mg/L	2.62
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Dissolved	mg/L	0.166
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Total	mg/L	0.17
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphate	mg/L	274
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Temperature, Field	deg c	13.9
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Dissolved	mg/L	<0.00001
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Total	mg/L	<0.00001
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Dissolved	mg/L	<0.0001
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Total	mg/L	<0.0001
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Dissolved	mg/L	<0.0003
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Total	mg/L	<0.0003
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Dissolved Solids	mg/L	705
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Kjeldahl Nitrogen	mg/L	0.436
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Organic Carbon	mg/L	0.93
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Suspended Solids	mg/L	1.1
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Turbidity, Lab	NTU	0.22
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Dissolved	mg/L	0.0034
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Total	mg/L	0.00352
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Dissolved	mg/L	<0.0005
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Total	mg/L	<0.0005
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Dissolved	mg/L	0.0047
22	8	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Total	mg/L	0.0049
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Acidity (as CaCO3)	mg/L	<2
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	178
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Carbonate (as CaCO3)	mg/L	7.8
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Total (as CaCO3)	mg/L	186
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Dissolved	mg/L	<0.001
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Total	mg/L	0.0076
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Ammonia, Total (as N)	mg/L	<0.005
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Dissolved	mg/L	0.00023
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Total	mg/L	0.00025
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Total	mg/L	0.00015
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Dissolved	mg/L	0.0726
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Total	mg/L	0.0678
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Total	mg/L	<0.00002
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Total	mg/L	<0.00005
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Dissolved	mg/L	0.012
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Total	mg/L	0.012
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bromide (Br)	mg/L	<0.25
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Dissolved	mg/L	0.000082
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Total	mg/L	0.0000766
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Dissolved	mg/L	129
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Total	mg/L	124
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chloride (Cl)	mg/L	2.29
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Total	mg/L	<0.0001
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Total	mg/L	<0.0001
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Conductivity	uS/cm	931
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Dissolved	mg/L	0.00021
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Total	mg/L	<0.0005
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Organic Carbon	mg/L	<0.5
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	mg/L	8.88
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Fluoride	mg/L	0.188
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Hardness - Dissolved (as CaCO3)	mg/L	546
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Dissolved	mg/L	<0.01
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Total	mg/L	<0.01
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Dissolved	mg/L	<0.00005
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Total	mg/L	<0.00005
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Dissolved	mg/L	0.0604
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Total	mg/L	0.0606
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Dissolved	mg/L	54.4
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Total	mg/L	54.9
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Dissolved	mg/L	0.00064
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Total	mg/L	0.00051
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Total	mg/L	<0.000005
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Dissolved	mg/L	0.00136
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Total	mg/L	0.00133
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Dissolved	mg/L	0.00981
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Total	mg/L	0.01
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrate (as N)	mg/L	23.6
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrite (as N)	mg/L	0.0161
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP	mV	292

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP, Field	mV	146.5
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Orthophosphate	mg/L	<0.001
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Field	pH	8.07
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Lab	pH	8.31
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Phosphorus (P)-Total	mg/L	0.0031
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Dissolved	mg/L	1.78
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Total	mg/L	1.87
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Dissolved	mg/L	0.0901
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Total	mg/L	0.0758
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Dissolved	mg/L	1.83
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Total	mg/L	2.1
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Dissolved	mg/L	<0.00001
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Total	mg/L	<0.00001
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Dissolved	mg/L	2.19
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Total	mg/L	2.24
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Dissolved	mg/L	0.177
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Total	mg/L	0.166
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphate	mg/L	292
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Temperature, Field	deg c	12.5
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Total	mg/L	0.000013
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Total	mg/L	<0.0001
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Total	mg/L	<0.0003
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Dissolved Solids	mg/L	748
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Kjeldahl Nitrogen	mg/L	0.53
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Organic Carbon	mg/L	<0.5
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Suspended Solids	mg/L	2.7
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Turbidity, Field	NTU	0.7
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Turbidity, Lab	NTU	0.53
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Dissolved	mg/L	0.00313
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Total	mg/L	0.00332
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Dissolved	mg/L	<0.0005
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Total	mg/L	<0.0005
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Dissolved	mg/L	0.0043
6	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Total	mg/L	0.0042
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Acidity (as CaCO3)	mg/L	<2
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	189
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Bicarbonate (as HCO3)	mg/L	230
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Carbonate (as CO3)	mg/L	<1
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Hydroxide (as OH)	mg/L	<1
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Total (as CaCO3)	mg/L	189
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Dissolved	mg/L	0.0019
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Total	mg/L	0.028
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Ammonia, Total (as N)	mg/L	0.0069
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Anion Sum	meq/L	11.9
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Dissolved	mg/L	0.00023
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Total	mg/L	0.00022
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Dissolved	mg/L	<0.0001
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Total	mg/L	0.00016
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Dissolved	mg/L	0.0777
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Total	mg/L	0.0741
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Total	mg/L	<0.00002
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Total	mg/L	<0.00005
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Dissolved	mg/L	0.012
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Total	mg/L	0.013
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bromine (Br)	mg/L	<0.25
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Dissolved	mg/L	0.000109
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Total	mg/L	0.000133
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Dissolved	mg/L	124
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Total	mg/L	117
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cation - Anion Balance	%	92.4
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cation Sum	meq/L	11
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chloride (Cl)	mg/L	0.84
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Dissolved	mg/L	<0.0001
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Total	mg/L	0.00012
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Total	mg/L	<0.0001
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Conductivity	uS/cm	980
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Conductivity, Field	uS/cm	1037
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Dissolved	mg/L	0.00021
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Total	mg/L	<0.0005
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Organic Carbon	mg/L	0.74
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	%	85.1
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	mg/L	9.243333333
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	DMSeO - Dimethylselenoxide	mg/L	<0.00001
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Fluoride	mg/L	0.186
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Hardness - Dissolved (as CaCO3)	mg/L	541
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ion balance (APHA)	%	3.93
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Dissolved	mg/L	<0.01
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Total	mg/L	0.055
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Dissolved	mg/L	<0.00005
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Total	mg/L	0.000073
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Dissolved	mg/L	0.0617
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Total	mg/L	0.0641
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Dissolved	mg/L	56.3
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Total	mg/L	54.9
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Dissolved	mg/L	0.00091
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Total	mg/L	0.00472
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Total	mg/L	<0.000005
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	MeSe(IV) - Methylseleninic Acid	mg/L	0.000018
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Dissolved	mg/L	0.00136
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Total	mg/L	0.00125
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Dissolved	mg/L	0.0095
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Total	mg/L	0.00976
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrate (as N)	mg/L	25.3
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrite (as N)	mg/L	0.0131
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP	mV	290
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Orthophosphate	mg/L	0.0016
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Field	pH	8.136666667
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Lab	pH	8.19
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Phosphorus (P)-Total	mg/L	0.0042
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Dissolved	mg/L	1.87
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Total	mg/L	1.86

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Se(IV) - Selenite	mg/L	0.000332
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Se(VI) - Selenate	mg/L	0.0755
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	SeCN - Selenocyanate	mg/L	<0.00001
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Dissolved	mg/L	0.08095
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Total	mg/L	0.0728
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium Unknown	mg/L	<0.00001
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenosulphate	mg/L	<0.00001
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	SeMe - Selenomethionine	mg/L	<0.00001
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Dissolved	mg/L	1.91
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Total	mg/L	1.87
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Dissolved	mg/L	<0.00001
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Total	mg/L	<0.00001
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Dissolved	mg/L	2.2
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Total	mg/L	2.24
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Specific Conductivity	uS/cm	1426
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Dissolved	mg/L	0.179
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Total	mg/L	0.167
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphate	mg/L	303
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphur (S)-Dissolved	mg/L	106
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphur (S)-Total	mg/L	106
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Temperature, Field	deg c	11.06666667
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Dissolved	mg/L	0.00001
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Total	mg/L	0.00001
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Dissolved	mg/L	<0.0001
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Total	mg/L	<0.0001
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Total	mg/L	0.00051
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Dissolved Solids	mg/L	755
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Kjeldahl Nitrogen	mg/L	2.24
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Organic Carbon	mg/L	0.67
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Suspended Solids	mg/L	1.7
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Turbidity, Lab	NTU	0.29
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Dissolved	mg/L	0.00359
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Total	mg/L	0.00349
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Dissolved	mg/L	<0.0005
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Total	mg/L	0.00054
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Dissolved	mg/L	0.0065
15	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Total	mg/L	0.0083
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Acidity (as CaCO3)	mg/L	<2
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	193
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Total (as CaCO3)	mg/L	193
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Dissolved	mg/L	0.0015
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Total	mg/L	0.0151
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Ammonia, Total (as N)	mg/L	<0.005
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Dissolved	mg/L	0.00031
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Total	mg/L	0.00032
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Dissolved	mg/L	<0.0001
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Total	mg/L	0.00011
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Dissolved	mg/L	0.081
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Total	mg/L	0.084
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Dissolved	mg/L	<0.00002
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Total	mg/L	<0.00002
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Total	mg/L	<0.00005
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Dissolved	mg/L	0.018
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Total	mg/L	0.016
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bromide (Br)	mg/L	<0.25
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Dissolved	mg/L	0.000153
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Total	mg/L	0.000173
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Dissolved	mg/L	162
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Total	mg/L	160
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chloride (Cl)	mg/L	1.24
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Dissolved	mg/L	<0.0001
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Total	mg/L	0.00011
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Dissolved	mg/L	<0.0001
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Total	mg/L	<0.0001
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Conductivity	uS/cm	1190
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Dissolved	mg/L	<0.0002
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Total	mg/L	<0.0005
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Organic Carbon	mg/L	<0.5
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	%	79.8
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	mg/L	9.38
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Fluoride	mg/L	0.179
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Hardness - Dissolved (as CaCO3)	mg/L	701
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Dissolved	mg/L	<0.01
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Total	mg/L	0.017
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Dissolved	mg/L	<0.00005
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Total	mg/L	<0.00005
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Dissolved	mg/L	0.127
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Total	mg/L	0.13
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Dissolved	mg/L	72
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Total	mg/L	73.2
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Dissolved	mg/L	0.00044
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Total	mg/L	0.00161
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Dissolved	mg/L	<0.000005
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Total	mg/L	<0.000005
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Dissolved	mg/L	0.00159
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Total	mg/L	0.0015
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Dissolved	mg/L	0.0154
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Total	mg/L	0.0163
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrate (as N)	mg/L	34.6
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrite (as N)	mg/L	0.0145
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP	mV	276
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP, Field	mV	239.7
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Orthophosphate	mg/L	<0.001
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Field	pH	8.16
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Lab	pH	8.18
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Phosphorus (P)-Total	mg/L	0.0041
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Dissolved	mg/L	2.56
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Total	mg/L	2.68
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Dissolved	mg/L	0.1
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Total	mg/L	0.0874
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Dissolved	mg/L	1.84
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Total	mg/L	1.98
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Dissolved	mg/L	<0.00001
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Total	mg/L	<0.00001
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Dissolved	mg/L	4.27
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Total	mg/L	4.54
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Dissolved	mg/L	0.244

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Total	mg/L	0.244
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphate	mg/L	387
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Temperature, Field	deg c	8.3
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Dissolved	mg/L	0.000011
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Total	mg/L	0.000013
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Dissolved	mg/L	<0.0001
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Total	mg/L	<0.0001
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Dissolved	mg/L	<0.0003
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Total	mg/L	0.00034
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Dissolved Solids	mg/L	942
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Kjeldahl Nitrogen	mg/L	<0.05
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Organic Carbon	mg/L	<0.5
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Suspended Solids	mg/L	3.1
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Turbidity, Lab	NTU	0.69
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Dissolved	mg/L	0.00625
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Total	mg/L	0.00621
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Dissolved	mg/L	<0.0005
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Total	mg/L	<0.0005
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Dissolved	mg/L	0.0079
29	9	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Total	mg/L	0.0081
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Acidity (as CaCO3)	mg/L	<2
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	175
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Carbonate (as CaCO3)	mg/L	27.4
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Total (as CaCO3)	mg/L	203
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Dissolved	mg/L	<0.001
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Total	mg/L	0.0032
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Ammonia, Total (as N)	mg/L	<0.005
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Dissolved	mg/L	0.0002
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Total	mg/L	0.00019
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Dissolved	mg/L	<0.0001
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Total	mg/L	0.00012
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Dissolved	mg/L	0.106
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Total	mg/L	0.101
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Dissolved	mg/L	<0.00002
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Total	mg/L	<0.00002
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Total	mg/L	<0.00005
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Dissolved	mg/L	0.011
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Total	mg/L	<0.01
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bromide (Br)	mg/L	<0.25
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Dissolved	mg/L	0.0000771
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Total	mg/L	0.0000813
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Dissolved	mg/L	155
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Total	mg/L	162
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chloride (Cl)	mg/L	1.09
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Dissolved	mg/L	<0.0001
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Total	mg/L	0.00011
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Dissolved	mg/L	<0.0001
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Total	mg/L	<0.0001
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Conductivity	uS/cm	1130
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Dissolved	mg/L	<0.0002
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Total	mg/L	<0.0005
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Organic Carbon	mg/L	<0.5
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Fluoride	mg/L	0.169
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Hardness - Dissolved (as CaCO3)	mg/L	692
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Dissolved	mg/L	<0.01
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Total	mg/L	0.026
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Dissolved	mg/L	<0.00005
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Total	mg/L	<0.00005
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Dissolved	mg/L	0.0858
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Total	mg/L	0.0857
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Dissolved	mg/L	74
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Total	mg/L	70.3
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Dissolved	mg/L	0.0004
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Total	mg/L	0.00179
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Dissolved	mg/L	<0.000005
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Total	mg/L	<0.000005
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Dissolved	mg/L	0.00121
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Total	mg/L	0.00118
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Dissolved	mg/L	0.00655
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Total	mg/L	0.00673
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrate (as N)	mg/L	28
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrite (as N)	mg/L	0.0057
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP	mV	322
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Orthophosphate	mg/L	<0.001
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Lab	pH	8.37
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Phosphorus (P)-Total	mg/L	0.0023
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Dissolved	mg/L	1.98
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Total	mg/L	1.96
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Dissolved	mg/L	0.119
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Total	mg/L	0.0973
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Dissolved	mg/L	1.86
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Total	mg/L	1.74
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Dissolved	mg/L	<0.00001
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Total	mg/L	<0.00001
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Dissolved	mg/L	3.22
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Total	mg/L	3.16
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Dissolved	mg/L	0.23
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Total	mg/L	0.208
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphate	mg/L	380
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Dissolved	mg/L	<0.00001
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Total	mg/L	<0.00001
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Dissolved	mg/L	<0.0001
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Total	mg/L	<0.0001
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Dissolved	mg/L	<0.0003
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Total	mg/L	<0.0003
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Dissolved Solids	mg/L	816
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Kjeldahl Nitrogen	mg/L	<0.05
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Organic Carbon	mg/L	<0.5
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Suspended Solids	mg/L	1.4
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Turbidity, Lab	NTU	0.32
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Dissolved	mg/L	0.0043
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Total	mg/L	0.00435
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Dissolved	mg/L	<0.0005
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Total	mg/L	<0.0005
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Dissolved	mg/L	0.0041
23	11	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Total	mg/L	0.004
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Acidity (as CaCO3)	mg/L	<2
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	196.5
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Bicarbonate (as HCO3)	mg/L	220

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Carbonate (as CaCO3)	mg/L	4.4
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Carbonate (as CO3)	mg/L	4.7
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Hydroxide (as OH)	mg/L	<1
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Alkalinity, Total (as CaCO3)	mg/L	200.5
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Dissolved	mg/L	<0.001
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Aluminum (Al)-Total	mg/L	0.00655
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Ammonia, Total (as N)	mg/L	<0.005
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Anion Sum	meq/L	14.1
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Dissolved	mg/L	0.00021
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Antimony (Sb)-Total	mg/L	0.00021
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Dissolved	mg/L	<0.0001
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Arsenic (As)-Total	mg/L	0.00012
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Dissolved	mg/L	0.1125
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Barium (Ba)-Total	mg/L	0.1065
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Beryllium (Be)-Total	mg/L	<0.00002
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bismuth (Bi)-Total	mg/L	<0.00005
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Dissolved	mg/L	<0.01
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Boron (B)-Total	mg/L	<0.01
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Bromide (Br)	mg/L	<0.25
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Dissolved	mg/L	0.0000832
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cadmium (Cd)-Total	mg/L	0.00008745
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Dissolved	mg/L	163
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Calcium (Ca)-Total	mg/L	153.5
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cation - Anion Balance	%	101
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cation Sum	meq/L	14.3
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chloride (Cl)	mg/L	1.175
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Dissolved	mg/L	0.000155
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Chromium (Cr)-Total	mg/L	0.000165
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Cobalt (Co)-Total	mg/L	<0.0001
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Conductivity	uS/cm	1150
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Conductivity, Field	uS/cm	704
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Dissolved	mg/L	<0.0002
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Copper (Cu)-Total	mg/L	<0.0005
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Organic Carbon	mg/L	<0.5
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	%	88.7
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Dissolved Oxygen, Field	mg/L	11.925
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	DMSeO - Dimethylselenoxide	mg/L	<0.00001
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Fluoride	mg/L	0.168
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Hardness - Dissolved (as CaCO3)	mg/L	717
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ion balance (APHA)	%	0.7
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Dissolved	mg/L	<0.01
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Iron (Fe)-Total	mg/L	0.0125
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Dissolved	mg/L	<0.00005
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lead (Pb)-Total	mg/L	<0.00005
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Dissolved	mg/L	0.0903
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Lithium (Li)-Total	mg/L	0.09155
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Dissolved	mg/L	75.2
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Magnesium (Mg)-Total	mg/L	75.15
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Dissolved	mg/L	0.00042
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Manganese (Mn)-Total	mg/L	0.0013
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Mercury (Hg)-Total	mg/L	<0.000005
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Dissolved	mg/L	0.001145
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Molybdenum (Mo)-Total	mg/L	0.001115
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Dissolved	mg/L	0.006785
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nickel (Ni)-Total	mg/L	0.00695
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrate (as N)	mg/L	30.1
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Nitrite (as N)	mg/L	0.00655
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	ORP	mV	431
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Orthophosphate	mg/L	0.00145
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Field	pH	8.02
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	pH, Lab	pH	8.24
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Phosphorus (P)-Total	mg/L	0.0042
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Dissolved	mg/L	2.085
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Potassium (K)-Total	mg/L	2.015
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Se(IV) - Selenite	mg/L	0.000204
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Se(VI) - Selenate	mg/L	0.0826
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	SeCN - Selenocyanate	mg/L	<0.00001
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Dissolved	mg/L	0.102533333
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium (Se)-Total	mg/L	0.08855
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenium Unknown	mg/L	<0.00001
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Selenosulphate	mg/L	<0.00001
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	SeMe - Selenomethionine	mg/L	<0.00001
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Dissolved	mg/L	1.92
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silicon (Si)-Total	mg/L	1.905
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Dissolved	mg/L	<0.00001
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Silver (Ag)-Total	mg/L	<0.00001
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Dissolved	mg/L	3.485
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sodium (Na)-Total	mg/L	3.595
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Specific Conductivity	uS/cm	1270
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Dissolved	mg/L	0.2225
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Strontium (Sr)-Total	mg/L	0.208
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphate	mg/L	399
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphur (S)-Dissolved	mg/L	151
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Sulphur (S)-Total	mg/L	141
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Temperature, Field	deg c	1.3
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Thallium (Tl)-Total	mg/L	<0.00001
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Dissolved	mg/L	<0.0001
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Tin (Sn)-Total	mg/L	<0.0001
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Titanium (Ti)-Total	mg/L	<0.0003
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Dissolved Solids	mg/L	868.5
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Kjeldahl Nitrogen	mg/L	0.905
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Organic Carbon	mg/L	0.575
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Total Suspended Solids	mg/L	7.35
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Turbidity, Lab	NTU	0.895
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Dissolved	mg/L	0.00462
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Uranium (U)-Total	mg/L	0.004575
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Dissolved	mg/L	<0.0005
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Vanadium (V)-Total	mg/L	<0.0005
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Dissolved	mg/L	0.00475
6	12	2022	FR_FRABEC1 (RG_FODNGD)	FR_FRABEC1	Zinc (Zn)-Total	mg/L	0.0042
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Acidity (as CaCO3)	mg/L	3.75
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Bicarbonate (as CaCO3)	mg/L	206

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Total (as CaCO3)	mg/L	206
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Dissolved	mg/L	0.0283
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Total	mg/L	12.562
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Ammonia, Total (as N)	mg/L	0.05085
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Dissolved	mg/L	0.00056
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Total	mg/L	0.001415
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Dissolved	mg/L	0.000175
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Total	mg/L	0.012595
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Dissolved	mg/L	0.0875
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Total	mg/L	1.2965
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Total	mg/L	0.00166
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Total	mg/L	0.000394
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Dissolved	mg/L	<0.01
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Total	mg/L	0.031
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bromide (Br)	mg/L	<0.25
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Dissolved	mg/L	0.000066
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Total	mg/L	0.0046635
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Dissolved	mg/L	123
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Total	mg/L	193.5
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chloride (Cl)	mg/L	2.19
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Dissolved	mg/L	0.00014
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Total	mg/L	0.02706
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Dissolved	mg/L	0.000545
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Total	mg/L	0.019885
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity	uS/cm	1160
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity, Field	uS/cm	1795
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Dissolved	mg/L	0.002905
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Total	mg/L	0.07025
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Organic Carbon	mg/L	1.315
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	%	81.5
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	mg/L	10.66
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Fluoride	mg/L	0.1615
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Hardness - Dissolved (as CaCO3)	mg/L	525
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Dissolved	mg/L	0.032
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Total	mg/L	27.221
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Dissolved	mg/L	0.0000685
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Total	mg/L	0.0371885
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Dissolved	mg/L	0.0644
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Total	mg/L	0.09525
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Dissolved	mg/L	52.85
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Total	mg/L	87.65
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Dissolved	mg/L	0.00842
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Total	mg/L	0.452355
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Total	mg/L	0.0000101
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Dissolved	mg/L	0.002715
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Total	mg/L	0.01378
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Dissolved	mg/L	0.00625
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Total	mg/L	0.0842
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrate (as N)	mg/L	30.65
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrite (as N)	mg/L	0.0268
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP	mV	489
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP, Field	mV	152.7
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Orthophosphate	mg/L	0.0014
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Field	pH	8.13
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Lab	pH	8.1
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Phosphorus (P)-Total	mg/L	0.59635
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Dissolved	mg/L	2.465
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Total	mg/L	7.315
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Dissolved	mg/L	0.06695
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Total	mg/L	0.08915
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Dissolved	mg/L	1.45
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Total	mg/L	16.315
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Dissolved	mg/L	<0.00001
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Total	mg/L	0.000985
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Dissolved	mg/L	2.575
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Total	mg/L	3.67
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Dissolved	mg/L	0.1785
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Total	mg/L	0.3655
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphate	mg/L	389
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Temperature, Field	deg c	3.9
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Dissolved	mg/L	0.0000165
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Total	mg/L	0.000626
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Dissolved	mg/L	<0.0001
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Total	mg/L	0.000175
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Total	mg/L	0.0218
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Dissolved Solids	mg/L	801
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Kjeldahl Nitrogen	mg/L	0.3955
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Organic Carbon	mg/L	237.91
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Suspended Solids	mg/L	3911.35
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Turbidity, Lab	NTU	4.585
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Dissolved	mg/L	0.003695
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Total	mg/L	0.007555
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Dissolved	mg/L	<0.0005
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Total	mg/L	0.070325
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Dissolved	mg/L	0.00385
16	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Total	mg/L	0.30455
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Acidity (as CaCO3)	mg/L	2.65
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Bicarbonate (as CaCO3)	mg/L	198.3333333
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Total (as CaCO3)	mg/L	198.3333333
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Dissolved	mg/L	0.002275
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Total	mg/L	1.8906
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Ammonia, Total (as N)	mg/L	0.046025
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Dissolved	mg/L	0.00038
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Total	mg/L	0.000796667
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Dissolved	mg/L	0.00012
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Total	mg/L	0.002185
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Dissolved	mg/L	0.100675
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Total	mg/L	0.28675
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Total	mg/L	0.000655
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Total	mg/L	0.0001325
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Dissolved	mg/L	0.012

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Total	mg/L	0.017333333
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bromide (Br)	mg/L	<0.25
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Dissolved	mg/L	0.000086775
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Total	mg/L	0.00087975
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Dissolved	mg/L	170.75
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Total	mg/L	185.5
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chloride (Cl)	mg/L	2.026666667
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Dissolved	mg/L	0.000116667
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Total	mg/L	0.0052125
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Dissolved	mg/L	0.000385
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Total	mg/L	0.0037525
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity	uS/cm	1225
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity, Field	uS/cm	1287.5
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Dissolved	mg/L	0.000466667
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Total	mg/L	0.014353333
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Organic Carbon	mg/L	1.1025
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	%	82.8
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	mg/L	11.5
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Fluoride	mg/L	0.18575
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Hardness - Dissolved (as CaCO3)	mg/L	749.25
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Dissolved	mg/L	<0.01
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Total	mg/L	5.563
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Dissolved	mg/L	<0.00005
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Total	mg/L	0.007074
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Dissolved	mg/L	0.087725
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Total	mg/L	0.093233333
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Dissolved	mg/L	78.45
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Total	mg/L	89.3
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Dissolved	mg/L	0.004845
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Total	mg/L	0.1015425
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Total	mg/L	2.29167E-05
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Dissolved	mg/L	0.00202
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Total	mg/L	0.0036425
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Dissolved	mg/L	0.0071675
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Total	mg/L	0.0220225
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrate (as N)	mg/L	31
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrite (as N)	mg/L	0.01665
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP	mV	482.25
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP, Field	mV	140.5
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Orthophosphate	mg/L	0.0013
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Field	pH	8.16
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Lab	pH	8.07
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Phosphorus (P)-Total	mg/L	0.47145
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Dissolved	mg/L	2.45
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Total	mg/L	3.49
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Dissolved	mg/L	0.09425
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Total	mg/L	0.09965
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Dissolved	mg/L	1.79
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Total	mg/L	4.1525
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Dissolved	mg/L	<0.00001
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Total	mg/L	0.0002645
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Dissolved	mg/L	3.8525
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Total	mg/L	4.245
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Dissolved	mg/L	0.2415
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Total	mg/L	0.283
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphate	mg/L	440.75
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Temperature, Field	deg c	1.7
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Dissolved	mg/L	0.000013
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Total	mg/L	0.000153667
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Dissolved	mg/L	<0.0001
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Total	mg/L	0.000135
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Total	mg/L	0.01008
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Dissolved Solids	mg/L	905
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Kjeldahl Nitrogen	mg/L	0.3895
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Organic Carbon	mg/L	152.905
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Suspended Solids	mg/L	533.125
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Turbidity, Lab	NTU	948.9825
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Dissolved	mg/L	0.0049625
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Total	mg/L	0.00602
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Dissolved	mg/L	<0.0005
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Total	mg/L	0.018156667
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Dissolved	mg/L	0.0039
17	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Total	mg/L	0.052625
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Acidity (as CaCO3)	mg/L	3.175
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Bicarbonate (as CaCO3)	mg/L	205.75
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Total (as CaCO3)	mg/L	205.75
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Dissolved	mg/L	0.0013
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Total	mg/L	0.03765
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Ammonia, Total (as N)	mg/L	0.011175
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Dissolved	mg/L	0.000296667
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Total	mg/L	0.00032
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Dissolved	mg/L	0.00011
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Total	mg/L	0.0002075
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Dissolved	mg/L	0.107333333
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Total	mg/L	0.10925
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Total	mg/L	<0.00002
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Total	mg/L	<0.00005
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Dissolved	mg/L	0.0105
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Total	mg/L	0.0125
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bromide (Br)	mg/L	<0.25
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Dissolved	mg/L	9.51333E-05
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Total	mg/L	0.00011375
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Dissolved	mg/L	157.25
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Total	mg/L	176
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chloride (Cl)	mg/L	1.8275
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Dissolved	mg/L	<0.0001
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Total	mg/L	0.000205
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Dissolved	mg/L	<0.0001
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Total	mg/L	0.000153333
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity	uS/cm	1237.5
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity, Field	uS/cm	1411
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Dissolved	mg/L	<0.0002
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Total	mg/L	<0.0005
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Organic Carbon	mg/L	0.6975
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	%	80.35

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	mg/L	10.985
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Fluoride	mg/L	0.1515
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Hardness - Dissolved (as CaCO3)	mg/L	710.25
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Dissolved	mg/L	<0.01
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Total	mg/L	0.0545
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Dissolved	mg/L	<0.00005
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Total	mg/L	0.00007925
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Dissolved	mg/L	0.088725
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Total	mg/L	0.09415
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Dissolved	mg/L	77.15
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Total	mg/L	85.65
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Dissolved	mg/L	0.003475
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Total	mg/L	0.00504
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Total	mg/L	7.475E-07
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Dissolved	mg/L	0.00174
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Total	mg/L	0.0017775
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Dissolved	mg/L	0.0072425
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Total	mg/L	0.0079225
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrate (as N)	mg/L	31.65
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrite (as N)	mg/L	0.014275
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP	mV	478.75
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP, Field	mV	135.85
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Orthophosphate	mg/L	0.001266667
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Field	pH	8.145
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Lab	pH	8.08
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Phosphorus (P)-Total	mg/L	0.01065
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Dissolved	mg/L	2.4225
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Total	mg/L	2.4975
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Dissolved	mg/L	0.096775
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Total	mg/L	0.09975
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Dissolved	mg/L	1.84
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Total	mg/L	2.0025
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Dissolved	mg/L	<0.00001
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Total	mg/L	<0.00001
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Dissolved	mg/L	3.87
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Total	mg/L	4.12
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Dissolved	mg/L	0.23625
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Total	mg/L	0.25525
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphate	mg/L	429.5
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Temperature, Field	deg c	2.25
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Dissolved	mg/L	0.00001
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Total	mg/L	1.03333E-05
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Dissolved	mg/L	<0.0001
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Total	mg/L	<0.0001
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Total	mg/L	0.000825
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Dissolved Solids	mg/L	945.25
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Kjeldahl Nitrogen	mg/L	0.2965
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Organic Carbon	mg/L	1.0075
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Suspended Solids	mg/L	5.375
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Turbidity, Lab	NTU	5.3675
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Dissolved	mg/L	0.004926667
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Total	mg/L	0.005125
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Dissolved	mg/L	<0.0005
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Total	mg/L	0.000576667
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Dissolved	mg/L	0.0044
18	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Total	mg/L	0.005075
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Acidity (as CaCO3)	mg/L	4.55
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Bicarbonate (as CaCO3)	mg/L	198.5
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Total (as CaCO3)	mg/L	198.5
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Dissolved	mg/L	0.00105
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Total	mg/L	0.0196
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Ammonia, Total (as N)	mg/L	0.0106
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Dissolved	mg/L	0.000295
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Total	mg/L	0.00032
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Dissolved	mg/L	0.000105
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Total	mg/L	0.00018
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Dissolved	mg/L	0.1055
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Total	mg/L	0.1026
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Dissolved	mg/L	<0.00002
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Total	mg/L	<0.00002
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Dissolved	mg/L	<0.00005
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Total	mg/L	<0.00005
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Dissolved	mg/L	0.01
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Total	mg/L	0.012
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bromide (Br)	mg/L	<0.25
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Dissolved	mg/L	0.0000939
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Total	mg/L	0.000098
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Dissolved	mg/L	150
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Total	mg/L	176.5
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chloride (Cl)	mg/L	1.795
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Dissolved	mg/L	0.0001
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Total	mg/L	0.00016
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Dissolved	mg/L	<0.0001
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Total	mg/L	0.00011
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity	uS/cm	1225
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity, Field	uS/cm	1781
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Dissolved	mg/L	<0.0002
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Total	mg/L	<0.0005
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Organic Carbon	mg/L	0.72
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	%	79.5
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	mg/L	11.19
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Fluoride	mg/L	0.129
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Hardness - Dissolved (as CaCO3)	mg/L	704.5
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Dissolved	mg/L	<0.01
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Total	mg/L	0.025
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Dissolved	mg/L	<0.00005
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Total	mg/L	<0.00005
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Dissolved	mg/L	0.0837
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Total	mg/L	0.09325
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Dissolved	mg/L	80.05
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Total	mg/L	82.3
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Dissolved	mg/L	0.003275
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Total	mg/L	0.00381
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Dissolved	mg/L	<0.000005
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Total	mg/L	<0.000005
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Dissolved	mg/L	0.00163
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Total	mg/L	0.001725

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Dissolved	mg/L	0.007415
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Total	mg/L	0.00771
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrate (as N)	mg/L	31.75
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrite (as N)	mg/L	0.0134
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP	mV	480.5
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP, Field	mV	137.2
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Orthophosphate	mg/L	<0.001
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Field	pH	8.11
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Lab	pH	8.065
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Phosphorus (P)-Total	mg/L	0.0037
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Dissolved	mg/L	2.405
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Total	mg/L	2.41
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Dissolved	mg/L	0.0966
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Total	mg/L	0.09335
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Dissolved	mg/L	1.855
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Total	mg/L	1.97
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Dissolved	mg/L	<0.00001
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Total	mg/L	<0.00001
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Dissolved	mg/L	3.755
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Total	mg/L	3.94
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Dissolved	mg/L	0.233
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Total	mg/L	0.2485
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphate	mg/L	417
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Temperature, Field	deg c	1.1
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Dissolved	mg/L	<0.00001
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Total	mg/L	0.00001
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Dissolved	mg/L	<0.0001
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Total	mg/L	<0.0001
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Dissolved	mg/L	<0.0003
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Total	mg/L	0.00036
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Dissolved Solids	mg/L	948.5
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Kjeldahl Nitrogen	mg/L	0.4125
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Organic Carbon	mg/L	0.77
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Suspended Solids	mg/L	2.55
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Turbidity, Lab	NTU	2.33
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Dissolved	mg/L	0.004685
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Total	mg/L	0.004805
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Dissolved	mg/L	<0.0005
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Total	mg/L	<0.0005
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Dissolved	mg/L	0.0051
19	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Total	mg/L	0.0046
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Acidity (as CaCO3)	mg/L	<2
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Bicarbonate (as CaCO3)	mg/L	199.5
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Total (as CaCO3)	mg/L	199.5
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Dissolved	mg/L	0.0012
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Total	mg/L	0.0343
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Ammonia, Total (as N)	mg/L	0.0162
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Dissolved	mg/L	0.000295
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Total	mg/L	0.000325
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Dissolved	mg/L	0.0001
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Total	mg/L	0.00013
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Dissolved	mg/L	0.09415
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Total	mg/L	0.09615
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Dissolved	mg/L	<0.00002
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Total	mg/L	<0.00002
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Dissolved	mg/L	<0.00005
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Total	mg/L	<0.00005
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Dissolved	mg/L	0.012
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Total	mg/L	0.013
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bromide (Br)	mg/L	<0.25
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Dissolved	mg/L	0.00009845
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Total	mg/L	0.000109
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Dissolved	mg/L	148.5
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Total	mg/L	155.5
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chloride (Cl)	mg/L	2.84
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Dissolved	mg/L	<0.0001
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Total	mg/L	0.00018
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Dissolved	mg/L	0.00011
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Total	mg/L	0.000135
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity	uS/cm	1210
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity, Field	uS/cm	1740
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Dissolved	mg/L	0.0002
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Total	mg/L	<0.0005
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Organic Carbon	mg/L	0.895
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	%	78.2
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	mg/L	10.93
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Fluoride	mg/L	0.1225
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Hardness - Dissolved (as CaCO3)	mg/L	659.5
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Dissolved	mg/L	<0.01
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Total	mg/L	0.046
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Dissolved	mg/L	<0.00005
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Total	mg/L	0.000055
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Dissolved	mg/L	0.08575
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Total	mg/L	0.0919
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Dissolved	mg/L	70.05
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Total	mg/L	72.85
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Dissolved	mg/L	0.00335
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Total	mg/L	0.004335
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Dissolved	mg/L	<0.000005
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Total	mg/L	0.0000085
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Dissolved	mg/L	0.001775
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Total	mg/L	0.001845
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Dissolved	mg/L	0.00705
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Total	mg/L	0.007445
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrate (as N)	mg/L	31.95
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrite (as N)	mg/L	0.0193
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP	mV	473
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP, Field	mV	134.6
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Orthophosphate	mg/L	<0.001
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Field	pH	8.17
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Lab	pH	8.115
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Phosphorus (P)-Total	mg/L	0.0064
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Dissolved	mg/L	2.385
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Total	mg/L	2.45
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Dissolved	mg/L	0.09595
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Total	mg/L	0.08935
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Dissolved	mg/L	1.79
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Total	mg/L	1.955
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Dissolved	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Total	mg/L	<0.00001
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Dissolved	mg/L	3.685
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Total	mg/L	3.79
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Dissolved	mg/L	0.2175
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Total	mg/L	0.2335
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphate	mg/L	411.5
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Temperature, Field	deg c	1.4
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Dissolved	mg/L	<0.00001
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Total	mg/L	0.000011
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Dissolved	mg/L	<0.0001
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Total	mg/L	<0.0001
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Dissolved	mg/L	<0.0003
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Total	mg/L	0.00075
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Dissolved Solids	mg/L	929.5
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Kjeldahl Nitrogen	mg/L	0.27
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Organic Carbon	mg/L	0.99
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Suspended Solids	mg/L	4.65
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Turbidity, Lab	NTU	4.16
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Dissolved	mg/L	0.00483
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Total	mg/L	0.005035
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Dissolved	mg/L	<0.0005
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Total	mg/L	<0.0005
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Dissolved	mg/L	0.0045
20	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Total	mg/L	0.00485
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Acidity (as CaCO3)	mg/L	4
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Bicarbonate (as CaCO3)	mg/L	209
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Total (as CaCO3)	mg/L	209
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Dissolved	mg/L	0.00115
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Total	mg/L	0.0255
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Ammonia, Total (as N)	mg/L	0.0224
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Dissolved	mg/L	0.00032
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Total	mg/L	0.000345
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Dissolved	mg/L	0.00011
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Total	mg/L	0.00013
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Dissolved	mg/L	0.09635
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Total	mg/L	0.0975
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Dissolved	mg/L	<0.00002
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Total	mg/L	<0.00002
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Dissolved	mg/L	<0.00005
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Total	mg/L	<0.00005
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Dissolved	mg/L	0.011
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Total	mg/L	0.012
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bromide (Br)	mg/L	<0.25
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Dissolved	mg/L	0.00009275
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Total	mg/L	0.00009865
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Dissolved	mg/L	149
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Total	mg/L	155
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chloride (Cl)	mg/L	1.93
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Dissolved	mg/L	0.00012
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Total	mg/L	0.00033
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Dissolved	mg/L	0.000125
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Total	mg/L	0.00016
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity	uS/cm	1220
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity, Field	uS/cm	1142.6
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Dissolved	mg/L	<0.0002
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Total	mg/L	<0.0005
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Organic Carbon	mg/L	0.865
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	%	95.83
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	mg/L	9.56
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Fluoride	mg/L	0.1705
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Hardness - Dissolved (as CaCO3)	mg/L	654.5
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Dissolved	mg/L	<0.01
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Total	mg/L	0.0305
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Dissolved	mg/L	<0.00005
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Total	mg/L	<0.00005
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Dissolved	mg/L	0.0847
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Total	mg/L	0.0871
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Dissolved	mg/L	68.65
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Total	mg/L	73.45
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Dissolved	mg/L	0.00303
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Total	mg/L	0.00392
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Dissolved	mg/L	<0.000005
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Total	mg/L	<0.000005
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Dissolved	mg/L	0.00185
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Total	mg/L	0.00189
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Dissolved	mg/L	0.00714
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Total	mg/L	0.00768
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrate (as N)	mg/L	32.65
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrite (as N)	mg/L	0.01955
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP	mV	461.5
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP, Field	mV	135.8
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Orthophosphate	mg/L	<0.001
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Field	pH	8.21
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Lab	pH	8.07
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Phosphorus (P)-Total	mg/L	0.0045
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Dissolved	mg/L	2.39
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Total	mg/L	2.51
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Dissolved	mg/L	0.09535
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Total	mg/L	0.08835
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Dissolved	mg/L	1.755
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Total	mg/L	1.95
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Dissolved	mg/L	<0.00001
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Total	mg/L	<0.00001
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Dissolved	mg/L	3.425
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Total	mg/L	3.585
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Dissolved	mg/L	0.222
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Total	mg/L	0.2255
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphate	mg/L	430
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Temperature, Field	deg c	6.92
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Dissolved	mg/L	0.00001
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Total	mg/L	0.0000105
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Dissolved	mg/L	<0.0001
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Total	mg/L	<0.0001
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Dissolved	mg/L	<0.0003
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Total	mg/L	<0.0006
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Dissolved Solids	mg/L	931.5
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Kjeldahl Nitrogen	mg/L	0.35
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Organic Carbon	mg/L	1.38
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Suspended Solids	mg/L	3.55

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Turbidity, Lab	NTU	2.325
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Dissolved	mg/L	0.004835
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Total	mg/L	0.004845
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Dissolved	mg/L	<0.0005
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Total	mg/L	<0.0005
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Dissolved	mg/L	0.00405
21	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Total	mg/L	0.0054
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Acidity (as CaCO3)	mg/L	5.6
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Bicarbonate (as CaCO3)	mg/L	212.5
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Total (as CaCO3)	mg/L	212.5
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Dissolved	mg/L	0.0025
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Total	mg/L	0.01905
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Ammonia, Total (as N)	mg/L	0.0299
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Dissolved	mg/L	0.000325
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Total	mg/L	0.000355
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Dissolved	mg/L	0.00011
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Total	mg/L	0.000165
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Dissolved	mg/L	0.0941
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Total	mg/L	0.0967
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Dissolved	mg/L	<0.00002
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Total	mg/L	<0.00002
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Dissolved	mg/L	<0.00005
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Total	mg/L	<0.00005
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Dissolved	mg/L	0.011
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Total	mg/L	0.0115
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bromide (Br)	mg/L	<0.25
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Dissolved	mg/L	0.00009265
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Total	mg/L	0.000109
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Dissolved	mg/L	148.5
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Total	mg/L	151
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chloride (Cl)	mg/L	1.595
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Dissolved	mg/L	0.000105
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Total	mg/L	0.000145
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Dissolved	mg/L	0.000135
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Total	mg/L	0.000155
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity	uS/cm	1200
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity, Field	uS/cm	1234.2
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Dissolved	mg/L	<0.0002
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Total	mg/L	<0.0005
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Organic Carbon	mg/L	0.895
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	%	97.55
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	mg/L	11.57
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Fluoride	mg/L	0.161
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Hardness - Dissolved (as CaCO3)	mg/L	655
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Dissolved	mg/L	<0.01
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Total	mg/L	0.023
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Dissolved	mg/L	<0.00005
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Total	mg/L	<0.00005
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Dissolved	mg/L	0.08255
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Total	mg/L	0.08045
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Dissolved	mg/L	69
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Total	mg/L	74.35
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Dissolved	mg/L	0.003005
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Total	mg/L	0.00362
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Dissolved	mg/L	<0.000005
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Total	mg/L	0.00000565
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Dissolved	mg/L	0.00181
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Total	mg/L	0.001895
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Dissolved	mg/L	0.007575
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Total	mg/L	0.007895
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrate (as N)	mg/L	31.45
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrite (as N)	mg/L	0.03235
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP	mV	484
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP, Field	mV	120.4
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Orthophosphate	mg/L	0.00105
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Field	pH	8.17
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Lab	pH	8.08
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Phosphorus (P)-Total	mg/L	0.00385
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Dissolved	mg/L	2.295
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Total	mg/L	2.3
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Dissolved	mg/L	0.08675
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Total	mg/L	0.08785
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Dissolved	mg/L	1.78
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Total	mg/L	1.865
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Dissolved	mg/L	<0.00001
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Total	mg/L	<0.00001
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Dissolved	mg/L	3.36
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Total	mg/L	3.5
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Dissolved	mg/L	0.216
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Total	mg/L	0.228
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphate	mg/L	411
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Temperature, Field	deg c	0.71
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Dissolved	mg/L	0.00001
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Total	mg/L	0.0000115
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Dissolved	mg/L	<0.0001
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Total	mg/L	<0.0001
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Dissolved	mg/L	<0.0003
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Total	mg/L	0.00037
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Dissolved Solids	mg/L	934
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Kjeldahl Nitrogen	mg/L	0.2075
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Organic Carbon	mg/L	1.18
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Suspended Solids	mg/L	1.9
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Turbidity, Lab	NTU	2
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Dissolved	mg/L	0.004505
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Total	mg/L	0.005105
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Dissolved	mg/L	<0.0005
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Total	mg/L	<0.0005
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Dissolved	mg/L	0.0058
22	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Total	mg/L	0.00595
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Acidity (as CaCO3)	mg/L	7.75
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Bicarbonate (as CaCO3)	mg/L	195.5
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Total (as CaCO3)	mg/L	195.5
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Dissolved	mg/L	0.00115
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Total	mg/L	0.03405
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Ammonia, Total (as N)	mg/L	0.03745
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Dissolved	mg/L	0.00039
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Total	mg/L	0.00039

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Dissolved	mg/L	0.000125
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Total	mg/L	0.00024
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Dissolved	mg/L	0.09755
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Total	mg/L	0.0977
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Dissolved	mg/L	<0.00002
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Total	mg/L	<0.00002
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Dissolved	mg/L	<0.00005
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Total	mg/L	<0.00005
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Dissolved	mg/L	0.0115
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Total	mg/L	0.013
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bromide (Br)	mg/L	<0.25
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Dissolved	mg/L	0.00010005
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Total	mg/L	0.0001105
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Dissolved	mg/L	146
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Total	mg/L	157
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chloride (Cl)	mg/L	1.6
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Dissolved	mg/L	0.000105
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Total	mg/L	0.00024
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Dissolved	mg/L	0.00019
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Total	mg/L	0.000215
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity	uS/cm	1165
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Dissolved	mg/L	0.00023
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Total	mg/L	0.00055
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Organic Carbon	mg/L	1.14
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Fluoride	mg/L	0.1645
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Hardness - Dissolved (as CaCO3)	mg/L	659
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Dissolved	mg/L	<0.01
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Total	mg/L	0.0345
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Dissolved	mg/L	<0.00005
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Total	mg/L	0.000055
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Dissolved	mg/L	0.08825
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Total	mg/L	0.08885
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Dissolved	mg/L	71.55
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Total	mg/L	73.75
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Dissolved	mg/L	0.00348
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Total	mg/L	0.004165
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Dissolved	mg/L	<0.000005
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Total	mg/L	0.00000605
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Dissolved	mg/L	0.00197
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Total	mg/L	0.002125
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Dissolved	mg/L	0.00851
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Total	mg/L	0.0089
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrate (as N)	mg/L	32.2
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrite (as N)	mg/L	0.0214
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP	mV	483.5
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Orthophosphate	mg/L	<0.001
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Lab	pH	7.845
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Phosphorus (P)-Total	mg/L	0.00475
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Dissolved	mg/L	2.37
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Total	mg/L	2.395
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Dissolved	mg/L	0.1002
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Total	mg/L	0.095
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Dissolved	mg/L	1.985
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Total	mg/L	1.99
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Dissolved	mg/L	<0.00001
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Total	mg/L	<0.00001
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Dissolved	mg/L	3.475
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Total	mg/L	3.505
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Dissolved	mg/L	0.224
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Total	mg/L	0.223
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphate	mg/L	403
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Dissolved	mg/L	0.0000105
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Total	mg/L	0.000013
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Dissolved	mg/L	<0.0001
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Total	mg/L	0.00014
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Dissolved	mg/L	<0.0003
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Total	mg/L	0.000845
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Dissolved Solids	mg/L	870
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Kjeldahl Nitrogen	mg/L	0.1785
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Organic Carbon	mg/L	1.14
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Suspended Solids	mg/L	3.4
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Turbidity, Lab	NTU	2.625
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Dissolved	mg/L	0.00444
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Total	mg/L	0.00444
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Dissolved	mg/L	<0.0005
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Total	mg/L	0.0007
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Dissolved	mg/L	0.0067
23	3	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Total	mg/L	0.00595
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Acidity (as CaCO3)	mg/L	<2
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Bicarbonate (as CaCO3)	mg/L	118
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Bicarbonate (as HCO3)	mg/L	144
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Carbonate (as CO3)	mg/L	<1
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Hydroxide (as OH)	mg/L	<1
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Total (as CaCO3)	mg/L	118
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Dissolved	mg/L	0.0031
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Total	mg/L	0.0726
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Ammonia, Total (as N)	mg/L	0.0108
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Anion Sum	meq/L	3.75
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Dissolved	mg/L	<0.0001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Total	mg/L	0.00013
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Dissolved	mg/L	<0.0001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Total	mg/L	0.00016
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Dissolved	mg/L	0.0292
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Total	mg/L	0.0306
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Total	mg/L	<0.00002
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Total	mg/L	<0.00005
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Dissolved	mg/L	<0.01
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Total	mg/L	<0.01
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bromide (Br)	mg/L	<0.05
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Dissolved	mg/L	0.0000297
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Total	mg/L	0.0000612
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Dissolved	mg/L	42
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Total	mg/L	44
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cation - Anion Balance	%	92.8
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cation Sum	meq/L	3.48
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chloride (Cl)	mg/L	0.19
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Dissolved	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Total	mg/L	0.00023
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Total	mg/L	0.00013
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity	uS/cm	322
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity, Field	uS/cm	207.6
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Dissolved	mg/L	0.00025
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Total	mg/L	<0.0005
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Organic Carbon	mg/L	2.12
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	%	101.6
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	mg/L	13.22
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	DMSeO - Dimethylselenoxide	mg/L	<0.00001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Fluoride	mg/L	0.141
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Hardness - Dissolved (as CaCO3)	mg/L	172
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ion balance (APHA)	%	3.73
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Dissolved	mg/L	<0.01
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Total	mg/L	0.121
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Dissolved	mg/L	<0.00005
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Total	mg/L	0.000152
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Dissolved	mg/L	0.0106
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Total	mg/L	0.0106
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Dissolved	mg/L	16.2
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Total	mg/L	16.5
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Dissolved	mg/L	0.00063
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Total	mg/L	0.0115
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Total	mg/L	<0.000005
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Dissolved	mg/L	0.000683
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Total	mg/L	0.000672
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Dissolved	mg/L	0.00163
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Total	mg/L	0.00234
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrate (as N)	mg/L	3.38
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrite (as N)	mg/L	<0.001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP	mV	341
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Orthophosphate	mg/L	<0.001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Field	pH	8.16
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Lab	pH	8.02
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Phosphorus (P)-Total	mg/L	0.0297
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Dissolved	mg/L	0.632
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Total	mg/L	0.66
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Se(IV) - Selenite	mg/L	0.000065
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Se(VI) - Selenate	mg/L	0.0116
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	SeCN - Selenocyanate	mg/L	<0.00001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Dissolved	mg/L	0.0123
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Total	mg/L	0.0125
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium Unknown	mg/L	<0.00001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenosulphate	mg/L	<0.00001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	SeMe - Selenomethionine	mg/L	<0.00001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Dissolved	mg/L	1.53
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Total	mg/L	1.66
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Dissolved	mg/L	<0.00001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Total	mg/L	<0.00001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Dissolved	mg/L	0.723
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Total	mg/L	0.728
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Specific Conductivity	uS/cm	344
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Dissolved	mg/L	0.0704
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Total	mg/L	0.0782
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphate	mg/L	54.8
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphur (S)-Dissolved	mg/L	17.5
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphur (S)-Total	mg/L	18.6
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Temperature, Field	deg c	4.2
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Total	mg/L	<0.00001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Dissolved	mg/L	<0.0001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Total	mg/L	<0.0001
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Total	mg/L	0.00112
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Dissolved Solids	mg/L	209
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Kjeldahl Nitrogen	mg/L	<0.5
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Organic Carbon	mg/L	2.6
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Suspended Solids	mg/L	34.8
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Turbidity, Lab	NTU	6.06
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Dissolved	mg/L	0.000878
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Total	mg/L	0.000864
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Dissolved	mg/L	<0.0005
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Total	mg/L	<0.0005
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Dissolved	mg/L	0.0018
13	6	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Total	mg/L	0.0039
11	8	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Total (as CaCO3)	mg/L	172.12
11	8	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	mg/L	9.1
11	8	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP, Field	mV	195.3
11	8	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Field	pH	8.17
11	8	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Temperature, Field	deg c	11.9
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Acidity (as CaCO3)	mg/L	<2
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Bicarbonate (as CaCO3)	mg/L	172
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Carbonate (as CaCO3)	mg/L	11.4
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Total (as CaCO3)	mg/L	183
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Dissolved	mg/L	<0.001
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Total	mg/L	0.0055
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Ammonia, Total (as N)	mg/L	<0.005
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Dissolved	mg/L	0.00023
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Total	mg/L	0.00023
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Dissolved	mg/L	<0.0001
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Total	mg/L	0.00016
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Dissolved	mg/L	0.0753
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Total	mg/L	0.0671
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Total	mg/L	<0.00002
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Total	mg/L	<0.00005
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Dissolved	mg/L	0.012
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Total	mg/L	0.012
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bromide (Br)	mg/L	<0.25
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Dissolved	mg/L	0.0000762
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Total	mg/L	0.0000776
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Dissolved	mg/L	128
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Total	mg/L	120
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chloride (Cl)	mg/L	1.03
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Dissolved	mg/L	0.00011

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Total	mg/L	0.0011
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Total	mg/L	<0.0001
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity	uS/cm	930
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Dissolved	mg/L	0.00022
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Total	mg/L	<0.0005
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Organic Carbon	mg/L	<0.5
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	mg/L	8.89
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Fluoride	mg/L	0.18
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Hardness - Dissolved (as CaCO3)	mg/L	555
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Dissolved	mg/L	<0.01
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Total	mg/L	<0.01
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Dissolved	mg/L	<0.00005
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Total	mg/L	<0.00005
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Dissolved	mg/L	0.0616
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Total	mg/L	0.0567
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Dissolved	mg/L	57.2
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Total	mg/L	54
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Dissolved	mg/L	0.00122
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Total	mg/L	0.00112
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Total	mg/L	<0.000005
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Dissolved	mg/L	0.0014
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Total	mg/L	0.00132
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Dissolved	mg/L	0.00908
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Total	mg/L	0.00879
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrate (as N)	mg/L	23.3
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrite (as N)	mg/L	0.0182
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP	mV	308
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP, Field	mV	148.4
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Orthophosphate	mg/L	<0.001
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Field	pH	8.07
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Lab	pH	8.35
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Phosphorus (P)-Total	mg/L	0.003
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Dissolved	mg/L	1.81
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Total	mg/L	1.83
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Dissolved	mg/L	0.0878
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Total	mg/L	0.0703
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Dissolved	mg/L	1.84
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Total	mg/L	2.03
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Dissolved	mg/L	<0.00001
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Total	mg/L	<0.00001
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Dissolved	mg/L	2.36
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Total	mg/L	2.27
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Dissolved	mg/L	0.174
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Total	mg/L	0.158
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphate	mg/L	305
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Temperature, Field	deg c	12
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Total	mg/L	<0.00001
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Dissolved	mg/L	<0.0001
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Total	mg/L	<0.0001
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Total	mg/L	<0.0003
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Dissolved Solids	mg/L	744
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Kjeldahl Nitrogen	mg/L	0.494
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Organic Carbon	mg/L	<0.5
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Suspended Solids	mg/L	2.7
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Turbidity, Field	NTU	0.6
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Turbidity, Lab	NTU	0.51
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Dissolved	mg/L	0.00313
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Total	mg/L	0.0032
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Dissolved	mg/L	<0.0005
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Total	mg/L	<0.0005
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Dissolved	mg/L	0.0043
6	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Total	mg/L	0.004
8	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Total (as CaCO3)	mg/L	190.2
8	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	mg/L	8.4
8	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP, Field	mV	135.8
8	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Field	pH	8.37
8	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Temperature, Field	deg c	14.2
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Acidity (as CaCO3)	mg/L	<2
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Bicarbonate (as CaCO3)	mg/L	206
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Bicarbonate (as HCO3)	mg/L	251
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Carbonate (as CO3)	mg/L	<1
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Hydroxide (as OH)	mg/L	<1
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Total (as CaCO3)	mg/L	206
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Dissolved	mg/L	0.0013
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Total	mg/L	0.005
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Ammonia, Total (as N)	mg/L	<0.005
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Anion Sum	meq/L	12
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Dissolved	mg/L	0.00024
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Total	mg/L	0.00024
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Dissolved	mg/L	0.00011
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Total	mg/L	0.00012
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Dissolved	mg/L	0.0798
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Total	mg/L	0.0812
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Dissolved	mg/L	<0.00002
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Total	mg/L	<0.00002
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Dissolved	mg/L	<0.00005
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Total	mg/L	<0.00005
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Dissolved	mg/L	0.013
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Total	mg/L	0.012
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bromide (Br)	mg/L	<0.25
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Dissolved	mg/L	0.0000676
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Total	mg/L	0.0000654
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Dissolved	mg/L	125
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Total	mg/L	121
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cation - Anion Balance	%	93.3
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cation Sum	meq/L	11.2
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chloride (Cl)	mg/L	1.06
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Dissolved	mg/L	<0.0001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Total	mg/L	<0.0001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Dissolved	mg/L	<0.0001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Total	mg/L	<0.0001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity	uS/cm	951
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity, Field	uS/cm	674
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Dissolved	mg/L	0.00024
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Total	mg/L	<0.0005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Organic Carbon	mg/L	0.63
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	%	83.7
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	mg/L	9.536666667
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	DMSeO - Dimethylselenoxide	mg/L	<0.00001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Fluoride	mg/L	0.199
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Hardness - Dissolved (as CaCO3)	mg/L	554
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ion balance (APHA)	%	3.45
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Dissolved	mg/L	<0.01
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Total	mg/L	<0.01
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Dissolved	mg/L	<0.00005
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Total	mg/L	<0.00005
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Dissolved	mg/L	0.0738
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Total	mg/L	0.0687
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Dissolved	mg/L	58.7
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Total	mg/L	60.6
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Dissolved	mg/L	0.00118
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Total	mg/L	0.00116
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Dissolved	mg/L	<0.000005
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Total	mg/L	<0.000005
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Dissolved	mg/L	0.00129
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Total	mg/L	0.00134
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Dissolved	mg/L	0.00832
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Total	mg/L	0.00905
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrate (as N)	mg/L	22.8
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrite (as N)	mg/L	0.011
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP	mV	314
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Orthophosphate	mg/L	<0.001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Field	pH	8.183333333
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Lab	pH	8.19
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Phosphorus (P)-Total	mg/L	0.0021
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Dissolved	mg/L	2.01
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Total	mg/L	2.06
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Se(IV) - Selenite	mg/L	0.000232
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Se(VI) - Selenate	mg/L	0.0654
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	SeCN - Selenocyanate	mg/L	<0.00001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Dissolved	mg/L	0.0757
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Total	mg/L	0.0676
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium Unknown	mg/L	<0.00001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenosulphate	mg/L	<0.00001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	SeMe - Selenomethionine	mg/L	<0.00001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Dissolved	mg/L	2.13
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Total	mg/L	2
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Dissolved	mg/L	<0.00001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Total	mg/L	<0.00001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Dissolved	mg/L	2.88
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Total	mg/L	3.1
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Specific Conductivity	uS/cm	956
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Dissolved	mg/L	0.187
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Total	mg/L	0.191
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphate	mg/L	300
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphur (S)-Dissolved	mg/L	117
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphur (S)-Total	mg/L	109
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Temperature, Field	deg c	9.65
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Dissolved	mg/L	<0.00001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Total	mg/L	<0.00001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Dissolved	mg/L	<0.0001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Total	mg/L	<0.0001
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Dissolved	mg/L	<0.0003
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Total	mg/L	<0.0003
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Dissolved Solids	mg/L	769
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Kjeldahl Nitrogen	mg/L	3.13
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Organic Carbon	mg/L	<0.5
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Suspended Solids	mg/L	1.1
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Turbidity, Lab	NTU	0.37
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Dissolved	mg/L	0.00375
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Total	mg/L	0.00423
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Dissolved	mg/L	<0.0005
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Total	mg/L	<0.0005
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Dissolved	mg/L	0.0041
12	9	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Total	mg/L	0.0042
12	10	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Total (as CaCO3)	mg/L	186.46
12	10	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	mg/L	10.2
12	10	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP, Field	mV	157.3
12	10	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Field	pH	7.97
12	10	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Temperature, Field	deg c	7.8
3	11	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Total (as CaCO3)	mg/L	179.19
3	11	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	mg/L	11.1
3	11	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP, Field	mV	63
3	11	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Field	pH	8.19
3	11	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Temperature, Field	deg c	3.7
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Acidity (as CaCO3)	mg/L	<2
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Bicarbonate (as CaCO3)	mg/L	201
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Bicarbonate (as HCO3)	mg/L	245
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Carbonate (as CO3)	mg/L	<1
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Hydroxide (as OH)	mg/L	<1
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Alkalinity, Total (as CaCO3)	mg/L	201
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Dissolved	mg/L	<0.001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Aluminum (Al)-Total	mg/L	0.0037
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Ammonia, Total (as N)	mg/L	<0.005
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Anion Sum	meq/L	14.6
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Dissolved	mg/L	0.00018
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Antimony (Sb)-Total	mg/L	0.00021
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Dissolved	mg/L	<0.0001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Arsenic (As)-Total	mg/L	0.00011
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Dissolved	mg/L	0.098
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Barium (Ba)-Total	mg/L	0.106
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Beryllium (Be)-Total	mg/L	<0.00002
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bismuth (Bi)-Total	mg/L	<0.00005
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Dissolved	mg/L	<0.01
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Boron (B)-Total	mg/L	<0.01
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Bromide (Br)	mg/L	<0.25
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Dissolved	mg/L	0.000064
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cadmium (Cd)-Total	mg/L	0.0000726
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Dissolved	mg/L	148
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Calcium (Ca)-Total	mg/L	166

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cation - Anion Balance	%	89.7
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cation Sum	meq/L	13.1
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chloride (Cl)	mg/L	1.35
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Dissolved	mg/L	<0.0001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Chromium (Cr)-Total	mg/L	<0.0001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Cobalt (Co)-Total	mg/L	<0.0001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity	uS/cm	1160
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Conductivity, Field	uS/cm	723
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Dissolved	mg/L	<0.0002
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Copper (Cu)-Total	mg/L	<0.0005
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Organic Carbon	mg/L	<0.5
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	%	88.4
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Dissolved Oxygen, Field	mg/L	12.18
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	DMSeO - Dimethylselenoxide	mg/L	<0.00001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Fluoride	mg/L	0.162
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Hardness - Dissolved (as CaCO3)	mg/L	647
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ion balance (APHA)	%	-5.42
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Dissolved	mg/L	<0.01
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Iron (Fe)-Total	mg/L	<0.01
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Dissolved	mg/L	<0.00005
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lead (Pb)-Total	mg/L	<0.00005
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Dissolved	mg/L	0.0837
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Lithium (Li)-Total	mg/L	0.0866
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Dissolved	mg/L	67.4
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Magnesium (Mg)-Total	mg/L	75.5
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Dissolved	mg/L	0.0015
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Manganese (Mn)-Total	mg/L	0.00172
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Mercury (Hg)-Total	mg/L	<0.000005
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Dissolved	mg/L	0.00109
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Molybdenum (Mo)-Total	mg/L	0.00127
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Dissolved	mg/L	0.0045
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nickel (Ni)-Total	mg/L	0.00578
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrate (as N)	mg/L	28.9
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Nitrite (as N)	mg/L	0.0068
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	ORP	mV	429
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Orthophosphate	mg/L	<0.001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	pH, Lab	pH	8.22
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Phosphorus (P)-Total	mg/L	<0.002
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Dissolved	mg/L	1.86
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Potassium (K)-Total	mg/L	1.91
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Se(IV) - Selenite	mg/L	0.000192
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Se(VI) - Selenate	mg/L	0.0858
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	SeCN - Selenocyanate	mg/L	<0.00001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Dissolved	mg/L	0.08615
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium (Se)-Total	mg/L	0.0932
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenium Unknown	mg/L	<0.00001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Selenosulphate	mg/L	<0.00001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	SeMe - Selenomethionine	mg/L	<0.00001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Dissolved	mg/L	1.65
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silicon (Si)-Total	mg/L	1.86
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Dissolved	mg/L	<0.00001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Silver (Ag)-Total	mg/L	<0.00001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Dissolved	mg/L	3.15
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sodium (Na)-Total	mg/L	3.63
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Specific Conductivity	uS/cm	1290
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Dissolved	mg/L	0.223
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Strontium (Sr)-Total	mg/L	0.227
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphate	mg/L	405
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphur (S)-Dissolved	mg/L	136
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Sulphur (S)-Total	mg/L	150
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Temperature, Field	deg c	2
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Thallium (Tl)-Total	mg/L	<0.00001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Dissolved	mg/L	<0.0001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Tin (Sn)-Total	mg/L	<0.0001
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Titanium (Ti)-Total	mg/L	<0.0003
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Dissolved Solids	mg/L	874
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Kjeldahl Nitrogen	mg/L	1.39
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Organic Carbon	mg/L	<0.5
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Total Suspended Solids	mg/L	3.7
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Turbidity, Lab	NTU	0.41
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Dissolved	mg/L	0.0046
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Uranium (U)-Total	mg/L	0.0049
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Dissolved	mg/L	<0.0005
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Vanadium (V)-Total	mg/L	<0.0005
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Dissolved	mg/L	0.0024
7	12	2022	FR_MULTIPLATE (RG_MP1)	FR_MULTIPLATE	Zinc (Zn)-Total	mg/L	<0.003
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	195
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	11.2
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	195
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	<0.001
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.004
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.0112
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00026
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00028
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00011
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0963
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.105
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.011
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	<0.01
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000921
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.000108
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	146
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	146
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.3
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	0.0001
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	<0.0001
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1200
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity, Field	uS/cm	1301
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	<0.0002
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	0.61
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	%	83.5
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	11.58
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.12
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	648
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	<0.01
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0835
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0883
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	68.9
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	74.3
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00193
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00229
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.0000005
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00143
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00147
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00756
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00778
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	32.3
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0291
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	436
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	299.2
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	7.4
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.38
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0029
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.18
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.25
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0824
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0869
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.83
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	2
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	3.28
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	3.71
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.218
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.226
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	400
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	1.7
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0003
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	915
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	<0.05
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	0.65
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	<1
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	0.27
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00466
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00475
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0039
12	1	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0046
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	204
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	204
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0025
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0068
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.005
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00025
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00027
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00016
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0969
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.096
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.01
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	<0.01
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000824
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000949
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	160
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	156
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.3
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	0.00012
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00018
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1220
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00058
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	0.56
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	%	86.7
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	12.57
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.119
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	687
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.011
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0852
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0838
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	69.9
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	73.8

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00188
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00261
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00144
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00142
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00681
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00703
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	33.5
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0101
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	361
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	173.3
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	0.0011
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	10
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.07
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0026
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.17
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.06
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0873
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.091
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.9
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.88
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	3.34
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	3.17
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.224
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.227
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	406
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	0.1
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	0.00093
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0003
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	851
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.348
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	0.69
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	4.2
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Field	NTU	0
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	0.3
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00431
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00477
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0052
4	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0041
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	2.7
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	199
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	199
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	<0.001
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0079
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.0146
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00028
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.0003
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.00012
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00013
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.103
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0977
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.012
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.01
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000825
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.000109
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	157
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	158
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.66
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00015
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00012
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1240
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	<0.0002
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	0.66
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.134
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	698
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.012
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0881
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0812
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	74.4
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	79.1
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00211
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00286
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	0.0000067
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.0000005
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00157
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00161
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00715
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00835
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	35.6
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0143
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	474
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	0.0014
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.15
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.004
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.68
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.3
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0917
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0975
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.9

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.87
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	3.61
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	3.36
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.223
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.232
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	430
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.000011
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0003
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	981
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.331
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	0.89
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	1.8
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	0.44
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00462
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.005
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0041
28	2	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0044
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	197
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	197
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0012
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0047
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.0066
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00025
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00027
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00012
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0974
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0989
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.011
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.012
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.000084
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000957
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	161
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	164
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.78
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00014
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1230
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	<0.0002
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	0.54
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	%	82.7
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	11.66
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.14
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	720
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	<0.01
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0896
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0967
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	77.3
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	76.6
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00195
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00231
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.0000005
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00137
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00146
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00708
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00721
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	35.4
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0123
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	448
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	158.4
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.07
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.16
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0021
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.28
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.2
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.095
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.095
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.89
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.95
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	3.73
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	3.61
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.231
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.238
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	418
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	1.1
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0003
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	942
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	<0.05
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	0.62
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	1.5

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Field	NTU	0.35
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	0.42
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00468
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00488
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0036
1	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.004
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	3.2
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	217
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	217
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0028
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	1.08
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00027
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00044
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00085
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0905
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.172
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	0.000129
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.01
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.014
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000846
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.000325
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	168
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	161
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.82
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00212
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	0.0001
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00113
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1220
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity, Field	uS/cm	997
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.0003
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	0.00376
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	1.27
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	%	81.6
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	10.83
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.126
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	706
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	1.46
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.00176
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0856
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0917
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	69.5
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	75.7
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.002
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.0253
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	0.0000186
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00143
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00197
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00586
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.0105
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	32.4
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0157
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	495
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	152.1
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.2
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.23
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.185
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.18
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.81
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0923
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0889
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.83
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	3.36
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	0.000053
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	3.21
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	3.56
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.232
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.23
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	413
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	3.4
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.000066
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.0135
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	901
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.438
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	54.1
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	89.6
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	132
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00462
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00495
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	0.00569
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0038
16	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0186
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	193.6666667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	193.6666667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.002266667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.267533333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.011333333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.000295

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00037
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.00011
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00035
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.098366667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.125
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	0.0000465
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.0115
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.0135
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000918
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.000169
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	166.6666667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	181.3333333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.863333333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	0.000116667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00069
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	0.000105
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.000436667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1223.333333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity, Field	uS/cm	1188.333333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.000936667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	0.001206667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	0.706666667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	%	81.2
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	11.35333333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.176333333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	726.3333333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.449333333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.000533333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.087033333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.094933333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	75.33333333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	90.26666667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.002796667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.01136
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	0.00000215
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.001793333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00199
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00652
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.008616667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	31.16666667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.013266667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	485.3333333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	139.5666667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	0.001366667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.193333333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.08
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.050133333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.286666667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.703333333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.094066667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.1007
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.796666667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	2.363333333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	0.000026
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	3.766666667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	4.283333333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.238
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.257
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	438.6666667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	1.466666667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	2.16667E-05
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00253
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	872
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.277333333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	27.43
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	39.66666667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	38.66333333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.004835
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.005133333
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	0.001716667
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.005
17	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0097
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	4.4
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	210
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	210
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0015
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.077
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.0084
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00028
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00034
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00025
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0999
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.107
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.01
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.012
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000856
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.000114
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	151
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	181
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.79

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00027
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00024
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1210
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity, Field	uS/cm	1694
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	<0.0002
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	2.09
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	%	80.9
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	10.76
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.124
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	697
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.146
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.000205
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0868
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0944
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	77.7
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	83.6
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00268
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.0069
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	0.00000148
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00164
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00187
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00641
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00719
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	30.3
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0117
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	476
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	143.5
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	0.001
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.24
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.14
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0182
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.28
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.44
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0952
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0989
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.77
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	2.11
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	3.71
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	4.02
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.222
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.26
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	410
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	3.2
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.00001
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0015
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	959
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	<0.05
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	0.94
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	16.6
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	14.6
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00472
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00502
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	0.00074
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0037
18	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0052
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	4.1
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	198
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	198
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	<0.001
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0466
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.0071
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00028
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.0003
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00022
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.108
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.1
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.01
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.012
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000808
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000984
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	145
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	168
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.77
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00022
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00014
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1220
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity, Field	uS/cm	1017
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	<0.0002
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	0.62
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	%	80.2
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	11.33
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.126
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	694
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.069
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.000081

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0789
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0874
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	80.7
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	79.8
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00265
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00445
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	0.0000069
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.0016
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00158
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00691
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00723
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	31.2
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0097
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	486
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	139.8
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	0.0011
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.18
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.2
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0098
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.38
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.34
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0985
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0908
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.86
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.91
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	3.85
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	3.84
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.229
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.236
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	414
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	1.1
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00096
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	951
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.286
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	1.11
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	6.9
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	6.02
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00456
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00459
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	0.00057
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0045
19	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0042
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	217
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	217
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0015
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0478
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.0126
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00029
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00032
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00014
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0963
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0967
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.012
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.013
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000946
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0001
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	146
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	160
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.76
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.0002
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00016
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1200
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity, Field	uS/cm	969
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	<0.0002
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	1.11
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	%	81
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	11.33
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.119
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	655
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.081
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.000096
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0873
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0925
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	70.6
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	73.3
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.0029
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00449
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	0.0000075
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00171
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00179
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00665
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00715
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	30.8
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0135
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	475
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	134.9
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	0.0012

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.2
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.13
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0104
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.37
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.45
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0964
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0868
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.79
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	2.03
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	3.68
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	3.76
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.216
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.23
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	405
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	1.4
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.000013
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0009
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	894
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	<0.05
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	1.32
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	6.6
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	9.07
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00477
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.005
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0042
20	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0049
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	3.5
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	215
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	215
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0016
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0327
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.0172
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00033
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00036
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.0001
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00014
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0958
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.101
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.012
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.013
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000996
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000987
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	150
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	157
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	2
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	0.00015
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00045
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	0.00011
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00014
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1210
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity, Field	uS/cm	1141.9
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	<0.0002
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	0.96
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	%	97.57
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	9.84
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.168
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	659
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.042
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0857
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.087
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	69
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	73
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00257
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00373
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.0000005
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00196
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00196
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.0068
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00735
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	31.4
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.019
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	459
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	142.4
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.25
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.1
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0051
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.4
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.46
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.094
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0885
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.78
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.97
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	3.47
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	3.62
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.224
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.225
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	416
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	6.54

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	0.00001
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.000011
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0009
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	931
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.356
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	1.14
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	3.3
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	3.31
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.0048
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00486
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.005
21	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.007
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	4.8
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	202
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	202
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0023
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0286
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.0232
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00032
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00035
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.0001
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00016
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0911
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.095
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.012
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.011
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000888
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000949
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	150
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	149
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.75
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	0.0001
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00017
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	0.00012
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00014
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1200
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity, Field	uS/cm	1190.6
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	<0.0002
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	0.78
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	%	96.37
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	11.15
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.164
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	655
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.058
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.000054
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0835
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0798
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	68.1
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	73.8
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00262
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00377
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.0000005
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00187
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00184
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00718
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00731
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	30.8
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0237
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	487
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	146.2
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	0.0011
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.19
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.1
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0064
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.26
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.27
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0873
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0863
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.78
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.83
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	3.42
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	3.47
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.218
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.218
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	411
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	1.62
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.00001
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00058
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	956
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	<0.05
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	1.75
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	5.3
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	4.46
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00444
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00505
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0055
22	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0061

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	5.1
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	199
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	199
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.003
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0681
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.0299
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.0004
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.0004
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.00013
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00023
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0974
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0979
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.011
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.013
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000982
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.000108
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	143
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	155
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.64
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	0.00011
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00032
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	0.00017
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00025
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1150
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00025
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	0.99
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.17
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	646
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.077
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.000112
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0842
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0867
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	70.3
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	73
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00293
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00435
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	0.0000075
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.0021
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00215
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00807
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00847
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	29.9
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0176
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	469
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.09
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0075
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.31
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.37
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0997
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0936
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	2
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	2.05
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	3.52
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	3.53
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.224
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.217
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	403
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.000014
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	0.00016
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00163
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	887
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	<0.05
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	1.72
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	8.4
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	4.99
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00433
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00434
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	0.00084
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0085
23	3	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0104
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	194
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	194
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	<0.005
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0212
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.0676
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00072
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.0007
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.00014
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00016
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0954
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0939
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.011
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.012
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.000152
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.000165

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	152
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	148
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.39
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	<0.0001
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	0.00067
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00068
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1130
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	<0.0008
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	1.18
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	%	85.7
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	11.78
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.134
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	680
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.023
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0885
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0863
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	72.9
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	71.1
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00347
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.0047
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.0034
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.0034
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.0138
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.0139
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	28.8
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0484
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	461
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	136.3
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.12
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.26
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0047
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.44
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.47
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0908
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0873
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.89
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	2.07
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	3.33
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	3.37
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.27
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.268
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	351
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	2.1
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	0.000012
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.000014
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	0.00038
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00058
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	887
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.39
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	1.2
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	3.1
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	0.98
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00412
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00408
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0086
6	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.008
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	216
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	216
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0032
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.039
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.114
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00081
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00088
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.00014
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00023
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0975
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.109
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.012
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.012
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.000207
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.000204
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	138
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	138
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.19
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00014
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	0.00078
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00086
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1120
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00035
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	1.57
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.174
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	613
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.038
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.076

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0735
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	65.2
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	68.3
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00467
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00609
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.0039
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00416
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.0148
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.0158
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	28.2
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0615
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	443
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.09
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0057
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.54
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.77
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0964
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.1
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.85
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	2.1
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	2.56
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	2.7
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.234
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.248
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	373
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	0.000016
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.00002
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00114
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	811
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.469
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	1.84
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	3.9
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	2.19
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00414
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00433
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0099
11	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0109
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	189
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	4.4
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	194
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0019
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0252
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00033
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00036
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.00011
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00012
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0809
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0879
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.011
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.012
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.000187
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.000199
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	150
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	155
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.21
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00016
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	0.00019
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00025
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1190
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00031
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	0.00051
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	1.34
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.127
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	650
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.028
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0803
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0768
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	66.8
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	70.8
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00247
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00313
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00196
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00201
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.0119
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.0125
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	32.1
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0051
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	237
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.31
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0049
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.4
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.46
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.103
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.107
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.76
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.96

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	2.72
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	2.88
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.21
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.215
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	388
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	0.000012
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.000013
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00065
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	963
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	<0.05
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	1.54
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	<1
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	0.82
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00458
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00495
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0099
20	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0104
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	165
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	165
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0198
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.288
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00027
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00031
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.00014
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00029
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0633
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0899
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	0.000023
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	<0.01
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.01
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.000156
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.000262
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	107
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	111
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	0.72
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	0.00011
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00056
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	0.00047
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.0008
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	875
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00188
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	0.00131
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	3.9
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	%	83.2
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	10.53
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.145
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	464
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	0.023
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.322
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.00041
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0442
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0467
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	47.7
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	49.1
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00768
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.0162
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	0.0000535
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00164
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.0033
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.0102
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.0126
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	19.7
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0089
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	445
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	133.7
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.08
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.29
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0303
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	1.69
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	1.89
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0735
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0808
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.78
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	2.34
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	0.000018
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	1.72
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	1.9
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.147
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.149
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	266
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	5.2
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	0.000011
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.000026
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	0.00032
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00597
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	587
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.39
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	4.4
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	30.7
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	18

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00289
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00314
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	0.00172
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0079
25	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0152
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	160
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	160
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0136
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.116
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00029
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00031
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.00015
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00023
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0702
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.075
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	<0.01
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	<0.01
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.000214
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.000236
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	122
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	117
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	0.68
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00032
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	0.0006
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00066
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	874
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00064
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	0.0009
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	3.87
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	12.3
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.115
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	536
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	0.016
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.079
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.00008
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0461
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0439
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	56.1
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	52.4
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00763
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00975
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00164
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00155
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.013
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.0127
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	19.9
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0078
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	259
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	126
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.28
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.16
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0128
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	1.97
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	1.85
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0845
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0777
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.91
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	2.05
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	1.94
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	1.84
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.16
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.157
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	259
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	3.4
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	0.000011
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.000015
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00326
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	627
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.364
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	3.32
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	6.6
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Field	NTU	10.6
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	3.38
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00316
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00294
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	0.00083
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0097
26	4	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0126
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	169
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	169
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0048
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0394
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.0096
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00027
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00026
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.00011
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00012

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0574
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0602
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	<0.01
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.01
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.000185
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.000205
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	104
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	110
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	0.65
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00017
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	0.00032
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00037
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	869
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.0004
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	1.86
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	11.62
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.159
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	453
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.036
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0382
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0416
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	46.9
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	52.1
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00444
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00615
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00148
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00143
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.01
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.0106
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	19.8
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.01
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	288
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	121.1
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.38
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.27
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0095
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	1.77
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	1.73
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.078
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0748
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.74
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.87
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	1.66
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	1.73
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.142
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.142
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	257
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	4.1
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	0.000012
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.000012
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00084
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	581
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.456
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	2.18
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	3.1
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Field	NTU	2.36
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	1.95
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00303
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00295
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0093
3	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0096
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	167
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	167
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0043
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0327
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00025
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00027
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.00012
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00012
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0505
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0542
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	<0.01
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	<0.01
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.000163
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.000184
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	102
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	103
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	0.6
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	0.00012
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00012
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	0.00024
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00027

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	794
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00055
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	2.18
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	10.82
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.167
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	448
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.026
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0402
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0406
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	46.9
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	44.7
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00385
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00516
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.0014
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00141
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.0092
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00959
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	18
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0073
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	394
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	109.3
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.35
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.24
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0058
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	1.73
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	1.73
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0651
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0627
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.69
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.84
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	1.62
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	1.79
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.13
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.132
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	229
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	3.3
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	0.000011
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.000012
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	0.00027
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00077
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	596
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.467
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	2.27
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	2.6
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Field	NTU	5.62
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	1.18
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00279
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00275
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0083
10	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0086
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	148
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	1
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	149
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0031
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0314
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.0147
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00018
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00018
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.00011
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00014
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0482
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0529
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	<0.01
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	<0.01
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.000105
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.000127
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	83.5
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	96.2
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	0.45
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	0.00026
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00021
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00015
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	672
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00031
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	2.05
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	11.3
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.167
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	358
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.038
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0315
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0308
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	36.2
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	37.7
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00177
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00399
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00113
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00118
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00534
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.0059
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	12.9
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0044
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	366
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	242.6
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.34
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.3
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0113
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	1.39
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	1.31
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.052
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0482
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.68
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.75
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	1.43
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	1.47
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.122
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.128
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	176
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	4.7
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.00001
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00052
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	499
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.209
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	2.27
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	5.5
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Field	NTU	2.03
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	1.69
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.0022
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00229
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0046
17	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0081
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	154
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	1.6
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	156
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0031
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0171
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00019
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00021
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00012
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0489
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0505
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	<0.01
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	<0.01
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000855
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0001
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	82.8
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	84.8
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	0.44
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00012
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	667
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00081
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	0.00056
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	1.38
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	11.47
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.17
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	357
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.022
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.028
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0304
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	36.4
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	38.8
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00112
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00211
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.0012
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00118
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00496
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00514
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	11.9
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0055
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	289
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	171.2
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.44
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.3
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0048
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	1.32
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	1.27
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.048
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0465
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.5

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.63
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	1.4
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	1.44
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.12
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.125
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	177
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	4.2
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0003
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	466
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.364
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	1.33
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	2.2
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Field	NTU	3.09
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	1.65
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00212
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00214
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0046
25	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0056
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	134
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	4
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	138
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.003
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.045
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00013
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00015
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.0001
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00015
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0402
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0426
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	<0.01
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	<0.01
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000539
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000653
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	61.6
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	63
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	2
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00016
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	455
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.0003
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	1.45
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.166
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	248
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.035
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0165
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0166
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	22.9
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	25.5
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00083
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00245
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.000876
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.000925
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00273
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00318
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	6.18
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0116
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	342
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.29
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0068
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	0.821
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	0.943
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0261
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0248
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.62
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.81
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	0.918
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	0.98
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.0933
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.0951
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	93.3
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00105
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	344
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.357
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	1.78
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	1.9
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	0.79
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00127
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00133

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0026
31	5	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0031
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	117
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	2.6
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	120
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0038
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0513
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	<0.0001
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00015
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0269
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0336
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	<0.01
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	<0.01
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000188
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000339
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	48.6
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	44.1
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	0.2
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00017
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	337
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00024
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	1.32
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	11
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.129
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	181
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.061
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.000074
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.012
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0108
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	14.4
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	14.5
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00048
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00568
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.000687
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00061
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00129
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00174
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	2.59
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0224
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	352
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	150.5
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	0.0019
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.19
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.29
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0169
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	0.504
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	0.576
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0105
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0104
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.55
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.67
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	0.653
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	0.704
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.0829
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.0764
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	46.4
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	4
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00079
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	200
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.234
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	1.38
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	10.8
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Field	NTU	5.82
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	2.8
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.000878
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.000869
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0014
7	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	<0.003
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	120
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as HCO3)	mg/L	147
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CO3)	mg/L	<1
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as OH)	mg/L	<1
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	120
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0028
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0806
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Anion Sum	meq/L	3.79
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00016
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.029
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.03
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	<0.01
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	<0.01
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000298
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000462
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	43.3
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	45.1
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cation - Anion Balance	%	93.9
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cation Sum	meq/L	3.56
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	0.2
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00023
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	323
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity, Field	uS/cm	208
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00021
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	2.05
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	%	101.6
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	13.2
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	DMSeO - Dimethylselenoxide	mg/L	<0.00001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.143
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	176
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ion balance (APHA)	%	3.13
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.1
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.000064
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0111
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.011
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	16.4
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	16.2
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00145
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00578
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.000665
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.0007
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00156
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.002
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	3.31
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	<0.001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	329
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.22
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.02
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0155
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	0.618
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	0.673
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Se(IV) - Selenite	mg/L	0.000073
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Se(VI) - Selenate	mg/L	0.0117
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	SeCN - Selenocyanate	mg/L	<0.00001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.011866667
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.012566667
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium Unknown	mg/L	<0.00001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenosulphate	mg/L	<0.00001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	SeMe - Selenomethionine	mg/L	<0.00001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.52
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.76
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	0.715
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	0.72
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Specific Conductivity	uS/cm	344
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.0697
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.0737
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	55
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphur (S)-Dissolved	mg/L	18.3
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphur (S)-Total	mg/L	18.6
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	4.3
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00127
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	209
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	<0.5
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	2.22
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	29
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	3.9
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.000834
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.000876
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0014
13	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	<0.003
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	136
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	136
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0043
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.3
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.0051
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00011
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00015
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00029
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0332

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.053
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	0.00003
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	<0.01
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	<0.01
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000393
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000989
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	49.1
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	46.2
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	0.22
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	0.0001
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00058
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00038
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	366
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00026
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	0.00109
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	1.44
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	11.06
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.134
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	196
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.436
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.000432
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0119
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0118
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	17.8
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	20
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.0012
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.0116
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	0.0000057
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.000837
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.000849
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00195
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00362
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	4.15
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0021
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	300
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	144.9
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.16
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.14
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0336
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	0.748
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	0.947
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0154
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0177
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.7
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	2.12
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	0.000012
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	0.783
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	0.88
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.0792
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.0802
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	63.4
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	3.5
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.000017
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00197
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	238
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.259
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	13
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	39.3
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Field	NTU	65.94
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	43.9
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.001
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00105
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	0.00174
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0019
14	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0056
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	131
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	131
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0039
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.146
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.0114
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00014
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00015
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.00011
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00018
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.035
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0429
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	<0.01
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	<0.01
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000464
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000722
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	51
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	50.3
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	0.28
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00032
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.0002
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	396

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00035
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	0.00078
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	1.93
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.156
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	215
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.166
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.000184
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0136
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0146
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	21.3
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	19.6
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00113
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00672
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.000878
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.000921
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00246
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00303
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	4.79
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0016
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	238
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	0.0013
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.21
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0222
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	0.849
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	0.851
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0199
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.019
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.7
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.86
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	0.861
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	0.898
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.0841
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.0833
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	77.5
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00265
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	260
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.317
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	3.22
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	15.6
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	9.79
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00114
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00114
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	0.00081
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0023
15	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0043
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	129
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	129
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0094
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.111
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00014
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00015
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.00012
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00016
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0358
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0384
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	<0.01
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	<0.01
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000567
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000723
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	53.9
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	52.4
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	0.32
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	0.0001
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00025
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00012
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	421
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00034
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	2.12
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.156
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	227
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.095
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.000077
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0136
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.015
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	22.5
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	21.2
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00135
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00442
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.000936
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.000955
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.0032
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00343
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	5.35
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0015

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	233
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	0.0022
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.23
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0117
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	0.884
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	0.868
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0219
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0217
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.75
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.92
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	0.907
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	0.946
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.0882
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.0846
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	85.4
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	0.00036
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00236
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	283
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.321
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	2.32
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	4.7
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	3.95
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00124
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00124
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	0.00064
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0031
16	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0041
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	123
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	123
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0082
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.101
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.0099
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00012
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00013
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.0002
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0328
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0322
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	<0.01
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	<0.01
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000482
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000773
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	49.4
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	46.4
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	0.19
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00029
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	0.00016
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	352
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00032
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	1.85
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.127
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	198
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.147
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.00012
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0118
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0113
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	18.2
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	17.6
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.0013
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.011
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.000806
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.000819
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.0027
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00306
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	3.67
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.003
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	321
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	0.0034
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.18
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0195
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	0.761
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	0.713
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0159
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0149
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.75
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.72
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	0.822
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	0.738
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.0747
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.0802
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	56.3
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00132

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	254
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.306
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	2.58
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	22
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	5.99
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00101
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00101
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	0.00062
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0024
21	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0042
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	122
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	122
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0028
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0297
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00011
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00013
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.00011
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00013
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0304
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0301
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	<0.01
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	<0.01
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000542
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000592
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	48.8
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	48.1
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	0.17
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00014
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	389
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00039
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	0.00085
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	1.17
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.136
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	200
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.036
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.000069
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0145
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0141
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	19
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	18.5
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00102
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00442
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.000803
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.000766
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.0024
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00266
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	4.46
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0029
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	296
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.26
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0205
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	0.787
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	0.726
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.016
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0173
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.54
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.6
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	0.851
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	1.01
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.0789
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.0816
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	63.2
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	0.00046
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	252
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.422
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	1.2
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	5.7
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	2.57
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00108
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00112
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0026
28	6	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0037
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	125
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	125
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0029
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0606
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00011
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00012
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00013

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0307
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0315
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	<0.01
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	<0.01
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000436
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.000061
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	51.5
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	52.3
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	0.22
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00028
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	384
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00034
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	1.12
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	10.31
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.139
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	213
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.063
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.000076
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0161
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0165
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	20.6
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	19
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00084
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00423
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.000818
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.000828
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00236
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00256
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	4.64
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0014
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	265
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	154.5
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	0.0011
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.16
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.24
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0093
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	0.792
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	0.8
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0185
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0199
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.49
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.71
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	0.862
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	0.88
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.0813
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.0809
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	75.1
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	6.3
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0012
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	279
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.446
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	1.2
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	5.9
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Field	NTU	8.14
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	4.24
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00105
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00118
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0026
5	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0036
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	148
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	148
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0015
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0102
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00013
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00014
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.0001
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0345
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0335
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	<0.01
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	<0.01
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000556
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000661
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	55
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	60.7
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	0.26
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.0001
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	453
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.00035
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	0.8
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	9.84
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.194
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	225
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.013
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0206
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0195
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	21.4
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	23.4
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00082
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00167
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.000956
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.000833
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00284
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00306
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	6.12
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0043
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	351
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	187.8
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.12
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	7.45
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0047
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	0.952
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	0.922
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0249
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0256
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.42
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.49
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	1.06
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	1.03
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.0891
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.0805
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	95.2
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	8.4
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0003
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	300
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.408
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	0.91
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	4
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Field	NTU	1.2
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	0.61
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00135
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00135
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0031
13	7	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0037
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	172
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	5
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	177
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0012
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0083
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00022
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00022
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.0001
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00016
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0742
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0643
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.012
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.011
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.000104
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.000094
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	105
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	99.3
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	0.59
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00014
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	849
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	<0.0002
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	<0.5
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.201
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	457
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.01
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0546
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0515
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	47.3
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	46.5
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00106
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00161
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00137
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00122
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00613
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00566
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	16.5
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0135
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	322
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.38
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0035
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	1.86
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	1.73
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0589
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0578
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	2.04
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	2
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	2.15
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	2.32
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.159
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.146
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	222
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.000017
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0003
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	571
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.402
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	<0.5
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	1.6
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	0.37
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00315
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00292
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0046
9	8	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0056
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	184
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	12.4
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	196
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	<0.001
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0144
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00023
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00024
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00015
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0774
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0687
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.013
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.012
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000816
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000816
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	124
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	120
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	0.94
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00013
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	921
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.0002
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	<0.5
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	9.24
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.182
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	544
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.022
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.058
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0563
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	57
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	54
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00154
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00153
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00138
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.0013
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00856
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00816
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	21.8
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.014
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	305
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	148.4
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.02
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.36
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0047
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	1.81
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	1.81
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0833
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0699
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.85
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	2.15
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	2.34
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	2.32

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.179
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.161
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	286
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	11.3
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	0.00001
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0003
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	714
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	<0.05
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	<0.5
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	8.7
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Field	NTU	0.6
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	2.13
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00308
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00325
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	0.00052
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0043
6	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0043
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	203
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as HCO3)	mg/L	248
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CO3)	mg/L	<1
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as OH)	mg/L	<1
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	203
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0012
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0054
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Anion Sum	meq/L	12.2
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00023
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00026
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.00012
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.0001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0815
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0851
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.013
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.012
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.00007
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.000078
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	125
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	121
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cation - Anion Balance	%	91.8
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cation Sum	meq/L	11.2
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.26
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.0001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	961
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity, Field	uS/cm	673
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	<0.0002
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	0.61
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	%	86.8
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	35.38
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	DMSeO - Dimethylselenoxide	mg/L	<0.00001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.18
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	555
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ion balance (APHA)	%	4.27
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	0.031
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.032
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	0.000106
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0715
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0654
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	58.9
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	60.8
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.0114
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.0108
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00126
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00135
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00736
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.008
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	22.8
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.01
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	312
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.223333333
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.16
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0022
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	1.97
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.1
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Se(IV) - Selenite	mg/L	0.00023
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Se(VI) - Selenate	mg/L	0.0648
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	SeCN - Selenocyanate	mg/L	<0.00001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.07065
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0718
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium Unknown	mg/L	<0.00001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenosulphate	mg/L	<0.00001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	SeMe - Selenomethionine	mg/L	<0.00001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	2.09
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	2.05
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	2.85
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	3.03
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Specific Conductivity	uS/cm	958

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.184
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.193
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	310
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphur (S)-Dissolved	mg/L	117
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphur (S)-Total	mg/L	112
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	9.266666667
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0003
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	773
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	2.23
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	0.67
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	1.7
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	0.38
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00365
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00412
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0036
12	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0051
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	196
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	196
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0042
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0112
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00025
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00026
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00016
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0819
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.0845
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.012
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.014
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000832
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000886
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	132
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	144
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	0.00011
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00015
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1000
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	<0.0002
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	<0.5
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.18
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	575
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.014
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0664
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0648
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	59.7
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	67.3
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00116
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00186
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	0.0000064
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00142
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00153
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00787
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00926
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	24.9
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0119
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	330
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.26
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0025
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	1.96
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.15
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0888
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0825
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	2.01
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	2.14
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	2.62
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	2.74
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.188
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.19
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	311
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0003
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	784
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	<0.05
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	<0.5
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	1
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	0.51
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.0041
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.0043
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0042
13	9	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0043

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	208
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	208
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	<0.001
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0068
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00026
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00024
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	0.00011
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00011
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.1
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.095
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.013
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.015
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000946
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000981
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	147
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	150
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.3
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00022
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1010
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	<0.0002
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	0.95
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	10.27
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.184
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	661
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	<0.01
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.096
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0992
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	71.3
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	68.6
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.0013
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00104
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00134
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00131
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00868
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00887
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	25.7
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0126
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	286
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	169.5
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	0.0013
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.18
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.26
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0025
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.43
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.32
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.115
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0806
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	2.02
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	2
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	3.55
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	3.42
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.206
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.204
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	348
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	8
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0003
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	702
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	<0.05
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	0.9
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	2.1
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Field	NTU	1.79
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	0.5
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.0047
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00452
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0034
12	10	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0045
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	129
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	4.333333333
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	133.3333333
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	<0.001
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.006666667
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.00525
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.000163333
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.000186667
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	<0.0001
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.057366667
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.060933333
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.01
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.011
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	5.43333E-05
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	6.40333E-05
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	82.35
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	93.68333333
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.023333333
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	0.000105
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00011
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	625.6666667
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	0.000626667
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	0.00056
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	<0.5
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.113666667
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	365.5
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	<0.01
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.041266667
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0461
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	38.76833333
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	44.435
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.0008
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00102
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.000776667
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.000833333
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.003953333
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.004253333
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	15.235
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.005366667
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	379.3333333
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	7.35
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0023
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	1.146666667
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	1.273333333
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.068016667
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.051816667
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.256666667
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.333333333
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	1.693333333
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	1.863333333
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.1174
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.127066667
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	241.7666667
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0003
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	513
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.146
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	<0.5
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	1
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	0.296666667
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00247
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.002563333
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0027
3	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0046
11	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	%	84
11	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	11.59
11	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	DMSeO - Dimethylselenoxide	mg/L	<0.00001
11	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
11	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
11	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	133.7
11	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.33
11	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Se(IV) - Selenite	mg/L	0.000203
11	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Se(VI) - Selenate	mg/L	0.0712
11	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	SeCN - Selenocyanate	mg/L	<0.00001
11	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.0708
11	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0758
11	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium Unknown	mg/L	<0.00001
11	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenosulphate	mg/L	<0.00001
11	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	SeMe - Selenomethionine	mg/L	<0.00001
11	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	1.9
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	207
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	207
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	0.0016
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0057
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00022
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00021
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00013
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.108
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.105
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.01
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.01
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000737
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000729
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	169
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	167

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.54
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	0.00013
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00014
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1170
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	<0.0002
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	0.00136
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	<0.5
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	%	82
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	11.68
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.179
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO3)	mg/L	756
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	<0.01
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0936
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0869
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	81.2
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	81.4
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.00134
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00164
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00124
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.00124
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00519
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00568
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	30.4
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0069
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	340
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP, Field	mV	157.7
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Field	pH	8.14
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.08
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0026
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.03
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	1.98
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.115
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.0939
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.91
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.95
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	3.73
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	3.93
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.226
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.221
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	440
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	0.7
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0003
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	874
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	<0.05
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	0.71
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	1.8
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	0.56
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.0046
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00464
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0041
29	11	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0043
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO3)	mg/L	<2
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO3)	mg/L	183
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as HCO3)	mg/L	224
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO3)	mg/L	10.4
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CO3)	mg/L	6.2
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as OH)	mg/L	<1
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO3)	mg/L	194
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	<0.001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	0.0058
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	0.0079
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Anion Sum	meq/L	15
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00023
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00021
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.00012
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.116
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.107
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	<0.01
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	<0.01
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.25
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000721
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000795
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	164
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	157
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cation - Anion Balance	%	100
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cation Sum	meq/L	15
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.59
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	0.00014
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.00013
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	1190
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity, Field	uS/cm	732
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	<0.0002
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	0.56
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	%	86.9
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Oxygen, Field	mg/L	12.18

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	DMS ₂ SeO - Dimethylselenoxide	mg/L	<0.00001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.17
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO ₃)	mg/L	741
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ion balance (APHA)	%	<0.01
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	0.06
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	0.077
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0857
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.0841
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	80.6
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	85.3
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.0203
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.0224
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.00122
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.0012
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.00575
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00581
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	29.8
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.0132
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	400
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	8.33
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	0.0091
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	2.1
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	2.17
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Se(IV) - Selenite	mg/L	0.000235
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Se(VI) - Selenate	mg/L	0.0901
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	SeCN - Selenocyanate	mg/L	<0.00001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.09605
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.09266667
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium Unknown	mg/L	<0.00001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenosulphate	mg/L	<0.00001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	SeMe - Selenomethionine	mg/L	<0.00001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.82
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.88
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	3.61
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	3.83
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Specific Conductivity	uS/cm	1336
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.219
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.208
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	428
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphur (S)-Dissolved	mg/L	150
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphur (S)-Total	mg/L	148
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Temperature, Field	deg c	1.3
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0003
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	888
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	0.616
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	<0.5
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	1.9
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	0.71
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.00509
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00473
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.0028
6	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.0038
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Acidity (as CaCO ₃)	mg/L	<2
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Bicarbonate (as CaCO ₃)	mg/L	131.3333333
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Carbonate (as CaCO ₃)	mg/L	6.06666667
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Hydroxide (as CaCO ₃)	mg/L	<1
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Alkalinity, Total (as CaCO ₃)	mg/L	103
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Dissolved	mg/L	<0.001
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Aluminum (Al)-Total	mg/L	<0.003
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Ammonia, Total (as N)	mg/L	<0.005
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Dissolved	mg/L	0.00019
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Antimony (Sb)-Total	mg/L	0.00012
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Dissolved	mg/L	<0.0001
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Arsenic (As)-Total	mg/L	0.0001
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Dissolved	mg/L	0.0668
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Barium (Ba)-Total	mg/L	0.07036667
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Beryllium (Be)-Total	mg/L	<0.00002
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bismuth (Bi)-Total	mg/L	<0.00005
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Dissolved	mg/L	0.0105
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Boron (B)-Total	mg/L	0.01
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Bromide (Br)	mg/L	<0.05
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Dissolved	mg/L	0.0000573
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cadmium (Cd)-Total	mg/L	0.0000552
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Dissolved	mg/L	112.6833333
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Calcium (Ca)-Total	mg/L	103.35
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chloride (Cl)	mg/L	1.043333333
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Dissolved	mg/L	<0.0001
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Chromium (Cr)-Total	mg/L	0.000176667
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Cobalt (Co)-Total	mg/L	<0.0001
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Conductivity	uS/cm	810.6666667
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Dissolved	mg/L	<0.0002
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Copper (Cu)-Total	mg/L	<0.0005
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Dissolved Organic Carbon	mg/L	<0.5
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Fluoride	mg/L	0.093
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Hardness - Dissolved (as CaCO ₃)	mg/L	497.1666667
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Dissolved	mg/L	<0.01
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Iron (Fe)-Total	mg/L	<0.01
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Dissolved	mg/L	<0.00005
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lead (Pb)-Total	mg/L	<0.00005
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Dissolved	mg/L	0.0591
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Lithium (Li)-Total	mg/L	0.056733333
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Dissolved	mg/L	52.435

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Magnesium (Mg)-Total	mg/L	55.36833333
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Dissolved	mg/L	0.000936667
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Manganese (Mn)-Total	mg/L	0.00102
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Mercury (Hg)-Total	mg/L	<0.000005
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Dissolved	mg/L	0.000863333
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Molybdenum (Mo)-Total	mg/L	0.000575
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Dissolved	mg/L	0.003756667
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nickel (Ni)-Total	mg/L	0.00399
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrate (as N)	mg/L	15.4025
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Nitrite (as N)	mg/L	0.002733333
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	ORP	mV	376.3333333
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Orthophosphate	mg/L	<0.001
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	pH, Lab	pH	7.42
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Phosphorus (P)-Total	mg/L	<0.002
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Dissolved	mg/L	1.28
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Potassium (K)-Total	mg/L	1.41
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Dissolved	mg/L	0.072683333
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Selenium (Se)-Total	mg/L	0.063016667
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Dissolved	mg/L	1.293333333
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silicon (Si)-Total	mg/L	1.27
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Dissolved	mg/L	<0.00001
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Silver (Ag)-Total	mg/L	<0.00001
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Dissolved	mg/L	2.536666667
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sodium (Na)-Total	mg/L	2.676666667
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Dissolved	mg/L	0.151733333
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Strontium (Sr)-Total	mg/L	0.140733333
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Sulphate	mg/L	292.7666667
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Thallium (Tl)-Total	mg/L	<0.00001
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Dissolved	mg/L	<0.0001
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Tin (Sn)-Total	mg/L	<0.0001
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Titanium (Ti)-Total	mg/L	<0.0003
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Dissolved Solids	mg/L	596.6666667
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Kjeldahl Nitrogen	mg/L	<0.05
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Organic Carbon	mg/L	<0.5
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Total Suspended Solids	mg/L	<1
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Turbidity, Lab	NTU	0.18
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Dissolved	mg/L	0.003663333
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Uranium (U)-Total	mg/L	0.00316
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Dissolved	mg/L	<0.0005
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Vanadium (V)-Total	mg/L	<0.0005
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Dissolved	mg/L	0.002866667
15	12	2022	FR_FRNTP (RG_FOUSH)	FR_FRNTP	Zinc (Zn)-Total	mg/L	0.003333333
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	4.9
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	226
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	226
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0013
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0056
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0104
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00023
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00024
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	0.00017
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	<0.0001
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0965
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0934
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.016
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.012
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000801
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000956
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	148
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	152
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	1.79
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	0.00012
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	<0.0001
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.0001
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1170
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity, Field	uS/cm	1269
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	<0.0002
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.01
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	85
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	623.4
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.13
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	660
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.014
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.032
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0792
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0837
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	70.6
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	67.4
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0153
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0156
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.0000005
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00135
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00141
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00648
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00652
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	29.7
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0069
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	449
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	129.5
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.1
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.25
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0028
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.32
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.28
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0926

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0755
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.96
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.94
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.5
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.59
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.224
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.233
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	383
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	0.2
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	862
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.389
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	0.96
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	1
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.26
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00439
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00469
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0036
8	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0035
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	206
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as HCO3)	mg/L	251
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	5.2
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CO3)	mg/L	3.1
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as OH)	mg/L	<1
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	211
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0011
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	<0.003
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0053
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Anion Sum	meq/L	15
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00024
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00024
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00013
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.102
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0962
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.012
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.012
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000808
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000858
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	154
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	159
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cation - Anion Difference	%	3.45
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cation - Anion Ratio	%	93.3
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cation Sum	meq/L	14
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	1.89
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	<0.0001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1170
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity, Field	uS/cm	785
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	<0.0002
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.2
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	86.4
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	12.44
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	DMSeO - Dimethylselenoxide	mg/L	<0.00001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.115
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	689
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.026
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.039
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0792
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0828
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	74
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	72.4
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0164
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0168
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.0000005
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00144
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00154
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00615
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00603
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	29.9
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0054
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	342
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.16
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.31
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0026
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.38
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.25
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Se(IV) - Selenite	mg/L	0.000245
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Se(VI) - Selenate	mg/L	0.0697
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	SeCN - Selenocyanate	mg/L	<0.00001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.08433333
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.08215
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium Unknown	mg/L	<0.00001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenosulphate	mg/L	<0.00001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	SeMe - Selenomethionine	mg/L	<0.00001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	2.02

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.01
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.78
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.56
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Specific Conductivity	uS/cm	1476
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.23
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.24
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	414
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphur (S)-Dissolved	mg/L	135
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphur (S)-Total	mg/L	132
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	0.5
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	879
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.285
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.02
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	1
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.31
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00452
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.0048
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0031
18	1	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	<0.003
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	219
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	219
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	<0.001
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0041
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00022
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00024
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00012
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0958
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0996
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.011
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.013
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000894
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000853
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	168
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	154
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	1.96
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00028
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1190
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00029
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	0.58
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	81.9
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	11.56
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.238
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	727
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.019
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.039
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0834
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0794
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	74.7
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	71.9
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0167
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.017
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.0000005
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00141
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00144
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00514
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00542
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	28.6
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.007
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	473
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	131.8
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.15
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.26
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0026
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.29
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.31
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0829
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0825
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.97
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.12
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.67
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.69
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.23
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.231
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	375
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	1.1
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	917
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	<0.05
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	0.53
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	1.8
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	0.03
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.34
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.0045
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.0049
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0025
9	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.003
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	213
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as HCO3)	mg/L	260
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	6.2
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CO3)	mg/L	3.7
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as OH)	mg/L	<1
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	219
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.001
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0037
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0143
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Anion Sum	meq/L	14.4
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00028
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00025
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00011
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.1
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0961
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.013
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.012
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000924
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000865
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	162
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	154
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cation - Anion Difference	%	0.346
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cation - Anion Ratio	%	101
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cation Sum	meq/L	14.5
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	2.27
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.0001
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	0.0001
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00012
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1190
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity, Field	uS/cm	768
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00026
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	0.84
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	83.7
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	11.5
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	DMS ₂ O - Dimethylselenoxide	mg/L	<0.00001
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.146
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	713
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.023
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.05
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0873
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0779
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	74.9
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	71.6
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0178
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0184
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.0000005
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00167
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00158
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00566
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00577
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	29.6
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0172
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	493
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	0.0012
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.01
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.32
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.003
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.41
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.33
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Se(IV) - Selenite	mg/L	0.000297
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Se(VI) - Selenate	mg/L	0.0818
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	SeCN - Selenocyanate	mg/L	<0.00001
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.080733333
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.080733333
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium Unknown	mg/L	<0.00001
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenosulphate	mg/L	<0.00001
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	SeMe - Selenomethionine	mg/L	<0.00001
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	2
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.93
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.62
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.63
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Specific Conductivity	uS/cm	1366
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.24
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.226
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	376
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphur (S)-Dissolved	mg/L	134
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphur (S)-Total	mg/L	140
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	2.1
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	863
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	<0.05
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	0.85
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	1.5
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.64
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00497
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00492
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0033
15	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0048
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	2.8
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	208
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	208
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	<0.001
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0081
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0075
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00026
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00026
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	0.00011
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.0001
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.11
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0975
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.013
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.011
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000811
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000943
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	159
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	153
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	2.22
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00014
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00013
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1190
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	<0.0002
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	0.82
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	82.2
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	11.83
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.14
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	714
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.02
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.047
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0908
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0759
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	77
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	76.8
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0172
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0175
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.0000005
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00155
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00146
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00574
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00643
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	31
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0107
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	428
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	185.1
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	0.001
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.03
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.12
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.003
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.92
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.29
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.088
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0894
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	2.07
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.92
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	4.1
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.49
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.242
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.225
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	404
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	0.4
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	944
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.217
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	0.78
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	1.3
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.35
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00466
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00489
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0032
28	2	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0037
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	215
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	215

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	<0.001
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0112
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00022
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00022
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	<0.0001
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0946
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.096
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.011
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.013
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.000074
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000764
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	154
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	165
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	2.19
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	0.00011
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00016
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1200
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	<0.0002
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	<0.5
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	85.9
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	11.75
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.125
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	702
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.019
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.053
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0821
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0859
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	77.1
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	73.7
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0178
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0172
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.0000005
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00136
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00449
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00532
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00531
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	30.1
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0076
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	403
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	186.6
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	6.68
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.22
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0032
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.36
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.28
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0851
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0787
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.88
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.87
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.76
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.61
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.223
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.226
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	406
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	2.2
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	932
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	<0.05
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	0.75
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	1.3
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	1.71
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.94
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00457
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00487
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0021
3	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.003
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	4.5
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	208
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	208
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0038
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0327
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.109
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00024
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00025
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00011
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0991
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0996
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.011
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.013
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000753

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000867
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	169
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	162
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	3.78
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	0.0001
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	<0.0002
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00013
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1170
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity, Field	uS/cm	1137.1
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00031
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	0.76
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	94.65
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	9.75
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.156
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	759
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.021
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.111
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.000058
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0873
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0938
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	81.8
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	80
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0197
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0231
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	0.0000064
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00137
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00153
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00534
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00574
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	30.3
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0164
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	388
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	141
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.27
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.11
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0059
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.38
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.55
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0923
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0868
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	2
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.14
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.55
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	4.04
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.228
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.242
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	413
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	5.93
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00057
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	897
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	<0.05
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	2.69
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	7
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	5.57
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00477
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00506
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0039
14	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0048
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	3.3
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	219.5
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as HCO3)	mg/L	275
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CO3)	mg/L	<1
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as OH)	mg/L	<1
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	219.5
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.003
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0592
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0079
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Anion Sum	meq/L	15.4
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00024
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00026
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00013
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.1005
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.09935
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.011
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.012
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.00007605
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.00008565
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	148.5
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	158.5
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cation - Anion Balance	%	90.2
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cation Sum	meq/L	13.9
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	2.11
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	0.000105
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.000185
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00013
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1190
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity, Field	uS/cm	1154
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00026

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	0.755
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	89.2
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.88
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	DMSeO - Dimethylselenoxide	mg/L	<0.00001
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.1365
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	677.5
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ion balance (APHA)	%	5.12
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.0195
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.1105
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.00007
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0798
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.085
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	74.4
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	75.2
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0209
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0232
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	0.0000052
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.001395
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.001515
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00551
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00578
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	29.6
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.00905
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	471.5
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	113.9
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.095
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.08
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0057
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.375
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.45
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Se(IV) - Selenite	mg/L	0.000232
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Se(VI) - Selenate	mg/L	0.0744
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	SeCN - Selenocyanate	mg/L	<0.00001
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.07845
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.080333333
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium Unknown	mg/L	<0.00001
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenosulphate	mg/L	<0.00001
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	SeMe - Selenomethionine	mg/L	<0.00001
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.875
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.175
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	0.0000125
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.63
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.795
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Specific Conductivity	uS/cm	1152
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.2175
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.235
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	405
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphur (S)-Dissolved	mg/L	138
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphur (S)-Total	mg/L	143
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	3.05
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00154
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	945
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.22
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.245
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	5.45
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	2.145
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.004535
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.004955
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	0.00066
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.00375
15	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.00435
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	3.55
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	222.5
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	222.5
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0014
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0791
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.10525
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00022
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00026
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.000175
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0851
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0982
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.012
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.0125
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000631
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000917
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	151
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	165.5
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	3.02
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.000265
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00018
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1190
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity, Field	uS/cm	1069.4
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00037
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	0.79
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	88.05
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.575

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.14
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	653
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.1475
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.0001305
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.07895
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.08825
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	67
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	78.5
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.01705
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0227
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	0.00000123
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00137
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00151
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.004665
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.0058
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	29.1
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.01165
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	481
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	122.2
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.27
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.11
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.02185
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.11
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.465
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.079
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.08575
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.79
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.16
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.305
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.81
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.218
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.2315
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	401.5
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	3.49
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	0.000011
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0006
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	887.5
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	<0.05
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	4.49
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	11.45
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	6.76
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00447
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00463
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	0.00057
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0027
16	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.01225
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	3.8
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	218
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	218
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0025
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.1671
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.00695
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.000245
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.000295
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00022
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0932
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.1048
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.0115
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.012
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000763
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0001225
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	148
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	144
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	2.515
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	0.000125
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.000375
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	0.00011
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00027
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1185
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity, Field	uS/cm	1446.95
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00079
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	0.000665
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.1
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	88.085
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.705
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.162
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	665.5
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.0105
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.274
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.0002625
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.07515
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0765
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	71.85
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	71.35
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.01805
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.02445
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	0.0000089
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.001585
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00159
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.005215

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.006015
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	28.45
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.02065
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	483.5
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	128.95
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	0.00125
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.29
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.05
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0224
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.36
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.39
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.08785
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0837
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.845
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.27
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	0.0000105
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.81
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.9
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.219
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.233
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	415.5
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	3.02
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	0.000014
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.003485
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	1028
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.204
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	9.325
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	19.65
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	13.4
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.004595
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.005125
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	0.001065
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.00395
17	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.006
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	4
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	217
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	217
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.002
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.08865
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.00735
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.000265
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.000305
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.000215
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.09765
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.1035
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.0115
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.0135
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.00007565
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000105
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	146.5
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	169.5
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	2.495
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.000265
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	0.000105
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.000205
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1195
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity, Field	uS/cm	1410.85
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.000235
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	0.825
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	88.08
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.6
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.1585
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	680.5
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.157
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.000138
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0815
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0906
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	76.35
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	81.3
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0191
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.02315
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	0.00000103
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00189
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.001695
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00529
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.005995
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	29
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.01345
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	466.5
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	146.75
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.145
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.125
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.01065
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.445
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.53
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.08755
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0888
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.955
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.28
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.935
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	4.105
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.229
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.249
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	415.5
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	3.38
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	0.000011
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00141
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	886
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.2205
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	2.275
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	11.75
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	8.985
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.004715
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.005015
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	0.000685
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.00355
18	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0044
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	2
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	226
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	226
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0016
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.031
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0067
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00025
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00028
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00012
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0964
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0943
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.012
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.013
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000827
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000942
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	148
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	154
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	6.27
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00016
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00014
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1190
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity, Field	uS/cm	1229
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	<0.0002
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.08
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	81.9
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.84
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.133
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	666
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.011
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.116
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.000069
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0828
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0871
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	72.1
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	72.4
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.018
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0204
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	0.0000069
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00165
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00162
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00524
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.0056
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	29.9
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0195
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	457
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	123.8
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.27
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.19
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0072
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.38
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.43
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0892
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0815
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.86
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.06
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.87
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.94
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.222
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.228
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	418
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	3.5
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00077
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	919
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.276
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.12
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	7.8
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	3.92

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00479
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00503
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0033
19	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0035
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	214
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	214
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0028
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0447
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.009
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00028
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.0003
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00016
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.093
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0948
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.012
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.014
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000765
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000102
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	145
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	153
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	2.69
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.0002
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	0.00011
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00019
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1200
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity, Field	uS/cm	1137
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	<0.0002
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.08
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	82
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	11.29
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.137
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	645
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.162
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.000124
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0796
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0867
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	68.8
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	73
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0178
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0212
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	0.00000098
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00184
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00177
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00554
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00613
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	28.3
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0133
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	469
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	132.7
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.26
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.19
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0113
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.39
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.5
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0868
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.081
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.9
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.1
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.8
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.98
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.216
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.228
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	389
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	2
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	0.000011
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0006
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	885
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	<0.05
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.06
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	12.3
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	11.5
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00455
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00488
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0032
20	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0061
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	2.8
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	213
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	213
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.002
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0279
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0137
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00028
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.0003
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00012
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0934
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0944
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.012
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.013
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000821
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000904
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	146
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	149
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	2.68
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00015
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	0.00011
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00016
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1180
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity, Field	uS/cm	1107.5
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	<0.0002
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	0.86
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	95.27
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.02
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.182
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	646
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.016
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.091
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.000056
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0798
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.079
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	68.4
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	70.6
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0174
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0192
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	0.0000072
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00173
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.0018
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00553
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00593
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	29.6
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0187
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	453
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	113.5
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.26
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.08
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0059
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.43
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.46
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0882
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0805
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.8
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.95
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.62
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.64
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.221
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.221
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	412
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	5.06
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0006
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	917
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	<0.05
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.61
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	6.3
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	4.84
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00483
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00481
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0037
21	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0045
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	4.6
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	218
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	218
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0014
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.037
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0207
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00028
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00032
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00015
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0887
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0957
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.012
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.012
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.000078
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000101
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	146
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	150
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	2.26
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00025

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	0.00012
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00017
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1160
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity, Field	uS/cm	1144.2
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	<0.0002
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	0.00061
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	<0.5
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	94.87
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.79
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.17
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	648
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.012
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.085
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.000073
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0764
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0762
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	68.8
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	74.8
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0168
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0191
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.0000005
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00182
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00182
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00573
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00638
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	28.5
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0223
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	484
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	119.2
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.22
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.14
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0057
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.28
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.39
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0805
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0814
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.82
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.02
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.48
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.74
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.215
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.227
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	393
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	2.43
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	0.000011
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00054
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	918
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.394
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.26
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	4.3
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	4
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00452
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00508
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0035
22	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0064
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	4.4
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	216
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	216
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	<0.001
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0403
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0232
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00034
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00035
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	0.00013
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00022
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0966
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0968
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.012
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.014
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000959
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000952
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	143
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	152
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	2.23
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	0.0001
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00017
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	0.00017
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00021
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1120
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	<0.0002
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	0.542
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	93.34
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.02
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.176
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	656
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.013
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.097
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0813
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0796
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	72.7

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	72.5
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0181
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0192
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	0.0000062
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00188
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00196
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00673
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00702
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	27.5
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.024
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	468
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	172.8
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.25
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.15
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0173
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.42
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.41
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0931
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0858
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	2.03
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.63
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.62
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.222
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.217
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	394
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	4.31
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	0.000013
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	0.00013
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00084
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	868
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.427
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.35
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	4.5
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	3.34
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00427
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00424
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	0.00069
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.004
23	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0041
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	202
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	202
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0035
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.118
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0871
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00079
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.0008
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	0.00018
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00028
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.112
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.133
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.012
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.013
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.000125
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000156
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	137
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	143
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	1.94
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00028
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	0.0005
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00062
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1020
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00036
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	0.00063
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.19
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	83.6
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	11.13
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.174
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	594
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.124
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.000114
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0605
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0606
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	61.3
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	65.4
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0104
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0156
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	0.0000009
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00397
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00401
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00976
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.0106
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	23.3
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0623
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	455
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	168.2
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	0.0016
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.36
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.23
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0105
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.43

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.58
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0831
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0785
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	2.1
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.33
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	2.56
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	2.62
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.21
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.216
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	325
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	3.3
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	0.000015
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	0.000019
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00289
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	755
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	<0.05
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.74
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	6.6
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	5.7
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	6.26
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00369
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00375
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	0.00077
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0051
30	3	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0076
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	206
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	206
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0018
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0313
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0856
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00074
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00081
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	0.00014
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00018
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.1
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.107
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.011
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.013
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.000127
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000147
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	137
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	135
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	2.08
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00018
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	0.0008
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00088
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1100
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00027
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.39
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	83.7
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	11.73
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.181
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	602
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.065
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0683
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0744
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	63.1
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	68.2
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0106
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0131
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.0000005
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00393
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00406
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.0124
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.0139
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	26
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0797
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	418
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	156.7
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.22
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.24
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0066
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.35
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.55
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0822
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.09
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.9
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.09
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	2.69
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	2.99
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.229
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.251
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	360
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	1.4
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	0.000016
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	0.000016
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00049
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	761
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	<0.05
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.65
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	4.3
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	1.95
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00389
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00403
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0061
5	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0079
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	203
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	203
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0035
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0226
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0358
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00066
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00069
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	0.00012
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00014
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0929
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0999
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.012
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.014
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.000171
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000198
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	146
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	149
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	1.66
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00013
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	0.0005
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00054
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1130
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00032
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.4
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	85.5
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	11.76
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.165
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	634
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.013
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.054
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0773
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0823
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	65.4
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	69.7
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0109
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0127
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	0.0000007
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00331
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00329
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.0126
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.0136
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	27.9
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0395
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	456
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	146.2
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.34
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.28
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0046
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.66
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.66
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0911
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0965
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.83
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.06
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	2.94
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.01
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.236
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.24
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	384
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	2.1
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	0.000013
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	0.000016
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00037
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	812
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.391
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.46
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	4.7
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	2.42
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.89
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00421
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00505
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0085
12	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0092
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	195
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	195
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0015
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0139
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00032
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00033
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00012
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0798
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0889
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.012
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.013
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.000156
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000169
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	145
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	157
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	2.12
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00012
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	0.00018
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00021
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1160
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00026
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	0.95
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	83.7
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.78
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.168
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	633
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.047
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0861
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0869
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	65.7
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	73.5
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00905
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0111
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00168
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00185
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00983
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.0108
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	29.7
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.018
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	390
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	194.9
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.31
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.2
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0038
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.39
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.52
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.104
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.11
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.66
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.91
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.11
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.32
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.214
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.218
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	414
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	4.5
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	0.000011
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	0.000012
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	875
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.496
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.02
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	1.5
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	1.55
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.64
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00472
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00464
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0068
18	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0082
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	172
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	172
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0072
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.11
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0107
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00028
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00031
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	0.0001
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00016
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0633
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0726
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.01
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.01
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.000192
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000237
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	112
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	116
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.91
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00027
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	0.00074
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00086
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	865
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00045
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	0.00069
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	2.84
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	11.51
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.148
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	480
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.015
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.105
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.000079
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0447
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0446
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	48.7
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	51.8
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0106
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0145
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00155
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00166
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.0117
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.0126
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	20
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0052
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	395
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	144.2
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.16
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.28
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0089
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	1.88
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.01
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0762
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0751
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.82
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.12
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	1.86
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	1.95
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.144
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.15
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	279
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	2.8
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	0.000011
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	0.000015
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00278
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	632
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.143
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	2.95
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	7.3
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	3.97
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	3.82
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00299
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00309
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	0.00067
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0094
27	4	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0124
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	168
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	168
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0043
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.111
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00022
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00024
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	0.00011
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00016
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0549
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0696
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.000153
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000182
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	101
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	97.3
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.76
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00025
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	0.00025
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00041
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	790
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00044
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	0.00061
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.7
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	11.08
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.167
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	442
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.156

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.000115
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0344
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0324
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	46.2
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	41.8
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00638
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.014
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00155
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00284
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.008
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00846
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	16.1
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0067
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	255
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	120.6
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.3
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.27
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.018
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	1.64
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	1.66
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0633
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0587
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.69
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	1.59
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	1.55
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.137
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.141
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	221
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	4.3
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	0.000015
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00132
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	529
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.089
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	2.88
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	14.4
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	4.5
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	2.01
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00262
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00267
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	0.00061
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0065
4	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0089
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	170
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	3.2
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	173
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0032
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0751
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00024
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00027
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	0.00011
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00027
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0513
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0795
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.000151
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000281
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	98.7
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	106
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.79
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00026
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	0.00021
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00082
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	808
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.0004
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	0.00077
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.58
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	11.02
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.17
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	434
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.298
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.00029
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0396
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0393
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	45.6
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	47.4
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00599
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0408
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.0022
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.0013
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.0083
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.0103
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	17.9
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0119
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	441
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	152.6

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.14
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.34
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0121
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	1.79
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	1.82
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0672
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0615
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.61
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.71
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	1.72
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	1.67
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.132
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.134
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	233
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	5.2
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	0.000017
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00111
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	425
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	<0.05
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	2.09
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	6.6
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	1.72
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	1.32
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.0028
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00283
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	0.0008
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0059
10	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0132
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	162
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	5.8
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	168
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0023
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.039
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00019
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.0002
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00014
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0514
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.051
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.000107
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000122
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	88.1
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	90.3
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.6
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00018
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00015
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	713
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00032
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.54
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	11.09
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.145
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	380
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.084
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.000062
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0328
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0339
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	38.8
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	37.9
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00416
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0176
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00126
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.0015
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.0056
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00607
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	13.9
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0053
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	317
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	117.6
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.55
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.33
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0051
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	1.61
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	1.55
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0544
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.056
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.56
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.78
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	1.57
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	1.58
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.125
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.125
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	187
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	5.7

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00047
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	511
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.488
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.64
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	2.8
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	2.46
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.7
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00247
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00242
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0044
19	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0053
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	154
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	1.2
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	155
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0021
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0298
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00017
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00019
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00012
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0492
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0475
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000786
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000914
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	81.2
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	78.2
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.56
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00017
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.0001
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	628
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00028
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.93
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.74
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.154
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	351
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.047
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0273
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0268
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	36
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	35.5
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00335
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.00537
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00111
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00107
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00401
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00436
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	10.2
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0039
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	380
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	178
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.51
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.29
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0062
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	1.3
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	1.3
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.04
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0417
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.47
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.66
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	0.00001
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	1.38
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	1.46
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.12
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.119
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	152
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	5.8
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00041
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	441
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.472
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.9
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	4.9
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	1.72
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.96
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00203
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00213
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0029
26	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0048

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	135
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	6.6
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	141
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0023
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0426
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00014
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00016
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	0.0001
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00014
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.041
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0494
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000589
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000959
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	67.4
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	67.2
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.32
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00023
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00016
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	546
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00022
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.58
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	87.8
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.73
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.139
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	286
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.104
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.000101
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.021
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0219
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	28.5
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	29
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00231
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.00795
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.000981
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.000998
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00298
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00386
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	6.5
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.003
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	337
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	143.5
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	0.0012
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.25
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.43
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0116
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	1.04
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	1.12
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0348
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0342
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.58
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.8
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	1.12
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	1.18
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.107
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.108
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	109
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	6.7
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0018
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	375
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.502
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.83
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	8.7
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	2.06
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00164
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00168
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	0.00053
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0026
27	5	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0056
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	146
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	146
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0039
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0249
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00014
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00019
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00012
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0409
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.041
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000578
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000528
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	57.7
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	62.2
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.68
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00014
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	421
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00034
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.66
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.52
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.152
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	250
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.039
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0172
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0176
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	25.7
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	25.2
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00248
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.00454
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.000873
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.000944
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00276
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00285
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	6.59
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	<0.005
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	274
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	84.6
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.2
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.12
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0054
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	0.94
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	0.926
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0255
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.024
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.55
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.65
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	1.13
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	1.05
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.095
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.0945
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	105
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	7.5
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.0005
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	333
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.525
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.74
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	3.2
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	1.7
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	1.29
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00145
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00138
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0033
1	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0039
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	130
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	130
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0037
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.212
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0071
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00012
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00013
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.0003
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0358
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.047
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	0.000027
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.000037
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000146
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	55
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	58.5
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.25
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00051
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00044
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	393
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00028
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	0.0013
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.68
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.8
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.139

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	215
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.453
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.000432
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.016
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0142
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	18.8
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	20.6
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00178
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0325
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.000811
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.000688
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00199
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00376
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	3.9
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0015
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	254
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	178
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.24
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.18
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0211
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	0.83
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	1.04
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0167
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0163
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.63
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.97
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	0.879
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	0.986
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.0899
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.0814
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	66.7
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	5.3
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	0.000014
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00198
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	239
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.411
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	2.05
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	13.5
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	4.43
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	1.67
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00108
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00112
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	0.00119
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.003
8	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0096
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	122
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	122
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0073
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0918
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00011
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00011
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00016
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0296
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0326
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000329
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000591
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	47.1
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	44.6
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.23
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00026
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00012
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	343
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00029
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.74
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.42
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.134
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	182
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.011
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.12
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.000101
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0132
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0126
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	15.7
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	16.4
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00185
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0102
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	0.0000052
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.000696
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.000688
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00167
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00211
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	3.58

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0018
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	305
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	309.8
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	0.0034
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.12
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.13
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0156
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	0.769
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	0.725
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0124
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0134
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.58
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.8
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	0.86
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	0.809
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.0752
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.0774
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	57.3
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	4.4
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00102
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	219
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.307
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.74
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	12.8
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	0.96
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	2.94
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.000966
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.000958
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0094
13	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0031
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	130
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	130
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0067
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.194
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00011
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00013
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	0.00011
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00021
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0338
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0362
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000449
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000725
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	45.9
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	49
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.25
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00044
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	0.00018
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	367
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00031
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	0.00096
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.34
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.41
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.126
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	186
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.283
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.000176
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0118
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0125
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	17.3
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	18.2
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00203
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0141
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.000748
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.000867
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00242
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.0032
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	3.8
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0025
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	231
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	145.3
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	0.0016
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	7.97
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.17
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0288
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	0.766
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	0.83
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0172
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0168
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.55
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.03
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	0.771
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	0.78
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.0736

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.0844
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	59.3
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	6.7
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	0.000012
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.003
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	239
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.286
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.57
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	16.6
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	8.02
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	5.72
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.000995
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00106
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	0.00091
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0021
21	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0061
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	136
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as HCO3)	mg/L	165
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CO3)	mg/L	<1
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as OH)	mg/L	<1
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	136
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0029
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0305
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Anion Sum	meq/L	4.83
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00013
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00013
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00013
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0327
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.034
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000556
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000066
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	54.2
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	53.6
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cation - Anion Balance	%	93.4
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cation Sum	meq/L	4.51
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.3
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00011
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	422
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity, Field	uS/cm	354.1
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00023
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.45
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	85.1
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	9.75
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	DMSeO - Dimethylselenoxide	mg/L	<0.00001
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.156
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	222
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ion balance (APHA)	%	3.43
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.04
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0164
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0164
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	21.1
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	21.4
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0022
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.00499
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.000913
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.000851
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00274
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00288
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	5.39
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0033
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	394
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	0.0012
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	7.96
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.17
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0114
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	0.895
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	0.899
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Se(IV) - Selenite	mg/L	0.000104
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Se(VI) - Selenate	mg/L	0.0192
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	SeCN - Selenocyanate	mg/L	<0.00001
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.018566667
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0189
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium Unknown	mg/L	<0.00001
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenosulphate	mg/L	<0.00001
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	SeMe - Selenomethionine	mg/L	<0.00001
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.58
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.63
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	0.987
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	0.984
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Specific Conductivity	uS/cm	505
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.0871

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.087
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	82.3
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphur (S)-Dissolved	mg/L	27.8
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphur (S)-Total	mg/L	27.8
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	9.6
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00051
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	297
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	1.25
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.51
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	4.7
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	1.74
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00129
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00128
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0025
27	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0031
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	132
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	132
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0027
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0509
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00011
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00012
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00015
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0314
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0324
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000516
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000627
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	50.6
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	51.2
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.26
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	0.00014
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00024
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	403
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00022
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	0.75
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.53
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.148
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	208
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.078
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.000065
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.015
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0147
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	19.8
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	20
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00182
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.00641
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00078
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.000802
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00234
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00261
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	4.62
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0013
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	324
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	147.2
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	0.0023
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.03
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.33
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0111
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	0.825
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	0.82
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0178
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0173
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.5
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.6
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	0.899
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	0.876
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.0808
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.0842
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	71.5
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	5.9
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0009
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	222
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.476
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.15
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	7.7
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	3.32
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	3.21
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00108
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00114

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.004
28	6	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0037
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	138
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	138
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0018
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0147
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0072
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00013
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00013
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00013
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0326
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0341
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000549
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000504
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	55.3
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	56.8
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.38
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00015
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	435
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.0002
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.51
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.22
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.157
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	227
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.02
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0203
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0201
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	21.5
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	21.8
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0023
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0036
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.000875
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.000857
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.0024
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00254
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	5.76
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0018
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	265
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	308
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.29
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.25
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0054
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	0.934
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	0.94
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0234
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0237
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.62
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.63
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	1.02
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	1.04
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.0862
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.0877
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	85.9
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	6.6
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	283
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.438
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.47
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	1.9
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	0.64
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.42
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00136
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00137
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0022
4	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	<0.003
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	128
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	128
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.003
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0473
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00013
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00014
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.031
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0316

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000556
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000062
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	54.5
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	52.4
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.29
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00021
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	396
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00026
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.28
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	83.8
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.01
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.148
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	223
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.059
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.000066
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0169
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.018
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	21.1
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	20.1
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00221
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.00501
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.000832
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.000866
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00251
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00262
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	4.83
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0015
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	367
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	125.8
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.3
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.22
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0105
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	0.844
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	0.864
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0214
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0196
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.54
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.64
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	1
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	0.993
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.084
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.0805
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	74.6
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	7.6
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00061
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	259
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.342
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.57
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	5.2
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	2.99
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00124
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.0012
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0024
5	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0036
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	132
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	132
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0026
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0235
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0074
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	<0.0001
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00013
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00013
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0323
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0322
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000472
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000571
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	58.3
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	54.2
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.3
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00014
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	411
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00025

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.15
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	85.8
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.7
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.144
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	238
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.028
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.019
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0194
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	22.4
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	20.8
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0023
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.00387
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.000854
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.000821
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00272
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00259
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	5.17
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0011
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	423
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	155.6
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	0.001
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.01
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.19
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.041
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	0.901
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	0.884
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0237
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0205
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.56
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.56
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	1.04
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	1.01
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.085
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.0819
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	78.5
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	5.8
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00033
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	269
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.46
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.94
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	14.5
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	2.26
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	3.7
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.0013
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00128
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0027
6	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0032
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	142
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	142
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0023
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0225
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00013
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00014
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.0001
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0341
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0344
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000459
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000598
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	55.2
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	55.6
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.35
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	0.00011
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00013
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	490
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00031
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	0.00193
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.06
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	80
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	8.86
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.163
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	229
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.014
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.026
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	0.000067
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0206
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0203
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	22.1
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	22.2
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0018
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.00281
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.000886
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.000901
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00534
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00265
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	5.8
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0032
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	334
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	153
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	0.0016
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.2
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.35
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0046
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	0.94
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	0.917
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0235
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.024
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.55
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.62
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	1.07
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	1.08
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.0843
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.089
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	84.6
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	10.8
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	268
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.417
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.69
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	3.1
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.67
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00126
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.0013
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0032
7	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0049
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	122
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	11
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	134
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0047
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0166
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00011
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00015
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00011
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0324
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0322
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000474
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000554
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	51.9
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	52.3
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.33
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00011
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	408
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00023
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.6
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	94.6
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	7.2
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.169
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	214
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.018
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0182
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0182
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	20.6
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	21.2
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00166
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.00259
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.000816
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.000848
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00219
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00236
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	5.11
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0023
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	302
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	143.1
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.2
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.59
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0046
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	0.852
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	0.87
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0217
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.021
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.45

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.58
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	0.979
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	1
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.0795
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.0837
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	77.8
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	11.1
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	255
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.418
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.31
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	2.4
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	1.13
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00119
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00118
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0037
8	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0038
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	143
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	143
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.004
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0173
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.025
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00013
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00014
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00012
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0347
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0357
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.000052
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000606
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	55.1
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	56.4
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.35
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00013
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	442
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	<0.0002
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	1.15
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	87.9
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	10.07
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.156
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	231
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.021
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.021
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0213
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	22.8
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	22
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0027
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.00367
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.000876
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.000919
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00274
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00288
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	5.76
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0024
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	369
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	123.4
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.2
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	7.78
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0078
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	0.992
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	0.981
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0254
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0247
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.5
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.58
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	1.11
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	1.1
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.0872
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.0905
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	96.1
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	9.3
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	0.00034
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	292
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.378
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.26

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	3.1
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	1.6
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00134
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00138
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0034
9	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0036
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	138
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	4.6
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	143
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0072
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0152
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00016
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00014
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	<0.0001
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0361
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0362
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	<0.01
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.00376
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000722
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	58
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	65.9
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.4
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	0.00011
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	<0.0001
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	468
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.002
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	0.96
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	9.97
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.158
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	236
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.022
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	0.000087
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0222
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0213
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	22.1
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	27.4
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00323
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.00393
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00101
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.000918
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00282
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00302
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	6.33
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0042
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	272
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	139.6
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	0.003
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.35
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.39
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0061
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	1.2
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	1.03
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0288
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0274
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.48
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.59
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	1.2
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	1.14
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.0932
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.0982
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	105
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	10.6
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	350
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.163
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	2
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	1.46
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.42
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00146
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.0015
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0103
12	7	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0031
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	186
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	186
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.001
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.006
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00019
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00019

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	0.00011
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00018
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0819
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0686
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.013
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000801
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000836
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	95.6
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	104
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	0.83
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	0.00013
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00013
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	761
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	<0.0002
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	<0.5
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	7.7
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.205
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	472
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.012
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.02
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0505
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0513
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	56.6
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	47.6
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00905
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.00944
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00113
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00119
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00582
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00576
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	15
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0096
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	331
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	148.3
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.27
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.13
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0045
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.12
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	1.86
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.052
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0511
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.92
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.93
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	2.95
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	2.48
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.146
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.153
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	216
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	17.4
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	559
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	<0.05
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	<0.5
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	1.4
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	3.3
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.36
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00281
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00293
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0038
10	8	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0043
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	196
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	12.6
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	208
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	<0.001
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0054
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00022
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00024
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00015
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0768
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0702
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.013
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.013
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000707
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000033
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	127
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	121
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	1.5
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00013

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	920
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00027
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	<0.5
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	9.07
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.196
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	546
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.014
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.01
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0588
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0568
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	55.6
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	55.9
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00848
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0075
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00137
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00132
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00697
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00693
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	20.8
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0116
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	312
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	156.1
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.35
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.36
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.013
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	1.84
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	1.94
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0772
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0672
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.88
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.18
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	2.42
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	2.51
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.181
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.165
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	281
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	11
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	0.000013
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	716
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	<0.05
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	<0.5
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	1.5
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	0.6
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.41
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00302
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00324
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	0.00051
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0034
6	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	<0.003
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	195
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	195
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0039
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.011
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00025
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00022
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	0.00012
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00016
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.083
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0773
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.013
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.013
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.05
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000736
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000736
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	119
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	130
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	1.09
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	0.0001
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00013
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	910
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00022
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	<0.5
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	9.45
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.192
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	536
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.015
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.028
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0655
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0611
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	57.9
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	58.7
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00856

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.00932
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00122
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00128
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00651
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.0067
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	20.2
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0107
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	311
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	157.9
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.21
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.28
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	<0.002
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.03
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	1.91
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.078
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0674
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	2.11
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.55
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	2.65
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	2.71
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.159
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.195
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	271
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	11.7
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	681
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.612
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	0.68
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	1.8
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Field	NTU	-4.45
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.39
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00344
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.0034
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	0.00051
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0032
7	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0041
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	219
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as HCO3)	mg/L	267
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	2.8
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CO3)	mg/L	1.7
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as OH)	mg/L	<1
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	222
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	<0.001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.007
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0052
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Anion Sum	meq/L	12.1
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00023
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00024
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00019
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0874
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0873
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.013
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.014
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000677
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000042
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	121
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	120
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cation - Anion Balance	%	90.9
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cation Sum	meq/L	11
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	1.42
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00011
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	948
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity, Field	uS/cm	662
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	<0.0002
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	<0.5
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	85.6
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	9.63666667
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	DMSeO - Dimethylselenoxide	mg/L	<0.00001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.192
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	543
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ion balance (APHA)	%	4.76
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.012
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.012
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0717
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0675
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	58.5
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	59.8
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0088
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.00786
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	MeSe(IV) - Methylseleninic Acid	mg/L	0.000014
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00132
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00133
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00656

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00645
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	21.2
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0071
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	325
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.41333333
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.3
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0023
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.22
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.17
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Se(IV) - Selenite	mg/L	0.000227
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Se(VI) - Selenate	mg/L	0.0624
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	SeCN - Selenocyanate	mg/L	<0.00001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.071933333
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0626
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium Unknown	mg/L	<0.00001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenosulphate	mg/L	<0.00001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	SeMe - Selenomethionine	mg/L	<0.00001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	2.14
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.17
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.03
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Specific Conductivity	uS/cm	947
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.187
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.186
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	293
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphur (S)-Dissolved	mg/L	104
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphur (S)-Total	mg/L	114
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	10.2
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	712
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	2.52
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	<0.5
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	1
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.45
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00396
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00384
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0025
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0028
13	9	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.003
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	192
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	192
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	<0.001
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0119
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00027
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00025
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.0001
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0885
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0917
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.013
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.014
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.000105
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000087
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	141
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	147
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	5.17
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	<0.0001
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1020
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00032
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	<0.5
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	83.4
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	8.97
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.184
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	606
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.018
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.039
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0926
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0783
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	61.6
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	71.4
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.00969
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.00948
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00137
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00142
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00766
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00802
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	28
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0172
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	307
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	145
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.33
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.19
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0021
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.47

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.39
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0822
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0771
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.88
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.84
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.51
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.78
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.212
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.213
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	368
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	11.9
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	811
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.36
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	<0.5
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	2
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.66
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00451
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00484
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0039
4	10	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.004
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	211
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	6.8
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	218
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	<0.001
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0041
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0069
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00022
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00018
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	0.0001
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	<0.0001
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0904
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0938
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.012
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.012
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000663
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000694
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	140
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	163
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	1.91
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00016
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1120
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00025
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	0.56
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	11.49
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.171
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	644
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.028
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.048
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0724
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0798
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	71.4
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	80.9
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0126
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0124
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00124
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00129
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.0044
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00478
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	26.2
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.007
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	275
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	24.7
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.55
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.37
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0038
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	1.92
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.23
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.135
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0875
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.95
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.86
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.19
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.77
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.208
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.218
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	397
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	2.5
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	868
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.622
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	1.15
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	<1
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.61
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.0043
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00483
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0023
22	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	<0.003
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<10
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	214
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	214
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	0.0014
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0082
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	0.0058
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00022
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.00022
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00012
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.105
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.0982
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.011
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.011
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000601
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000725
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	170
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	169
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	2.11
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00012
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1170
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	0.00039
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	<0.5
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	83.9
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	12.18
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.192
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	758
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	<0.01
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.05
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0919
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.092
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	81
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	81.6
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0119
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0134
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.0013
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00129
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00466
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00476
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	29.5
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0069
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	352
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	158.5
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.19
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.1
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0036
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.15
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.13
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.11
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0888
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.98
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	2.02
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.85
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.94
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.226
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.223
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	442
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	0
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	894
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	<0.05
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	0.71
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	3
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	1.39
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.00468
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00452
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0047
29	11	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	0.0045
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	250
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as HCO3)	mg/L	<1
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CO3)	mg/L	<1
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as OH)	mg/L	<1

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	205
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	<0.001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0041
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Anion Sum	meq/L	14.6
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00018
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.0002
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00012
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.0897
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.102
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	<0.01
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.011
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000547
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.0000812
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	136
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	167
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cation - Anion Balance	%	83.6
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cation Sum	meq/L	12.2
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	2.01
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	<0.0001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	<0.0001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1170
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity, Field	uS/cm	750
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	<0.0002
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	<0.5
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	87
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	12.23
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	DMSeO - Dimethylselenoxide	mg/L	<0.00001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.172
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	604
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ion balance (APHA)	%	-8.96
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.029
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.041
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0748
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0873
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	64.3
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	78.7
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0114
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0136
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	<0.000005
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.00107
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00124
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.00338
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00485
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	27.3
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	0.0071
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	424
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.03
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.27
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	<0.002
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	1.77
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.1
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Se(IV) - Selenite	mg/L	0.000206
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Se(VI) - Selenate	mg/L	0.0836
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	SeCN - Selenocyanate	mg/L	<0.00001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.0872
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.091766667
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium Unknown	mg/L	<0.00001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenosulphate	mg/L	<0.00001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	SeMe - Selenomethionine	mg/L	<0.00001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.6
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.76
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	3.12
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	3.93
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Specific Conductivity	uS/cm	1374
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.198
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.231
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	409
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphur (S)-Dissolved	mg/L	142
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphur (S)-Total	mg/L	143
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	1.2
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	909
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	1.46
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	<0.5
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	2
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.39
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.0045
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00487
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0021
8	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	<0.003
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Acidity (as CaCO3)	mg/L	<2
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	216
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Carbonate (as CaCO3)	mg/L	11
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Alkalinity, Total (as CaCO3)	mg/L	227
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Dissolved	mg/L	<0.001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Aluminum (Al)-Total	mg/L	0.0052
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Ammonia, Total (as N)	mg/L	<0.005
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Dissolved	mg/L	0.00019
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Antimony (Sb)-Total	mg/L	0.0002
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Dissolved	mg/L	<0.0001
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Arsenic (As)-Total	mg/L	0.00013
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Dissolved	mg/L	0.111
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Barium (Ba)-Total	mg/L	0.101
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Dissolved	mg/L	<0.00002
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Beryllium (Be)-Total	mg/L	<0.00002
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bismuth (Bi)-Total	mg/L	<0.00005
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Dissolved	mg/L	0.01
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Boron (B)-Total	mg/L	0.01
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Bromide (Br)	mg/L	<0.25
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Dissolved	mg/L	0.0000619
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cadmium (Cd)-Total	mg/L	0.000066
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Dissolved	mg/L	149
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Calcium (Ca)-Total	mg/L	163
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chloride (Cl)	mg/L	1.77
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Dissolved	mg/L	0.00011
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Chromium (Cr)-Total	mg/L	0.00013
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Dissolved	mg/L	<0.0001
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Cobalt (Co)-Total	mg/L	<0.0001
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Conductivity	uS/cm	1190
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Dissolved	mg/L	<0.0002
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Copper (Cu)-Total	mg/L	<0.0005
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Organic Carbon	mg/L	<0.5
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	%	82.6
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	12.04
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Fluoride	mg/L	0.138
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Hardness - Dissolved (as CaCO3)	mg/L	679
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Dissolved	mg/L	0.027
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Iron (Fe)-Total	mg/L	0.046
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Dissolved	mg/L	<0.00005
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lead (Pb)-Total	mg/L	<0.00005
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Dissolved	mg/L	0.0817
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Lithium (Li)-Total	mg/L	0.0831
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Dissolved	mg/L	74.5
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Magnesium (Mg)-Total	mg/L	79.2
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Dissolved	mg/L	0.0102
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Manganese (Mn)-Total	mg/L	0.0122
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Dissolved	mg/L	<0.000005
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Mercury (Hg)-Total	mg/L	0.000009
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Dissolved	mg/L	0.0012
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Molybdenum (Mo)-Total	mg/L	0.00124
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Dissolved	mg/L	0.0045
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nickel (Ni)-Total	mg/L	0.00504
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrate (as N)	mg/L	27.8
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Nitrite (as N)	mg/L	<0.005
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP	mV	408
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	219.8
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Orthophosphate	mg/L	<0.001
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.36
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Lab	pH	8.4
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Phosphorus (P)-Total	mg/L	0.0021
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Dissolved	mg/L	2.21
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Potassium (K)-Total	mg/L	2.24
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Dissolved	mg/L	0.111
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Selenium (Se)-Total	mg/L	0.0938
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Dissolved	mg/L	1.93
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silicon (Si)-Total	mg/L	1.89
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Dissolved	mg/L	<0.00001
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Silver (Ag)-Total	mg/L	<0.00001
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Dissolved	mg/L	4.05
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sodium (Na)-Total	mg/L	4.08
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Dissolved	mg/L	0.226
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Strontium (Sr)-Total	mg/L	0.226
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Sulphate	mg/L	398
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	0
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Dissolved	mg/L	<0.00001
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Thallium (Tl)-Total	mg/L	<0.00001
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Dissolved	mg/L	<0.0001
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Tin (Sn)-Total	mg/L	<0.0001
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Dissolved	mg/L	<0.0003
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Titanium (Ti)-Total	mg/L	<0.0003
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Dissolved Solids	mg/L	932
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Kjeldahl Nitrogen	mg/L	0.337
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Organic Carbon	mg/L	<0.5
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Total Suspended Solids	mg/L	<1
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Turbidity, Lab	NTU	0.41
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Dissolved	mg/L	0.0047
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Uranium (U)-Total	mg/L	0.00444
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Dissolved	mg/L	<0.0005
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Vanadium (V)-Total	mg/L	<0.0005
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Dissolved	mg/L	0.0022
12	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Zinc (Zn)-Total	mg/L	<0.003
13	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Dissolved Oxygen, Field	mg/L	12.04
13	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	ORP, Field	mV	219.8
13	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	pH, Field	pH	8.36
13	12	2022	FR_FR2 (RG_FOUKI)	FR_FR2	Temperature, Field	deg c	0
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	3.5
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	208
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	208
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	<0.001
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0468
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	0.0122
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00023
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00026
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	0.0001
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00018
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0917
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.103
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	0.01
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	0.012

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.25
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000736
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.000118
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	144
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	153
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	2.33
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	<0.0001
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.0002
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	0.0002
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	1130
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity, Field	uS/cm	1256
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	0.00048
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	0.00051
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	0.5
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	83.4
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	12.18
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.16
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	632
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	<0.01
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.119
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	0.000092
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0762
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0776
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	66.2
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	68.4
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.0099
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.0229
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	0.0000094
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.0014
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.00144
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00609
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00698
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	29.4
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0114
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	486
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	152.2
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.12
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	7.99
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0052
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	2.2
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	2.23
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0876
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0752
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.92
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	2.12
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	3.26
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	3.62
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.211
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.212
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	369
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	-0.1
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	<0.0009
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	868
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.339
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	0.78
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	5.4
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	1.06
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00438
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00471
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	0.00056
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0034
6	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0069
13	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	199
13	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	13.02
13	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	32.2
13	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.35
13	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	219
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as HCO3)	mg/L	267
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CO3)	mg/L	<1
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as OH)	mg/L	<1
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	219
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	<0.001
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0373
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	0.0272
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Anion Sum	meq/L	15.1
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00024
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00025
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00014
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0998
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.105
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	0.012
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	0.014
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.25
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000621
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000948
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	148
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	169
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cation - Anion Difference	%	5.59
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cation - Anion Ratio	%	89.4
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cation Sum	meq/L	13.5

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	2.22
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	0.00011
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00014
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	0.00014
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	1210
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity, Field	uS/cm	691
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	<0.0002
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	0.73
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	68.3
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	9.92
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	DMSeO - Dimethylselenoxide	mg/L	<0.00001
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.168
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	663
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	0.02
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.074
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	<0.00005
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0799
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0879
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	71.3
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	74
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.0123
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.0174
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.00144
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.00153
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.0053
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00589
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	30
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0131
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	370
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.23
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.25
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0054
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	2.37
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	2.42
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Se(IV) - Selenite	mg/L	0.000244
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Se(VI) - Selenate	mg/L	0.072
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	SeCN - Selenocyanate	mg/L	<0.00001
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.084166667
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.083066667
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium Unknown	mg/L	<0.00001
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenosulphate	mg/L	<0.00001
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	SeMe - Selenomethionine	mg/L	<0.00001
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	2.1
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	1.98
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	3.67
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	3.74
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Specific Conductivity	uS/cm	1325
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.215
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.237
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	408
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphur (S)-Dissolved	mg/L	144
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphur (S)-Total	mg/L	138
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	<0.0012
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	897
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.332
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	0.92
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	5.8
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	1.43
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00485
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00521
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0028
19	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0039
20	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	13.81
20	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	98.8
20	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.46
20	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0
27	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	13.99
27	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	75.3
27	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.52
27	1	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0
3	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	12.66
3	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	101.2
3	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.42
3	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	215
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	7.4
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	223
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	<0.001
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0044
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	<0.005
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00022
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00024
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.0001
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0932
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.094
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	0.011

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	0.012
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.25
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000674
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000708
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	148
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	160
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	1.95
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	0.00013
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00024
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	<0.0001
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	1180
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	0.0002
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	<0.5
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	82.4
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.9
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.159
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	656
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	0.019
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.034
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	<0.00005
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0815
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0835
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	69.7
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	65.9
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.0127
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.0133
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.0000005
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.0014
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.00146
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00507
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00534
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	29
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0066
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	461
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	133.1
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.24
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.32
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.004
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	2.3
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	2.25
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0817
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0778
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.79
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	1.94
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	3.38
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	3.45
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.22
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.237
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	386
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0.3
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	<0.0003
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	909
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	<0.05
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	<0.5
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	1.3
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Field	NTU	0.2
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	0.37
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00454
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00474
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.002
8	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0032
10	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	12.56
10	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	103.5
10	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	9.03
10	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0.8
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	206
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as HCO3)	mg/L	251
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CO3)	mg/L	<1
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as OH)	mg/L	<1
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	206
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.0011
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0044
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	0.0064
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Anion Sum	meq/L	14.2
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00027
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00026
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00012
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.1
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.0956
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	0.013
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	0.012
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.25
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000713
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000801
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	155
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	153
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cation - Anion Difference	%	0.353
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cation - Anion Ratio	%	99.3
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cation Sum	meq/L	14.1

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	2.63
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	<0.0001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	<0.0001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	0.0001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	1200
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity, Field	uS/cm	768
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	<0.0002
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	0.82
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	83.6
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.45
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	DMSeO - Dimethylselenoxide	mg/L	<0.00001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.148
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	696
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	0.02
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.048
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	<0.00005
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0874
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0804
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	75.1
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	72
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.0152
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.0156
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.0000005
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.00154
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.0016
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00554
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00565
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	29.4
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0197
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	464
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.21
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.26
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0038
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	2.4
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	2.33
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Se(IV) - Selenite	mg/L	0.000291
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Se(VI) - Selenate	mg/L	0.0841
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	SeCN - Selenocyanate	mg/L	<0.00001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.07765
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.081066667
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium Unknown	mg/L	<0.00001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenosulphate	mg/L	<0.00001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	SeMe - Selenomethionine	mg/L	<0.00001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.89
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	1.89
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	3.69
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	3.55
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Specific Conductivity	uS/cm	1359
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.223
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.229
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	382
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphur (S)-Dissolved	mg/L	131
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphur (S)-Total	mg/L	138
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	2.2
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	<0.0003
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	881
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	<0.05
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	0.83
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	1.8
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	0.62
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00459
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.0049
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0029
15	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	<0.003
17	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	13.77
17	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	99
17	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.74
17	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0
24	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	8.61
24	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	34
24	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.6
24	2	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	-0.01
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	210
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	210
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.0012
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0124
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	<0.005
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00021
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00022
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.0001
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0876
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.097
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	0.011
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	0.014
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.25
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000643
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000683

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	147
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	155
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	1.76
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	<0.0001
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00016
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	0.0001
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	1180
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	<0.0002
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	0.78
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	79.6
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.63
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.113
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	677
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	0.02
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.068
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	<0.00005
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0751
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0869
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	75.2
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	75
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.0133
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.0192
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	0.0000061
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.00128
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.00538
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00489
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00505
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	26.6
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0094
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	469
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	155.4
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.28
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.23
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0038
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	2.27
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	2.43
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0867
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0824
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.88
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	2.12
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	3.64
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	3.64
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.215
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.234
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	366
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	-0.1
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	<0.0003
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	849
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.3
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	0.59
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	4.1
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Field	NTU	0.86
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	1.78
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00445
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00487
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0019
2	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	<0.003
3	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.33
3	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	103.3
3	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.16
3	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	5.2
10	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	13.23
10	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	305.1
10	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.3
10	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0.1
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	2.2
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	210
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	210
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.0028
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0287
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	<0.005
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00025
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00026
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	0.00011
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00011
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0984
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.0991
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	0.011
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	0.012
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.25
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000686
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000524
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	173
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	161
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	2.86
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	<0.0001
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	<0.0002
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	0.00012
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	1190
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity, Field	uS/cm	1231.7

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	<0.0002
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	1.04
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	101.9
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.09
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.152
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	765
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	0.011
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.038
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	<0.00005
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0882
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0908
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	80.9
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	80.7
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.0162
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.0179
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	0.0000063
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.00142
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.00154
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00522
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00548
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	30.7
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0118
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	372
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	95.2
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.4
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.21
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0058
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	2.3
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	2.48
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0912
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0854
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.82
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	2.08
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	3.54
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	3.99
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.233
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.238
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	417
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	3.4
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	0.00064
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	888
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.51
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	1.7
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	7.3
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	7.3
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00487
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00505
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0033
14	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	<0.003
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	2.75
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	220
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as HCO3)	mg/L	275
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CO3)	mg/L	<1
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as OH)	mg/L	<1
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	220
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.00765
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0291
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	0.005
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Anion Sum	meq/L	15.4
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.000245
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00026
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	0.0001
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.000145
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.101
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.0975
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	0.0115
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	0.012
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.25
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000701
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	7.63333E-05
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	160.5
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	158.5
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cation - Anion Balance	%	95.4
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cation Sum	meq/L	14.7
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	2.34
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	0.00017
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00018
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	0.000105
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	0.000115
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	1185
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity, Field	uS/cm	927.9
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	0.00031
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	0.81
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	93.1
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.75
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	DMSeO - Dimethylselenoxide	mg/L	<0.00001
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.141
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	700.5
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ion balance (APHA)	%	2.32
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	0.0255
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.0835

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	0.000068
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	0.0000565
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.08055
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0852
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	72.85
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	70.4
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.01925
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.01915
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	5.66667E-07
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.001445
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.001475
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.005445
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.005465
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	30.05
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0106
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	442
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	114.4
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.23
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.145
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0053
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	2.42
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	2.33
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Se(IV) - Selenite	mg/L	0.000225
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Se(VI) - Selenate	mg/L	0.0769
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	SeCN - Selenocyanate	mg/L	<0.00001
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.082266667
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.077933333
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium Unknown	mg/L	<0.00001
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenosulphate	mg/L	<0.00001
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	SeMe - Selenomethionine	mg/L	<0.00001
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.93
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	2.02
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	4.12
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	3.615
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Specific Conductivity	uS/cm	1148
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.2285
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.2325
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	409.5
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphur (S)-Dissolved	mg/L	143
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphur (S)-Total	mg/L	147
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	1.535
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	0.00052
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	967.5
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.2355
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	1.535
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	4.9
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	2.95
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00471
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.004905
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0777
15	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0077
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	2.8
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	215
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	215
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.002
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0421
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	0.0239
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00024
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00028
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00011
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0938
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.105
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	0.011
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	0.012
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.25
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000724
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000904
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	152
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	173
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	2.22
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	0.00015
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00036
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	0.00016
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	1210
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity, Field	uS/cm	1238.7
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	<0.0002
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	0.00062
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	0.75
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	99.49
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.29
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.138
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	686
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	<0.01
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.137
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	0.000112
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0824
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0891
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	74.5
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	84.9

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.017
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.0219
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	0.0000015
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.00141
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.00149
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00617
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00636
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	30.2
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0094
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	454
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	101.1
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.38
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.19
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0096
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	2.33
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	2.64
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0836
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0936
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.86
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	2.12
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	3.68
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	4.11
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.222
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.239
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	400
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	2.11
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	<0.0009
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	940
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.479
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	2.37
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	6.4
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	3.71
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00487
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00452
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.003
16	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0044
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	3.5
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	234
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	234
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.0017
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.139
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	0.0072
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00027
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00029
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00018
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0928
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.0966
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	0.012
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	0.012
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.25
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.000073
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000954
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	146
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	136
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	2.48
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	<0.0001
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00034
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	0.00011
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	0.00021
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	1210
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity, Field	uS/cm	1224.3
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	0.00036
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	1.11
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	95.3
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.725
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.135
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	654
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	<0.01
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.246
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	0.000211
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0754
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0706
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	70.2
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	65.4
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.0173
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.0213
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	0.0000053
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.00154
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.00152
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00556
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.0056
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	29.5
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0112
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	428
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	95.65
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.315
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.12
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0199
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	2.37

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	2.25
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0942
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0874
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.89
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	2.32
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	3.97
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	3.74
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.234
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.224
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	421
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	1.03
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	0.000013
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	<0.0033
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	1140
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.376
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	7.04
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	20.8
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	15.1
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00507
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00498
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	0.00083
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0036
17	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0054
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	2.7
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	217
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	217
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.0018
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0804
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	0.0207
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00028
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00029
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	0.00011
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00014
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0952
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.0956
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	0.013
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	0.014
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.25
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000754
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.000085
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	150
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	158
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	2.58
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	<0.0001
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00025
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	0.00011
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	0.00016
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	1200
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity, Field	uS/cm	1166
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	0.00024
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	0.76
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	103.9
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.89
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.196
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	692
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	<0.01
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.139
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	0.000116
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0854
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0879
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	77.2
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	77.8
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.0181
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.02
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	0.00000129
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.00166
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.00165
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00562
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00569
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	28.8
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0144
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	429
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	156.3
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	0.0011
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.2
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.21
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0107
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	2.57
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	2.47
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0975
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0872
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	2.11
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	2.23
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	4.06
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	4.04
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.227
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.23
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	423
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	1.9
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	<0.003
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	832
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.362
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	4.56
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	9.3
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	8.74
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00498
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00487
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0034
18	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0036
24	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.8
24	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	45.1
24	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.46
24	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	4.5
31	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	13.27
31	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	22.4
31	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.45
31	3	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	1.6
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	204
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	204
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.003
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0386
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	0.0693
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00071
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00074
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	0.00016
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00019
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0962
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.0891
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	0.01
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	0.012
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.25
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.000115
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.00012
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	127
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	122
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	1.71
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	<0.0001
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00015
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	0.00059
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	0.00062
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	1000
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	0.00027
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	1.12
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	84
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.37
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.185
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	548
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	<0.01
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.067
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	<0.00005
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0582
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0617
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	56.2
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	51.2
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.0092
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.0111
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	0.0000072
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.00369
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.00377
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.011
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.0108
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	22.4
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0941
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	448
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	149.6
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.45
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	7.79
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	<0.002
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	2.22
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	2.29
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0714
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0741
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.89
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	2
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	2.54
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	2.52
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.226
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.232
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	327
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	2.6
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	0.00001
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	0.000013
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	0.00113
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	739
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	<0.05
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	1.29
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	7.4
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	3.42
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00376
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00355
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	0.00053
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0054
2	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0061
7	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	12.21
7	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	58.8
7	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.48
7	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	2.1
14	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	12.71
14	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	20.8
14	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.36
14	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0
21	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.94
21	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	50.8
21	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.55
21	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	5.3
28	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.88
28	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	44.9
28	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.39
28	4	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	2.8
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	169
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	169
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.0041
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.113
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	<0.005
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00021
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00024
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00021
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0545
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.0708
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	<0.01
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	<0.01
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.05
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.00015
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.000185
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	99.9
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	101
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	0.76
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	<0.0001
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00026
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	0.00023
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	0.00038
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	792
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	0.00044
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	0.00062
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	1.77
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.77
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.166
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	438
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	<0.01
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.152
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	0.00012
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0345
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0339
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	45.8
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	41
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.00575
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.0145
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.00126
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.00213
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00785
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00878
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	16.1
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0059
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	255
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	289.1
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.21
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.29
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.013
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	1.63
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	1.65
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0643
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0589
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.68
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	2.03
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	1.62
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	1.57
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.137
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.14
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	221
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	4.5
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	0.000014
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	0.00157
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	522
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	<0.05
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	3.38
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	15.4
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	2.44
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00253
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.0027
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	0.00065
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.006
4	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0091

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
5	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.71
5	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	24
5	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.75
5	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	6
12	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.64
12	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	209.9
12	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.39
12	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	4.9
19	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	12.79
19	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	266.1
19	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.6
19	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	4.4
26	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	12.05
26	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	221.5
26	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.36
26	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	5.4
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	147
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	10.2
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	157
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.0029
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0772
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	<0.005
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00015
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00016
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00016
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0395
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.0526
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	<0.01
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	<0.01
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.05
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.000046
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000897
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	65.2
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	67.5
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	0.4
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	0.0002
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00036
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	0.00016
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	552
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	0.00086
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	0.00134
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	1.71
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	87.4
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.56
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.167
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	273
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	<0.01
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.118
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	0.000055
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	0.000104
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0201
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0223
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	26.8
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	30.7
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.00212
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.00918
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.000952
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.000992
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00288
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00386
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	7.78
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0032
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	335
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	132.9
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.48
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.42
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0115
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	0.992
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	1.21
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0332
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0335
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.51
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	1.75
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	1.08
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	1.28
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.106
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.107
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	132
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	7.1
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	0.0001
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	0.00016
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	<0.0015
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	359
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.484
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	2.04
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	10.9
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	2.84
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00159
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00169
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	0.00052
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0022
27	5	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0046
2	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.76
2	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	243

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
2	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.3
2	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	6.2
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	125
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	125
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.0048
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.139
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	<0.005
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00011
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00013
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00027
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0334
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.0432
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	<0.01
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	<0.01
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.05
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000335
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.000096
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	47.7
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	48.8
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	0.19
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	0.00013
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00031
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	0.00031
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	392
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	0.00066
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	0.00065
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	1.81
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.85
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.16
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	194
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	<0.01
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.26
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	0.000202
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0138
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0111
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	18.2
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	19.8
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.00154
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.0197
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.000756
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.000742
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00191
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00318
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	3.81
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0017
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	388
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	194.1
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.21
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.28
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0247
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	0.758
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	0.814
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0155
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0158
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.64
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	1.84
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	0.88
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	0.852
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.077
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.0851
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	60.5
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	5.2
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	0.00001
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	0.00142
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	213
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.373
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	2.68
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	22.7
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Field	NTU	13.37
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	7.05
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00105
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00105
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	0.00076
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0017
6	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0052
9	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.15
9	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	118.4
9	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.12
9	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	5
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	130
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as HCO3)	mg/L	159
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CO3)	mg/L	<1
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as OH)	mg/L	<1
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	130
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.003
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.158
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	<0.005
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Anion Sum	meq/L	4.13

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00013
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	0.0001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00019
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0298
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.0351
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	<0.01
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	<0.01
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.05
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000267
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000641
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	44.1
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	46.1
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cation - Anion Balance	%	88.9
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cation Sum	meq/L	3.67
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	0.24
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00033
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	0.00018
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	335
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity, Field	uS/cm	214.5
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	0.00024
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	0.00054
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	1.72
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	103.6
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	13.57
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	DMSeO - Dimethylselenoxide	mg/L	<0.00001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.146
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	181
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ion balance (APHA)	%	5.9
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	<0.01
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.227
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	0.00017
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0124
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0123
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	17.2
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	17.1
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.00122
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.0148
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.000684
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.000759
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00149
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00235
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	3.57
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	<0.001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	336
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.25
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.1
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0234
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	0.698
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	0.77
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Se(IV) - Selenite	mg/L	0.00008
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Se(VI) - Selenate	mg/L	0.0127
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	SeCN - Selenocyanate	mg/L	<0.00001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.013066667
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.013533333
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium Unknown	mg/L	<0.00001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenosulphate	mg/L	<0.00001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	SeMe - Selenomethionine	mg/L	<0.00001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.53
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	1.8
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	0.787
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	0.785
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Specific Conductivity	uS/cm	358.2
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.0702
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.0786
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	60.8
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphur (S)-Dissolved	mg/L	19.5
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphur (S)-Total	mg/L	20.4
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	4
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	0.00139
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	220
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	<0.5
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	1.89
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	17.3
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	5.73
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.000892
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.000898
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	0.00076
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0014
13	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0036
16	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.42
16	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	123.5
16	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.22
16	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	5.7
23	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.62
23	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	283.1
23	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.14
23	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	5
30	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.82
30	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	280
30	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.3

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
30	6	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	9.7
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	132
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	132
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.0018
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0309
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	<0.005
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00013
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00016
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00017
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0373
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.0359
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	<0.01
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	<0.01
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.05
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000465
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000542
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	56.9
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	53.1
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	0.33
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	0.00013
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00013
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	<0.0001
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	448
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	0.00022
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	1.14
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	85.8
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.13
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.15
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	232
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	<0.01
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.05
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	<0.00005
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0213
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0202
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	21.9
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	22.2
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.00196
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.00474
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.000907
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.000874
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.0024
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.0027
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	5.64
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0053
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	313
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	134.1
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.1
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.27
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0081
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	0.956
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	0.98
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0233
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0224
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.66
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	1.65
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	1.07
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	1.14
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.0921
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.0884
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	86.5
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	8.9
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	0.00034
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	310
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.447
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	1.59
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	4.4
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Field	NTU	2.09
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	1.74
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00124
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00132
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0026
1	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	<0.003
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	133
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	133
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.0026
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0816
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	<0.005
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00013
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00012
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0326
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.0326
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	<0.01
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	<0.01
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.05
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000451
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000501
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	55.4
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	53.9
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	0.3
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	0.0001
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00014
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	<0.0001
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	404
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	0.00021
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	1.22
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	87.9
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.27
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.143
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	228
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	<0.01
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.046
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	0.000058
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0175
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.018
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	21.7
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	20.5
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.00169
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.00512
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.000832
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.000872
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00233
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.0024
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	4.93
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0022
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	355
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	165.2
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	0.0012
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.2
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.24
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0115
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	0.882
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	0.899
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0217
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.02
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.58
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	1.66
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	1.02
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	1.02
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.0833
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.081
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	76.5
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	8.5
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	0.00063
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	248
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.491
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	1.71
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	29
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	5.61
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00121
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00121
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0022
5	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0045
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	137
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	137
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.002
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0297
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	<0.005
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	<0.0001
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00013
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	0.0001
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00012
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0326
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.0323
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	<0.01
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	<0.01
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.05
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000449
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000558
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	56.8
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	54.8
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	0.31
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	0.00011
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00013
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	<0.0001
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	415
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	0.00022
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	1.32

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	85.2
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.55
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.146
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	232
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	<0.01
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.031
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	<0.00005
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0182
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0196
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	21.9
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	20.7
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.00186
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.00358
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.000875
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.000879
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.0025
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00251
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	5.19
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	<0.001
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	401
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	135.3
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.15
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.27
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0071
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	0.909
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	0.914
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0235
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0212
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.55
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	1.6
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	1.03
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	1.02
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.0854
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.0826
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	79.2
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	6.2
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	0.0006
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	272
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.356
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	1.34
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	3.6
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Field	NTU	1.97
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	1.42
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00126
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00129
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0025
6	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	<0.003
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	130
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	2.6
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	133
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.0019
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0138
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	0.0056
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00012
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00013
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00012
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0339
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.0333
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	<0.01
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	<0.01
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.05
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000514
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000619
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	55.3
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	52.8
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	0.33
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	<0.0001
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.0001
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	<0.0001
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	423
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	0.00023
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	0.00149
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	1.09
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	82.8
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.045
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.166
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	227
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	<0.01
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.02
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	<0.00005
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0205
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0191
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	21.5
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	22.3
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.00227
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.00332
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.000842

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.000843
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00267
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00275
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	5.76
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	<0.001
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	413
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	205.35
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.25
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.43
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0055
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	0.903
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	0.883
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0242
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0232
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.49
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	1.56
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	1.05
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	1.08
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.0849
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.0862
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	84.7
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	8.15
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	<0.0003
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	280
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.334
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	1.1
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	1.6
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	0.68
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00126
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00125
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0028
7	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0031
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	130
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	3.4
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	133
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.0022
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0154
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	0.0119
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00012
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00013
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	<0.0001
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.032
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.032
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	<0.01
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	<0.01
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.05
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000454
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000514
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	49.5
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	52.9
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	0.36
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	0.00022
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00012
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	<0.0001
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	405
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	0.0004
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	0.00065
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	1.03
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	97.2
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	8.8
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.166
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	208
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	0.023
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.017
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	<0.00005
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0174
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0183
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	20.4
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	20.2
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.00242
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.00303
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.000807
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.000843
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00238
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00249
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	5.03
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0011
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	307
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	148.8
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.2
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.34
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0057
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	0.828
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	0.844
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0213
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0202
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.44
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	1.55
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	0.96
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	0.963
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.0814
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.0849
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	76.7
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	11.1
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	0.00032
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	262
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.493
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	1.19
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	4.2
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	1.6
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00116
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00118
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0025
8	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0032
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	143
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	143
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.0045
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0192
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	<0.005
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00014
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00015
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	0.0001
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.0001
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0365
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.037
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	<0.01
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	<0.01
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.05
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000533
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000563
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	57
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	56.8
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	0.29
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	<0.0001
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00012
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	<0.0001
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	439
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	<0.0002
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	1.19
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	87.5
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	9.99
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.139
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	240
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	<0.01
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.023
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	<0.00005
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0219
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0213
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	23.6
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	21.9
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.00209
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.00359
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.000891
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.000893
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00263
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00279
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	5.13
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.002
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	347
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	126.1
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	0.0042
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.12
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0057
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	1.04
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	1.01
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0262
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0243
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.59
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	1.58
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	1.15
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	1.11
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.0903
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.0885
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	85.9
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	9.5
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	0.0003
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	291
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.382
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	1.13
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	1.8
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	1.39

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00137
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00132
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0031
9	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0034
14	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.41
14	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	276.3
14	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.1
14	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	8.4
21	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	9.01
21	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	274.6
21	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.28
21	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	10.3
23	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Field	NTU	1.01
28	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	9.22
28	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	260.8
28	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.25
28	7	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	10.6
4	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	9.68
4	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	283.1
4	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.31
4	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	9.7
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	163
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	15.4
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	178
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.0014
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0122
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	0.0108
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00019
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00025
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00023
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0612
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.0678
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	0.011
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	0.012
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.05
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000848
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000817
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	93.5
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	92.4
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	0.83
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	0.0001
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00015
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	<0.0001
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	749
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	0.00023
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	0.78
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	94.6
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.21
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.167
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	417
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	<0.01
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.036
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	0.000056
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0425
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0438
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	44.5
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	41.4
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.00531
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.00633
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.00113
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.00137
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00481
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00491
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	15.6
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0095
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	319
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	143.8
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.32
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.37
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0052
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	1.64
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	1.8
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0549
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.048
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.89
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	1.86
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	2.19
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	1.99
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.133
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.152
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	229
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	11.8
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	0.00034
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	587
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.567
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	1.24
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	1.2
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	0.42
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00253

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00274
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	0.00105
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0045
5	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0098
11	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	9.07
11	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	242.4
11	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.35
11	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	11.5
18	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	9.36
18	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	273.4
18	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.34
18	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	11.3
25	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.07
25	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	275.1
25	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.4
25	8	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	11.4
1	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	9.58
1	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	241
1	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.36
1	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	12.5
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	199
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	199
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.0037
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.016
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	<0.005
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00024
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00022
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00014
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0817
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.0759
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	0.013
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	0.013
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.05
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000638
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000662
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	118
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	129
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	1.05
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	<0.0001
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00014
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	<0.0001
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	902
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	0.0003
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	<0.5
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	9.3
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.19
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	537
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	0.014
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.032
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	<0.00005
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0661
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0591
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	58.9
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	58.7
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.00678
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.00803
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.00126
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.00125
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00646
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00686
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	20.1
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0113
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	310
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	148.1
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.34
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.26
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.0023
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	2.07
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	1.87
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0798
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0694
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	2.13
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	2.51
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	2.74
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	2.59
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.156
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.197
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	271
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	11.7
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	<0.0003
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	693
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	<0.05
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	<0.5
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	2.2
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Field	NTU	-4.48
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	0.47
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00348
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00343
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	0.00054
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0031
7	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0037
8	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.18
8	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	109.1
8	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.56
8	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	9.7
12	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	9.515
12	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.32
12	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	10.15
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	205
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as HCO3)	mg/L	250
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CO3)	mg/L	<1
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as OH)	mg/L	<1
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	205
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.0016
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0072
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	<0.005
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Anion Sum	meq/L	11.8
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.0002
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00023
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00019
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0844
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.082
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	0.012
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	0.014
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.25
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000577
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000594
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	101
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	115
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cation - Anion Balance	%	82.7
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cation Sum	meq/L	9.76
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	1.32
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	0.0001
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00011
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	<0.0001
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	944
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity, Field	uS/cm	719
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	<0.0002
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	<0.5
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	84.45
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	9.34
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	DMSeO - Dimethylselenoxide	mg/L	<0.00001
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.189
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	480
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ion balance (APHA)	%	9.46
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	0.019
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.03
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	<0.00005
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0627
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0666
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	55.3
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	56
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.0068
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.00741
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	MeSe(IV) - Methylseleninic Acid	mg/L	0.000011
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.00115
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.00127
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00604
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00608
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	21.6
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0105
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	326
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.405
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.26
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	<0.002
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	2.05
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	1.99
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Se(IV) - Selenite	mg/L	0.000253
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Se(VI) - Selenate	mg/L	0.0622
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	SeCN - Selenocyanate	mg/L	<0.00001
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0665
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0639
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium Unknown	mg/L	<0.00001
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenosulphate	mg/L	0.000013
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	SeMe - Selenomethionine	mg/L	<0.00001
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	2
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	1.92
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	2.84
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	2.88
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Specific Conductivity	uS/cm	988
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.157
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.176
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	295
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphur (S)-Dissolved	mg/L	98.8
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphur (S)-Total	mg/L	106
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	10.7
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	<0.0003

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	730
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	2.59
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	<0.5
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	1.4
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	0.56
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00332
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00378
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0025
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0024
13	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	<0.003
15	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.24
15	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	281.7
15	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.4
15	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	8.9
22	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.17
22	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	275.6
22	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.4
22	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	8.1
29	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.14
29	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	66.2
29	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.22
29	9	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	9.1
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	215
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	215
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	0.0014
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.008
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	0.0087
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00027
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00026
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	<0.0001
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.0897
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.0893
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	0.013
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	0.014
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.25
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000815
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000643
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	142
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	147
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	1.5
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	<0.0001
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00011
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	<0.0001
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	1030
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	<0.0002
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	<0.5
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	107.6
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.3
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.175
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	610
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	0.02
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.031
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	<0.00005
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0923
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0795
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	62
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	68.8
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.00791
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.00726
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.00135
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.00137
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00791
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.008
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	27.7
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0074
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	298
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	154.3
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.28
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.18
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	<0.002
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	2.39
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	2.28
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.082
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0762
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.82
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	1.75
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	3.46
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	3.5
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.212
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.215
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	379
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	8.99
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	<0.0003
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	798
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	<0.05
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	<0.5
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	<1
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	0.68
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00449

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00468
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0033
5	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.0036
6	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.83
6	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	183.1
6	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.15
6	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	6.6
13	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.88
13	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	276.1
13	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.18
13	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	5.6
20	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.91
20	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	125.1
20	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.08
20	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	4.9
27	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.27
27	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	135.9
27	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.19
27	10	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	2.8
3	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.95
3	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	180.2
3	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.32
3	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0.8
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	201.5
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as HCO3)	mg/L	219
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	5.9
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CO3)	mg/L	6.5
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as OH)	mg/L	<1
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	207
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	<0.001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0067
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	<0.005
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Anion Sum	meq/L	11.9
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.000155
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00014
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	<0.0001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.09125
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.10135
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	0.011
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	0.013
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.25
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000448
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	5.60333E-05
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	115.5
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	138
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cation - Anion Balance	%	97.5
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cation Sum	meq/L	11.6
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	3.575
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	<0.0001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.000125
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	<0.0001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	926.5
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity, Field	uS/cm	667
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	<0.0002
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	0.66
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	79.5
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	11.33
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	DMSeO - Dimethylselenoxide	mg/L	<0.00001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.158
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	507.5
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ion balance (APHA)	%	-1.28
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	0.019
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.0275
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	<0.00005
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0371
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0518
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	53.25
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	65.55
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.00595
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.00746
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.000976
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.00132
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00245
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00263
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	18
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	<0.005
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	286.5
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	161.75
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.103333333
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.28
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	0.003
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	1.284
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	1.77
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Se(IV) - Selenite	mg/L	0.000169
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Se(VI) - Selenate	mg/L	0.056
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	SeCN - Selenocyanate	mg/L	<0.00001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.0861
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.069866667
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium Unknown	mg/L	<0.00001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenosulphate	mg/L	<0.00001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	SeMe - Selenomethionine	mg/L	<0.00001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	2.31
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	2.035
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	2.875
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	3.615
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Specific Conductivity	uS/cm	1282
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.161
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.1835
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	305.5
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphur (S)-Dissolved	mg/L	126
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphur (S)-Total	mg/L	124
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0.55
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	<0.0003
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	757.5
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.725
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	0.56
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	3.35
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	0.265
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00291
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.003435
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0028
7	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	0.00385
10	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	12.7
10	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	202.9
10	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.36
10	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0
17	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	13.44
17	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	253.5
17	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.3
17	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0
24	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	12.65
24	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	229.4
24	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.6
24	11	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	1.3
1	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	9.95
1	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	210.1
1	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.58
1	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	217
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	217
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	<0.001
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0038
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	<0.005
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00019
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00018
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00014
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.106
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.1
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	0.011
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	0.011
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.25
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000599
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.0000496
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	160
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	173
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	1.98
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	<0.0001
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00012
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	<0.0001
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	1150
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	<0.0002
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	<0.5
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	89.1
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	12.78
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.186
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	701
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	0.021
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.029
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	<0.00005
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.085
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.0867
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	73.3
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	83.4
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.00969
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.00991
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.00117
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.00121
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.0045
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00506
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	27.3
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0056
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	411
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	116.3
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.13
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.21
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	<0.002
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	2.24
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	2.22
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.122
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.0862
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	2.09
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	1.86

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	3.86
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	3.96
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.239
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.227
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	416
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0.5
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	<0.0003
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	906
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.554
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	<0.5
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	1
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	0.23
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.00503
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00481
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0026
2	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	<0.003
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Acidity (as CaCO3)	mg/L	<2
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as CaCO3)	mg/L	193
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Bicarbonate (as HCO3)	mg/L	235
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CaCO3)	mg/L	5.6
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Carbonate (as CO3)	mg/L	3.4
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Hydroxide (as OH)	mg/L	<1
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Alkalinity, Total (as CaCO3)	mg/L	198
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Dissolved	mg/L	<0.001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Aluminum (Al)-Total	mg/L	0.0039
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Ammonia, Total (as N)	mg/L	<0.005
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Anion Sum	meq/L	14.2
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Dissolved	mg/L	0.00018
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Antimony (Sb)-Total	mg/L	0.00019
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Dissolved	mg/L	<0.0001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Arsenic (As)-Total	mg/L	0.00017
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Dissolved	mg/L	0.106
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Barium (Ba)-Total	mg/L	0.102
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Beryllium (Be)-Total	mg/L	<0.00002
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bismuth (Bi)-Total	mg/L	<0.00005
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Dissolved	mg/L	<0.01
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Boron (B)-Total	mg/L	<0.01
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Bromide (Br)	mg/L	<0.25
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Dissolved	mg/L	0.0000574
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cadmium (Cd)-Total	mg/L	0.000052
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Dissolved	mg/L	149
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Calcium (Ca)-Total	mg/L	163
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cation - Anion Balance	%	97.2
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cation Sum	meq/L	13.8
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chloride (Cl)	mg/L	1.88
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Dissolved	mg/L	<0.0001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Chromium (Cr)-Total	mg/L	0.00014
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Cobalt (Co)-Total	mg/L	<0.0001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity	uS/cm	1150
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Conductivity, Field	uS/cm	581
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Dissolved	mg/L	<0.0002
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Copper (Cu)-Total	mg/L	<0.0005
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Organic Carbon	mg/L	<0.5
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	%	83.3
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	12.655
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	DMSeO - Dimethylselenoxide	mg/L	<0.00001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Fluoride	mg/L	0.169
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Hardness - Dissolved (as CaCO3)	mg/L	682
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ion balance (APHA)	%	-1.43
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Dissolved	mg/L	0.028
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Iron (Fe)-Total	mg/L	0.036
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Dissolved	mg/L	<0.00005
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lead (Pb)-Total	mg/L	<0.00005
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Dissolved	mg/L	0.0814
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Lithium (Li)-Total	mg/L	0.078
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Dissolved	mg/L	75.3
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Magnesium (Mg)-Total	mg/L	77.4
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Dissolved	mg/L	0.0115
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Manganese (Mn)-Total	mg/L	0.0114
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Mercury (Hg)-Total	mg/L	<0.000005
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Dissolved	mg/L	0.00107
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Molybdenum (Mo)-Total	mg/L	0.00127
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Dissolved	mg/L	0.00412
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nickel (Ni)-Total	mg/L	0.00483
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrate (as N)	mg/L	26.7
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Nitrite (as N)	mg/L	0.0063
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP	mV	428
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	259.2
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Orthophosphate	mg/L	<0.001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.625
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Lab	pH	8.29
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Phosphorus (P)-Total	mg/L	<0.002
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Dissolved	mg/L	2.17
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Potassium (K)-Total	mg/L	2.06
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Se(IV) - Selenite	mg/L	0.000196
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Se(VI) - Selenate	mg/L	0.0824
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	SeCN - Selenocyanate	mg/L	<0.00001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Dissolved	mg/L	0.08415
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium (Se)-Total	mg/L	0.08836667
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenium Unknown	mg/L	<0.00001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Selenosulphate	mg/L	<0.00001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	SeMe - Selenomethionine	mg/L	<0.00001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Dissolved	mg/L	1.66
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silicon (Si)-Total	mg/L	1.85
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Dissolved	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Silver (Ag)-Total	mg/L	<0.00001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Dissolved	mg/L	3.69
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sodium (Na)-Total	mg/L	3.89
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Specific Conductivity	uS/cm	1116
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Dissolved	mg/L	0.223
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Strontium (Sr)-Total	mg/L	0.228
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphate	mg/L	400
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphur (S)-Dissolved	mg/L	134
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Sulphur (S)-Total	mg/L	146
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	-0.05
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Thallium (Tl)-Total	mg/L	<0.00001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Dissolved	mg/L	<0.0001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Tin (Sn)-Total	mg/L	<0.0001
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Titanium (Ti)-Total	mg/L	<0.0003
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Dissolved Solids	mg/L	920
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Kjeldahl Nitrogen	mg/L	0.606
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Organic Carbon	mg/L	<0.5
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Total Suspended Solids	mg/L	<1
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Turbidity, Lab	NTU	0.34
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Dissolved	mg/L	0.0046
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Uranium (U)-Total	mg/L	0.00487
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Dissolved	mg/L	<0.0005
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Vanadium (V)-Total	mg/L	<0.0005
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Dissolved	mg/L	0.0022
8	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Zinc (Zn)-Total	mg/L	<0.003
13	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	12.35
13	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	256.8
13	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.45
13	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0
15	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	13.1
15	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	268.6
15	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.37
15	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0
29	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Dissolved Oxygen, Field	mg/L	10.82
29	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	ORP, Field	mV	155.2
29	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	pH, Field	pH	8.98
29	12	2022	FR_FR3 (RG_FOBKS)	FR_FR3	Temperature, Field	deg c	0
8	12	2022	RG_SCDSB	RG_SCDSB	Acidity (as CaCO3)	mg/L	<2
8	12	2022	RG_SCDSB	RG_SCDSB	Alkalinity, Bicarbonate (as CaCO3)	mg/L	237
8	12	2022	RG_SCDSB	RG_SCDSB	Alkalinity, Bicarbonate (as HCO3)	mg/L	289
8	12	2022	RG_SCDSB	RG_SCDSB	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
8	12	2022	RG_SCDSB	RG_SCDSB	Alkalinity, Carbonate (as CO3)	mg/L	<1
8	12	2022	RG_SCDSB	RG_SCDSB	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	12	2022	RG_SCDSB	RG_SCDSB	Alkalinity, Hydroxide (as OH)	mg/L	<1
8	12	2022	RG_SCDSB	RG_SCDSB	Alkalinity, Total (as CaCO3)	mg/L	237
8	12	2022	RG_SCDSB	RG_SCDSB	Aluminum (Al)-Dissolved	mg/L	<0.001
8	12	2022	RG_SCDSB	RG_SCDSB	Aluminum (Al)-Total	mg/L	0.0043
8	12	2022	RG_SCDSB	RG_SCDSB	Ammonia, Total (as N)	mg/L	0.0158
8	12	2022	RG_SCDSB	RG_SCDSB	Anion Sum	meq/L	17.9
8	12	2022	RG_SCDSB	RG_SCDSB	Antimony (Sb)-Dissolved	mg/L	0.00018
8	12	2022	RG_SCDSB	RG_SCDSB	Antimony (Sb)-Total	mg/L	0.0002
8	12	2022	RG_SCDSB	RG_SCDSB	Arsenic (As)-Dissolved	mg/L	<0.0001
8	12	2022	RG_SCDSB	RG_SCDSB	Arsenic (As)-Total	mg/L	0.0001
8	12	2022	RG_SCDSB	RG_SCDSB	Barium (Ba)-Dissolved	mg/L	0.0828
8	12	2022	RG_SCDSB	RG_SCDSB	Barium (Ba)-Total	mg/L	0.0919
8	12	2022	RG_SCDSB	RG_SCDSB	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	12	2022	RG_SCDSB	RG_SCDSB	Beryllium (Be)-Total	mg/L	<0.00002
8	12	2022	RG_SCDSB	RG_SCDSB	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	12	2022	RG_SCDSB	RG_SCDSB	Bismuth (Bi)-Total	mg/L	<0.00005
8	12	2022	RG_SCDSB	RG_SCDSB	Boron (B)-Dissolved	mg/L	<0.01
8	12	2022	RG_SCDSB	RG_SCDSB	Boron (B)-Total	mg/L	0.01
8	12	2022	RG_SCDSB	RG_SCDSB	Bromide (Br)	mg/L	<0.25
8	12	2022	RG_SCDSB	RG_SCDSB	Cadmium (Cd)-Dissolved	mg/L	0.0000504
8	12	2022	RG_SCDSB	RG_SCDSB	Cadmium (Cd)-Total	mg/L	0.0000715
8	12	2022	RG_SCDSB	RG_SCDSB	Calcium (Ca)-Dissolved	mg/L	157
8	12	2022	RG_SCDSB	RG_SCDSB	Calcium (Ca)-Total	mg/L	189
8	12	2022	RG_SCDSB	RG_SCDSB	Cation - Anion Balance	%	84.4
8	12	2022	RG_SCDSB	RG_SCDSB	Cation Sum	meq/L	15.1
8	12	2022	RG_SCDSB	RG_SCDSB	Chloride (Cl)	mg/L	8.08
8	12	2022	RG_SCDSB	RG_SCDSB	Chromium (Cr)-Dissolved	mg/L	0.00011
8	12	2022	RG_SCDSB	RG_SCDSB	Chromium (Cr)-Total	mg/L	<0.0001
8	12	2022	RG_SCDSB	RG_SCDSB	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	12	2022	RG_SCDSB	RG_SCDSB	Cobalt (Co)-Total	mg/L	<0.0001
8	12	2022	RG_SCDSB	RG_SCDSB	Conductivity	uS/cm	1370
8	12	2022	RG_SCDSB	RG_SCDSB	Conductivity, Field	uS/cm	835
8	12	2022	RG_SCDSB	RG_SCDSB	Copper (Cu)-Dissolved	mg/L	<0.0002
8	12	2022	RG_SCDSB	RG_SCDSB	Copper (Cu)-Total	mg/L	<0.0005
8	12	2022	RG_SCDSB	RG_SCDSB	Dissolved Organic Carbon	mg/L	<0.5
8	12	2022	RG_SCDSB	RG_SCDSB	Dissolved Oxygen, Field	%	86
8	12	2022	RG_SCDSB	RG_SCDSB	Dissolved Oxygen, Field	mg/L	12.43
8	12	2022	RG_SCDSB	RG_SCDSB	DMSeO - Dimethylselenoxide	mg/L	<0.00001
8	12	2022	RG_SCDSB	RG_SCDSB	Fluoride	mg/L	0.175
8	12	2022	RG_SCDSB	RG_SCDSB	Hardness - Dissolved (as CaCO3)	mg/L	743
8	12	2022	RG_SCDSB	RG_SCDSB	ion balance (APHA)	%	-8.48
8	12	2022	RG_SCDSB	RG_SCDSB	Iron (Fe)-Dissolved	mg/L	0.026
8	12	2022	RG_SCDSB	RG_SCDSB	Iron (Fe)-Total	mg/L	0.038
8	12	2022	RG_SCDSB	RG_SCDSB	Lead (Pb)-Dissolved	mg/L	<0.00005
8	12	2022	RG_SCDSB	RG_SCDSB	Lead (Pb)-Total	mg/L	<0.00005
8	12	2022	RG_SCDSB	RG_SCDSB	Lithium (Li)-Dissolved	mg/L	0.0783
8	12	2022	RG_SCDSB	RG_SCDSB	Lithium (Li)-Total	mg/L	0.0803
8	12	2022	RG_SCDSB	RG_SCDSB	Magnesium (Mg)-Dissolved	mg/L	85.2
8	12	2022	RG_SCDSB	RG_SCDSB	Magnesium (Mg)-Total	mg/L	101
8	12	2022	RG_SCDSB	RG_SCDSB	Manganese (Mn)-Dissolved	mg/L	0.0101
8	12	2022	RG_SCDSB	RG_SCDSB	Manganese (Mn)-Total	mg/L	0.0119
8	12	2022	RG_SCDSB	RG_SCDSB	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	12	2022	RG_SCDSB	RG_SCDSB	Mercury (Hg)-Total	mg/L	<0.000005
8	12	2022	RG_SCDSB	RG_SCDSB	MeSe(IV) - Methylseleninic Acid	mg/L	0.00002
8	12	2022	RG_SCDSB	RG_SCDSB	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
8	12	2022	RG_SCDSB	RG_SCDSB	Molybdenum (Mo)-Dissolved	mg/L	0.00391
8	12	2022	RG_SCDSB	RG_SCDSB	Molybdenum (Mo)-Total	mg/L	0.00496
8	12	2022	RG_SCDSB	RG_SCDSB	Nickel (Ni)-Dissolved	mg/L	0.00466
8	12	2022	RG_SCDSB	RG_SCDSB	Nickel (Ni)-Total	mg/L	0.0063
8	12	2022	RG_SCDSB	RG_SCDSB	Nitrate (as N)	mg/L	25.6
8	12	2022	RG_SCDSB	RG_SCDSB	Nitrite (as N)	mg/L	0.0065
8	12	2022	RG_SCDSB	RG_SCDSB	ORP	mV	417
8	12	2022	RG_SCDSB	RG_SCDSB	Orthophosphate	mg/L	0.0024
8	12	2022	RG_SCDSB	RG_SCDSB	pH, Field	pH	7.96
8	12	2022	RG_SCDSB	RG_SCDSB	pH, Lab	pH	8.26
8	12	2022	RG_SCDSB	RG_SCDSB	Phosphorus (P)-Total	mg/L	0.0093

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	12	2022	RG_SCDSB	RG_SCDSB	Potassium (K)-Dissolved	mg/L	2.1
8	12	2022	RG_SCDSB	RG_SCDSB	Potassium (K)-Total	mg/L	2.32
8	12	2022	RG_SCDSB	RG_SCDSB	Se(IV) - Selenite	mg/L	0.000223
8	12	2022	RG_SCDSB	RG_SCDSB	Se(VI) - Selenate	mg/L	0.0822
8	12	2022	RG_SCDSB	RG_SCDSB	SeCN - Selenocyanate	mg/L	<0.00001
8	12	2022	RG_SCDSB	RG_SCDSB	Selenium (Se)-Dissolved	mg/L	0.0819
8	12	2022	RG_SCDSB	RG_SCDSB	Selenium (Se)-Total	mg/L	0.08555
8	12	2022	RG_SCDSB	RG_SCDSB	Selenium Unknown	mg/L	<0.00001
8	12	2022	RG_SCDSB	RG_SCDSB	Selenosulphate	mg/L	<0.00001
8	12	2022	RG_SCDSB	RG_SCDSB	SeMe - Selenomethionine	mg/L	<0.00001
8	12	2022	RG_SCDSB	RG_SCDSB	Silicon (Si)-Dissolved	mg/L	1.66
8	12	2022	RG_SCDSB	RG_SCDSB	Silicon (Si)-Total	mg/L	1.84
8	12	2022	RG_SCDSB	RG_SCDSB	Silver (Ag)-Dissolved	mg/L	<0.00001
8	12	2022	RG_SCDSB	RG_SCDSB	Silver (Ag)-Total	mg/L	<0.00001
8	12	2022	RG_SCDSB	RG_SCDSB	Sodium (Na)-Dissolved	mg/L	4.08
8	12	2022	RG_SCDSB	RG_SCDSB	Sodium (Na)-Total	mg/L	4.82
8	12	2022	RG_SCDSB	RG_SCDSB	Specific Conductivity	uS/cm	1507
8	12	2022	RG_SCDSB	RG_SCDSB	Strontium (Sr)-Dissolved	mg/L	0.202
8	12	2022	RG_SCDSB	RG_SCDSB	Strontium (Sr)-Total	mg/L	0.229
8	12	2022	RG_SCDSB	RG_SCDSB	Sulphate	mg/L	534
8	12	2022	RG_SCDSB	RG_SCDSB	Sulphur (S)-Dissolved	mg/L	184
8	12	2022	RG_SCDSB	RG_SCDSB	Sulphur (S)-Total	mg/L	178
8	12	2022	RG_SCDSB	RG_SCDSB	Temperature, Field	deg c	0.2
8	12	2022	RG_SCDSB	RG_SCDSB	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	12	2022	RG_SCDSB	RG_SCDSB	Thallium (Tl)-Total	mg/L	<0.00001
8	12	2022	RG_SCDSB	RG_SCDSB	Tin (Sn)-Dissolved	mg/L	<0.0001
8	12	2022	RG_SCDSB	RG_SCDSB	Tin (Sn)-Total	mg/L	<0.0001
8	12	2022	RG_SCDSB	RG_SCDSB	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	12	2022	RG_SCDSB	RG_SCDSB	Titanium (Ti)-Total	mg/L	<0.0003
8	12	2022	RG_SCDSB	RG_SCDSB	Total Dissolved Solids	mg/L	1160
8	12	2022	RG_SCDSB	RG_SCDSB	Total Kjeldahl Nitrogen	mg/L	0.615
8	12	2022	RG_SCDSB	RG_SCDSB	Total Organic Carbon	mg/L	<0.5
8	12	2022	RG_SCDSB	RG_SCDSB	Total Suspended Solids	mg/L	1
8	12	2022	RG_SCDSB	RG_SCDSB	Turbidity, Lab	NTU	0.37
8	12	2022	RG_SCDSB	RG_SCDSB	Uranium (U)-Dissolved	mg/L	0.00526
8	12	2022	RG_SCDSB	RG_SCDSB	Uranium (U)-Total	mg/L	0.00596
8	12	2022	RG_SCDSB	RG_SCDSB	Vanadium (V)-Dissolved	mg/L	<0.0005
8	12	2022	RG_SCDSB	RG_SCDSB	Vanadium (V)-Total	mg/L	<0.0005
8	12	2022	RG_SCDSB	RG_SCDSB	Zinc (Zn)-Dissolved	mg/L	0.0027
8	12	2022	RG_SCDSB	RG_SCDSB	Zinc (Zn)-Total	mg/L	<0.003
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Acidity (as CaCO3)	mg/L	2.45
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	233
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	240.91
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.00155
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Aluminum (Al)-Total	mg/L	0.0044
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Ammonia, Total (as N)	mg/L	0.00875
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.000275
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Antimony (Sb)-Total	mg/L	0.00028
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00011
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Arsenic (As)-Total	mg/L	0.000135
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0896
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Barium (Ba)-Total	mg/L	0.08605
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Boron (B)-Dissolved	mg/L	0.012
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Boron (B)-Total	mg/L	0.013
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Bromide (Br)	mg/L	<0.25
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.00010285
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0001015
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Calcium (Ca)-Dissolved	mg/L	184.5
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Calcium (Ca)-Total	mg/L	179
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Chloride (Cl)	mg/L	4.685
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.000105
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Chromium (Cr)-Total	mg/L	0.00011
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.000105
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Cobalt (Co)-Total	mg/L	0.0001
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Conductivity	uS/cm	1390
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Conductivity, Field	uS/cm	1463
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Copper (Cu)-Dissolved	mg/L	0.00024
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Dissolved Organic Carbon	mg/L	0.705
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Dissolved Oxygen, Field	%	81.4
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Dissolved Oxygen, Field	mg/L	12.09
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Fluoride	mg/L	0.1395
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	848.5
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Iron (Fe)-Total	mg/L	0.032
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.07905
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Lithium (Li)-Total	mg/L	0.0814
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	94.2
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Magnesium (Mg)-Total	mg/L	98.6
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.009825
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Manganese (Mn)-Total	mg/L	0.01005
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Mercury (Hg)-Total	mg/L	<0.0000005
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.005765
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00522
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00876
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Nickel (Ni)-Total	mg/L	0.00878
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Nitrate (as N)	mg/L	27.95
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Nitrite (as N)	mg/L	0.0125
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	ORP	mV	428.5
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	ORP, Field	mV	185.8
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Orthophosphate	mg/L	0.01275
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	pH, Field	pH	8.145
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	pH, Lab	pH	7.975
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Phosphorus (P)-Total	mg/L	0.0128
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Potassium (K)-Dissolved	mg/L	2.935
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Potassium (K)-Total	mg/L	2.885
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Se(IV) - Selenite	mg/L	0.000343
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	Se(VI) - Selenate	mg/L	0.105
6	1	2022	FR_SCOUTDS (RG_SCOUTDS)	FR_SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.115333333
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.105333333
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.035
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.17
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	6.44
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	6.68
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.2275
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.219
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	533
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.05
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000011
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.000012
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1125
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	<0.05
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.09
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	<1
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.305
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.005805
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00627
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.00465
6	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0051
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	217
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	21.6
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	237.095
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0054
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0205
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00026
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00029
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.0001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00012
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.084
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0927
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.011
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.011
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000891
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000948
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	179
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	167
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	7.02
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	<0.0001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1410
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0002
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.78
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	13.34
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.169
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	844
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.014
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.036
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0772
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0775
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	96.3
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	100
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0111
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0118
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00612
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00584
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.0074
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.0079
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	27.2
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0073
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	331
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	30.7
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0085
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.53
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.47
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0154
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.62
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.73
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000314
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0841
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.08575
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0877
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.96
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.12
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	4.93

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	5.3
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.237
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.218
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	584
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.5
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1050
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	<0.05
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.06
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	7.3
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	2.05
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00544
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00608
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.004
13	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0058
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	2.2
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	262
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as HCO3)	mg/L	318
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CO3)	mg/L	<1
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as OH)	mg/L	<1
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	262
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0014
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.00435
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0336
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Anion Sum	meq/L	20.6
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.001395
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.000335
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00011
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00012
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.08235
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.08045
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.0115
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.012
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.00010065
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000110533
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	194.5
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	191
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cation - Anion Difference	%	5.37
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cation - Anion Ratio	%	89.8
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cation Sum	meq/L	18.5
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	7.165
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.000115
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.000105
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.0001
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1520
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity, Field	uS/cm	1032
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	0.000235
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.965
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	%	85.5
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	12.935
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.1415
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	943
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.0115
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.025
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	0.0000635
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.08005
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0789
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	111
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	109
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0105
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.01085
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.0000005
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.0000105
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00631
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.006615
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.008295
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00843
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	27.65
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0076
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	397.5
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	102.3
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0031
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.28
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.215
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0067
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.72
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.67
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000295333
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.10025
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.11325
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.106533333
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.12
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.065
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	4.685
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	4.66

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Specific Conductivity	uS/cm	1944
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.2235
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.23
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	626.5
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphur (S)-Dissolved	mg/L	216
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphur (S)-Total	mg/L	212
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.5
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.00001
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.0000125
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1260
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.3045
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.995
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	3
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.29
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.006385
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00682
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.00635
20	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.00515
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	258
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	4.6
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	262
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.001
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0044
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00028
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00029
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	<0.0001
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00011
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0887
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0878
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.012
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000997
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000956
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	195
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	185
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	6.22
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00016
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00013
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00012
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1510
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	0.00022
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.9
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	13.75
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMS ₂ SeO - Dimethylselenoxide	mg/L	<0.00001
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.103
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	928
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.047
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.044
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0822
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0768
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	107
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	111
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.013
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0131
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00635
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00668
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00842
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00866
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	25.4
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0079
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	294
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	94.2
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.004
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.39
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.3
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0101
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.88
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.8
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000296
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0952
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.10695
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.1095
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.17
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	4.89
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	5.08
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.234
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.247
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	550
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.4
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000011
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	0.00026
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1180
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.388

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.8
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	1.7
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.34
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00612
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00704
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0041
27	1	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0047
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	262
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	262
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0024
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0038
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00028
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00029
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	<0.0001
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00012
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.083
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.085
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.012
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.012
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000906
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000095
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	191
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	200
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	9.3
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00011
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00011
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1600
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	0.00031
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.98
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	13.43
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.145
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	959
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.021
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0758
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0784
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	117
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	120
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0103
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.011
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000014
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00824
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00893
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00847
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00893
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	27.8
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0067
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	452
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	118.2
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.012
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.54
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.27
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0126
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	3.77
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	4.1
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000305
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.102
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.1068
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.108
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.97
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.13
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	4.68
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	4.94
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.23
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.233
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	632
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.3
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1260
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	1.03
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.18
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.2
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.25
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00681
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00694
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0048
3	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0059
8	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000013
8	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
8	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000291
8	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0923
8	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
8	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0873
8	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0891
8	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
8	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
8	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	229
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	9.2
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	238
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.001
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0124
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00026
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00028
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	<0.0001
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00011
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0789
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.088
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.012
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.011
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000745
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000815
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	173
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	184
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	8.11
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00013
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.0001
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00014
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1430
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0002
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.76
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	12.93
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.403
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	852
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.015
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.054
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0786
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0829
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	102
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	107
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0139
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0172
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000069
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000013
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00563
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00606
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00679
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00745
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	28
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0411
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	433
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	104.7
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0045
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.75
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.35
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0081
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.64
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.86
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000268
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0873
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.09775
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0962
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.91
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.11
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	4.49
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	4.62
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.224
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.221
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	547
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	1.1
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.00001
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1060
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	<0.05
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.52
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.8
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.68
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00596
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00642
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0042
10	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0056

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	240
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as HCO3)	mg/L	292
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CO3)	mg/L	<1
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as OH)	mg/L	<1
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	240
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0015
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0056
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0119
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Anion Sum	meq/L	18.4
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00032
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00032
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00017
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00012
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0831
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.089
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.01
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.013
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000102
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000132
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	183
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	193
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cation - Anion Balance	%	94
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cation Sum	meq/L	17.3
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	2.02
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00013
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.0001
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00012
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1430
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity, Field	uS/cm	873
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	0.00022
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.64
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	%	84.6
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	12.25
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.136
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	854
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ion balance (APHA)	%	3.08
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.018
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.037
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0751
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0836
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	96.4
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	108
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0129
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0145
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.0035
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00364
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00987
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.0107
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	30.5
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0203
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	387
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.18
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.29
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0025
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.57
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.76
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000286
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0954
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.134
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.1335
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.96
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.12
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	3.21
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	3.74
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Specific Conductivity	uS/cm	1660
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.23
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.23
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	546
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphur (S)-Dissolved	mg/L	166
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphur (S)-Total	mg/L	200
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.2
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000014
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.000014
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1190
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	<0.05
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.54
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.4
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.51
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.0062
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.006
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0092

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0066
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	221
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	14
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	235
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.003
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0046
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0136
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00027
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00029
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00011
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00014
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0834
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0897
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.012
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.014
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000856
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0001
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	190.5
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	191
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	7.92
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00016
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.0001
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00013
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1490
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.88
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	13.81
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.168
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	916
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.016
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.039
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0849
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0854
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	107
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	104
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0136
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0156
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000173
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00579
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00639
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00769
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00852
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	28.9
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0178
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	235
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	96.4
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0055
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.54
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.36
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0069
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	3.415
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	3.57
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000318
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0997
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.09245
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0984
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.06
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.18
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	4.52
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	4.83
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.234
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.242
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	590
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.4
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000013
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.00001
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.01
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.01
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1190
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.348
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.98
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.58
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00588
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00646
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0088
17	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.006
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	249
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	249
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.003
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0045
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00024
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00023
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.0001
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00011
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0851
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0841
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.013
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.012
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000669
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000632
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	193
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	196
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	12.2
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00022
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00018
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00011
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00011
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1520
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.78
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	13.65
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.136
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	953.5
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.014
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.024
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.086
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.08
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	114.5
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	112
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0133
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.013
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.0000005
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000011
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00871
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.0086
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00561
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00535
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	26.3
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0149
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	429
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	37.5
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0127
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.31
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.3
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.014
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.745
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.98
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000219
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0693
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0747
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0764
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.09
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.07
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	5.955
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	5.8
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.227
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.225
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	641
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.4
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.01
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.01
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1260
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.351
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.74
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.9
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.46
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00657
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00634
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	<0.003
24	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0082
25	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	14.02
25	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	-26.1
25	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.58
25	2	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.5
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	250
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	250
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.003
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0058
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00027
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00026
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	<0.0001
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.0001
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0858

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0936
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.012
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.012
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000826
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000765
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	193.5
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	172
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	6.8
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00031
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00012
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.0001
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1420
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.75
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	12.93
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.111
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	917.5
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	822
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.019
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.04
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0903
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.085
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	105.5
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	95.2
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0143
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0142
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000062
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000011
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00605
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00553
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00678
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00615
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	23.1
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0084
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	373
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	96.8
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0056
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.32
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.19
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0086
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.54
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.92
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000224
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0847
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.08935
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0915
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.22
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.04
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	5.075
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	4.89
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.239
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.224
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	495
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.7
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.00001
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.01
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.01
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1130
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.202
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.86
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.1
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.52
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.0065
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00575
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0042
3	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0044
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	2
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	267
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	267
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.003
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0085
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0051
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00027
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00032
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.0001
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	<0.0001
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0846
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.093
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.013
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.014
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000652
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000905
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	198
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	204
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	8.8
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00035
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00011
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00012
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00013
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1490
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.51
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	13.25
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.144
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	949.5
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	983
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.059
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0902
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0951
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	110.5
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	115
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0161
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0173
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.0000005
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000014
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00605
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00648
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00661
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00709
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	28
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0104
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	451
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	86.5
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0038
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.37
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.12
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0068
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.92
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	3.19
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000247
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0839
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0934
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.09765
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.99
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.27
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	5.5
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	5.88
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.238
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.26
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	586
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.6
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.01
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.01
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1200
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	<0.05
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.66
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	3.2
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.49
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00601
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.0069
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0041
10	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0046
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	249
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as HCO3)	mg/L	304
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CO3)	mg/L	<1
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as OH)	mg/L	<1
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	249
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.002
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0336
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0101
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Anion Sum	meq/L	19
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00027
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00029
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	<0.0001
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00016
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.087
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0867
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.012
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.013
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000077
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000089
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	177
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	196

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cation - Anion Balance	%	91.6
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cation Sum	meq/L	17.4
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	6.2
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00015
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.0001
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00017
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1450
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity, Field	uS/cm	773
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	0.00024
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.98
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	%	87.2
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	12.03
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.136
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	854
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ion balance (APHA)	%	4.4
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.016
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.107
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	0.000074
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.084
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.091
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	100
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	94.5
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.017
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0193
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.00000051
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000026
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00517
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00554
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00696
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.007
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	27.6
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0115
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	488
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0091
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.19
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.27
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0146
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	3.58
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	3.34
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000233
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0858
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.096466667
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.096133333
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.04
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.26
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	5.05
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	4.78
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Specific Conductivity	uS/cm	1383
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.224
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.233
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	572
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphur (S)-Dissolved	mg/L	197
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphur (S)-Total	mg/L	208
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	1.9
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	0.00073
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1210
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.371
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.05
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	5.9
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	3.32
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00601
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00637
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0035
15	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.004
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	273
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	273
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.003
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0423
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.009
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00033
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00032
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00016
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00022
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0927
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0948
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.012
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.013
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000106
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000145
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	178.5
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	192
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	2.99
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00023

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00013
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00023
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1310
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.72
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	12.36
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.138
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	861.5
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	924
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.225
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	0.000213
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0886
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0866
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	101
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	108
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0166
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0221
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.00000154
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00322
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00311
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00921
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00989
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	30
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0189
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	490
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	68.2
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.28
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.09
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0193
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.645
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.71
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000271
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.109
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.113
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.116
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.1
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.07
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	4.045
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	4.09
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.245
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.242
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	514
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.2
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000011
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.000018
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.01
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.01
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1170
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.43
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	5.01
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	30.1
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	23.4
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00605
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00588
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	0.00063
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0053
17	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.007
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	230
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	230
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0041
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0264
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0276
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00042
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00043
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00013
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00018
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0857
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0917
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.012
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.014
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000912
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000121
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	165
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	176
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	6.39
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00017
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00019
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00027
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1290
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.94
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	11.5
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.168
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	776.5
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	810
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.134
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	0.000108
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0729
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0851
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	88.5
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	90
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0119
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0179
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000094
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000013
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00538
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00567
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00812
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00865
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	25.8
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0296
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	349
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	73.7
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0017
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.38
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.25
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.03615
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.785
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	3.12
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000377
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0889
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0876
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.091
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.9
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.13
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	4.175
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	4.34
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.215
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.227
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	503
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	4.8
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000012
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.000014
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.01
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.01
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1010
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.306
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.6
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	7.1
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	2.44
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00536
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00557
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0038
24	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0052
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	215
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	215
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0052
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0694
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.064
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00075
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00074
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00018
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00022
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0965
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.121
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.011
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.011
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000122
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000155
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	136.5
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	138
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	4.68
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00026
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00049
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00057
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1090
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	0.0013
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	0.00147
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	1.32
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	13.61
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.167
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	620
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	636
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.089
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	0.000089
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.058

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0553
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	67.8
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	70.9
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00889
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0123
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000082
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.0057
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00546
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.0104
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.0111
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	21.3
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0518
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	510
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	14.8
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.7
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.26
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0131
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.24
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.44
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000411
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0709
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0799
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.07975
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.99
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	3.125
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	3.36
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.206
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.202
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	387
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	1.8
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000014
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.000017
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.01
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.01
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	799
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.51
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	2.15
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	6.2
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	5.13
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00452
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00426
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	0.00054
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0075
31	3	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0161
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	223
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	3.8
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	226
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.003
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0174
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0627
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00085
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00081
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00021
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.0002
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.102
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.107
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.014
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.012
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000153
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000157
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	165.5
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	158
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	5.47
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00012
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00013
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00069
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00069
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1270
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.99
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	11.9
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.184
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	755.5
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	738
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.079
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.053
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0822
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.077
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	83.1
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	83.5
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0114
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0125
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00703
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00691
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.0146
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.0144
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	27.1
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0755
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	410
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	55.9
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0014
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.35
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.29
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0059
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.79
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	3.04
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000423
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0885
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.09845
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0974
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.22
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.23
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	3.9
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	3.85
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.266
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.267
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	470
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	2.6
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000017
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.000018
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.01
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.01
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	972
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	<0.05
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.29
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	3.1
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	1.32
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.0055
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00525
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0071
7	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0074
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	234
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	234
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0037
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0191
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0086
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00046
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00046
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	<0.0001
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00014
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0873
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0873
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.013
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.014
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.00018
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000191
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	164.5
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	178
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	5.01
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00014
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00011
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00031
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00032
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1320
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	1.64
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	13.5
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.153
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	764
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	809
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.013
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.049
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0818
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0908
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	85.75
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	88.6
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0118
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0128
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000055
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000021
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00506
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00569
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.0134
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.0139
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	27
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0184
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	509

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	-38.2
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.68
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.22
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0023
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.565
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.77
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000415
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.108
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.1021
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.10175
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.86
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	3.825
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	4.24
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.235
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.237
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	446
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.3
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000013
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.000014
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.01
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.01
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1040
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	<0.05
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.73
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	3.3
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	1.75
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.0057
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.0057
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0105
14	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0107
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	210
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	10.8
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	220
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0035
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0135
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00043
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00046
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00026
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00017
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0801
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0816
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.013
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.011
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000181
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000194
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	168
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	162
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	3.28
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00015
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00011
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.0002
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.0002
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1320
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	1.06
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	10.88
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	0.000017
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.147
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	764
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	739
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.018
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.041
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0743
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0733
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	83.75
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	81.3
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00799
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00872
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000188
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000021
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00335
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00316
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.0124
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.0124
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	30.45
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0133
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	442
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	80.4
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.37
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.4
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0074
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.55
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.69

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000472
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.128
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.117
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.12066667
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.66
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.66
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	3.045
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	3.01
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.208
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.21
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	470
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	5.3
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000015
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.000015
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.01
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.01
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1030
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.348
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	3.18
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.4
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.79
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00552
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00553
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	0.00056
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.007
21	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0076
22	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	10.44
22	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	31.05
22	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	49.6
22	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.32
22	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	6.4
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	176
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	5.2
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	181
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0083
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.068
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00029
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.0003
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00012
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00014
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0647
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0694
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.011
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.011
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000196
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000213
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	128.5
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	125
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	4.9
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00012
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00016
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00059
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00063
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	992
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	0.00053
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	0.00054
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	2.12
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	12.07
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSO - Dimethylselenoxide	mg/L	<0.00001
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.16
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	577
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	562
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.01
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.067
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0492
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0492
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	62.15
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	60.8
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0108
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0128
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000132
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000015
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00458
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00337
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.0115
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.0121
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	20.3
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0091
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	471
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	4.1
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.38
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.36
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0101
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.19
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.24
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000331
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0686
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.07265
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.07
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.83
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.82
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	3.075
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	3.11
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.158
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.161
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	355
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	2.5
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000011
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.000014
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.01
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.01
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	771
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.346
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	2.79
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	7.6
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	2.18
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00393
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00367
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.009
28	4	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0091
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	159
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	159
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0092
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0582
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00024
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00024
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.0002
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00013
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.053
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0543
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	<0.01
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.01
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000154
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000161
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	103.5
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	106
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	1.8
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00013
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00018
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00024
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00029
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	896
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	0.00052
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	5.31
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	11.35
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	<0.1
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	467
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	463
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.068
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0348
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0355
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	50.6
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	48.2
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00684
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00985
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.00000105
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000012
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00244
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00239
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00827
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00808
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	7.75
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	<0.005
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	459
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	21.8
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.61
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.21
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0115
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	1.69
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	1.71
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000275
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0633
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.06175
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0609
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.8
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.93
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	2.165
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	2.09
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.135
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.135
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	360
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	6
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000011
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.000011
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.01
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.01
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	687
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.404
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	3.34
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	6.9
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	1.36
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00282
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00294
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0065
5	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0072
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	184
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	4
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	188
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0035
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0221
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00029
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00027
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00016
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00011
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0541
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0544
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.011
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.01
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000149
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000177
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	117.5
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	128
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	3.27
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00022
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.0001
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00019
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00021
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	931
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	0.00089
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	2
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	11.75
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.126
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	531.5
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	559
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.033
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0477
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0463
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	57.9
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	58.2
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00752
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00779
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000074
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000015
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00336
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00334
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00918
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00898
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	18.7
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0128
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	486
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	223.5
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0108
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.34
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.35
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0171
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	1.98
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.04
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000267
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0633
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0705
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.071933333
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.63
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.64
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	2.815
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	3.03
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.156
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.156
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	280
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	4.6
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.00012
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.01
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.01
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	666
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.302
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.92
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	1.6
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.76
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00352
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00341
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0064
12	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0071
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	181
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	181
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0041
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0234
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.005
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00024
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00024
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00013
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00018
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0476
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0507
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	<0.01
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	<0.01
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000124
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000137
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	93.05
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	99.1
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	0.79
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00012
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00015
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00011
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00012
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	776
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	1.72
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	12.66
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.141
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	426.5
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	444
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.025
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0379
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0342
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	47.25
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	47.8
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00323
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00434
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000081
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00149
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00158
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00676
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.0068
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	14.3
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0057
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	345
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	265.4
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.42
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.3
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0038
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	1.575
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	1.59
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000207
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.057
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.06095
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.05705
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.74
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.67
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	1.675
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	1.63
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.126
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.134
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	224
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	4.6
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.01
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.01
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	565
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.256
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.61

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	3
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.68
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00272
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00256
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0052
19	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0061
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	155
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	8.6
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	164
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0034
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0344
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00019
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00019
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00011
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00019
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0468
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0465
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	<0.01
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	<0.01
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000685
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000083
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	83.75
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	84.8
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	2.1
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.0001
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00016
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	685
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	1.58
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	11.91
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.178
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	375
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.043
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.03
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0288
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	41
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	39.7
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00296
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00479
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.00000108
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00228
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00223
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00418
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00431
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	9.85
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0051
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	317
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	230.9
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.35
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.4
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0067
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	1.385
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	1.38
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000177
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0393
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0403
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.03775
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.52
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.63
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	1.96
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	1.94
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.125
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.119
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	184
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	5.6
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	0.00093
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	430
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.494
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	2.41
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	3
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.81
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00231
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00227
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0039
26	5	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0041
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	151
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	151
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0054
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0279
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00017
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00014
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00012
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00015
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0382
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0398
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	<0.01
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	<0.01
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000603
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000058
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	61.1
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	62.5
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	1.44
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00013
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	528
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	3.95
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	11.5
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.161
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	271
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.021
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0178
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0189
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	29.9
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	30
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00195
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00295
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000054
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000014
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00186
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00173
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00306
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00279
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	6.18
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0025
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	246
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	225
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0013
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.23
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.26
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0097
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	0.994
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	1
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000109
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0237
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.02655
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.02385
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.59
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.56
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	1.395
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	1.61
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.0856
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.0956
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	121
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	6.2
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0006
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	328
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.481
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.59
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	3.5
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.59
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00145
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00167
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	0.00051
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0032
2	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0033
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	89.4
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	89.4
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0048
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0866
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00015
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00013

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00013
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.0002
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0353
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0367
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	<0.01
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	<0.01
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000232
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000636
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	51.65
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	50.7
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	0.24
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00011
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00026
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00017
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	357
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	1.97
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	11.11
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.061
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	208
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.115
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	0.000088
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.015
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0153
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	21.8
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	21.3
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00159
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0399
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.00000167
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000012
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00128
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00131
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00212
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00254
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	2
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.001
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	358
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	120.8
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.08
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	7.97
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0177
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	0.839
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	0.89
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000079
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0159
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0171
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0157
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.86
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.76
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	1.15
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	1.18
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.0812
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.081
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	89
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	5.3
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	0.0014
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	208
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.302
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	2.34
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	3.7
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	1.97
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00114
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.0012
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	0.00054
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0047
9	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0042
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	124
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as HCO3)	mg/L	151
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CO3)	mg/L	<1
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as OH)	mg/L	<1
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	124
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0089
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.131
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0054
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Anion Sum	meq/L	4.27
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00011
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00013
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00011
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00018
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0314
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0324
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	<0.01
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	<0.01
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000034
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000651
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	46.6
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	47.9
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cation - Anion Balance	%	95.3
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cation Sum	meq/L	4.07
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	0.72
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.0003
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00015
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	362
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity, Field	uS/cm	231.5
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	0.00025
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	2.04
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	%	103.9
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	13.72
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.138
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	200
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ion balance (APHA)	%	2.4
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.184
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	0.000144
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.013
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0126
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	20.4
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	19.5
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00146
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0105
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00112
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00114
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00183
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00237
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	3.51
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.001
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	334
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0014
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.27
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.08
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0068
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	0.799
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	0.797
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000083
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0141
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.014133333
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0149
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.51
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.8
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	0.999
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	0.954
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Specific Conductivity	uS/cm	390.7
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.074
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.0744
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	72.7
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphur (S)-Dissolved	mg/L	22.9
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphur (S)-Total	mg/L	25.3
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	3.7
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	0.00155
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	244
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.758
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.96
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	21.6
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	6.43
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00106
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00101
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	0.00068
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0018
13	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0038
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	142
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	142
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0074
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0799
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0106
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00016
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00016
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00014
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00013
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.036
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0384
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	<0.01
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	<0.01
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000556
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000073
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	57.4
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	55.6
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	1.04
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00013
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00021
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00012
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	463
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	0.00052
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	2.33
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	10.72
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.127
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	250
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	242
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.064
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	0.000061
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0174
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0169
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	26.25
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	25.1
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00257
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00538
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000145
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00159
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00149
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00296
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00324
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	5.27
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0136
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	358
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	145.7
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0048
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.19
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.24
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0133
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	1.025
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	0.997
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000124
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0221
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.02095
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0217
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.81
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.83
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	1.34
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	1.34
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.0892
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.0867
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	99
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	5.9
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	0.00196
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	305
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.304
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	2.09
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	<1
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	3.52
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00138
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00138
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	0.00053
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0035
16	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.005
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	131
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	131
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0055
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.106
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00014
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00013
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.0001
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00015
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0308
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0327
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	<0.01
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	<0.01
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000283
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000577
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	48.05
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	51.5
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	0.96

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.0001
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00027
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00011
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	370
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	1.6
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	11.39
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.147
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	199
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	214
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.145
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	0.000077
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0133
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0134
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	20.1
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	20.7
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0017
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00756
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000106
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00136
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00131
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00235
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00244
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	3.41
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	<0.001
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	308
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	300
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0046
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.11
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.15
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0166
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	0.8195
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	0.878
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000096
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0127
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.01365
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0136
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.78
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.86
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	1.065
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	1.09
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.0789
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.0773
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	71.2
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	5.2
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	0.00157
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	262
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.303
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.88
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	14.9
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	4.9
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00113
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00109
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	0.00068
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0041
23	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0074
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	167
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	167
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0041
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0374
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00014
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00014
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00011
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00016
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0343
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0325
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	<0.01
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	<0.01
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000491
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000568
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	58.05
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	60.1
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	1.33
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00017
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	452
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	1.43

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	11.37
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.143
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	254
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.052
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0205
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0181
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	24.35
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	25.8
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00193
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00424
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000102
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00163
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00161
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00253
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00285
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	5.28
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0015
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	386
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	301.8
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0018
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.21
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	7.93
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0085
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	1.025
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	1.06
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000112
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0214
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.02065
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0209
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.73
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.74
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	1.34
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	1.35
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.0881
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.0858
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	103
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	6
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	0.00052
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	296
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.092
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.82
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	3.9
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	1.25
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00142
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00146
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	<0.003
30	6	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	<0.003
2	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	6.46
2	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0297
3	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	6.9389
3	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	<0.015
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	136
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	136
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0031
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.038
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	<0.0001
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00013
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.0001
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00014
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0325
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0323
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	<0.01
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	<0.01
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000498
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000561
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	60.6
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	56.6
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	1.64
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00011
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00016
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	453
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	0.00027
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	1.38
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	%	85.8
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	10.03
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.144
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	261
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.046
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	0.000051
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0184
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0189
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	26.7
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	24.2
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.002
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00489
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00172
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00174
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00259
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00254
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	4.8
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0029
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	359
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	128.2
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.17
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.27
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0128
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	0.99
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	0.988
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0227
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0198
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.61
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.67
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	1.61
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	1.59
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.0856
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.0802
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	98.1
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	8.5
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	0.00091
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	300
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.396
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.54
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	5.6
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	2.84
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00142
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00143
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0028
5	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	<0.003
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	137
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	3
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	140
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.003
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0264
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	<0.0001
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00013
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00012
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00013
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0326
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0325
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	<0.01
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	<0.01
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000506
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000527
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	63.6
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	59.1
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	1.69
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00011
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00013
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	475
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	0.00036
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	1.46
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	%	85.7
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	10.56
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.145
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	274
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.031
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0207
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0195
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	28.1
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	25.6
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00227
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00386
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00194
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00182
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00278
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00264
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	5.07
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0045
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	381

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	147.8
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0037
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.05
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.31
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0102
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	1.02
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	1.01
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.023
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0214
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.6
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.64
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	1.68
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	1.64
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.0865
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.0819
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	103
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	6.3
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	0.00059
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	314
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.341
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.44
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	3.8
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Field	NTU	3
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	1.57
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00151
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00149
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0043
6	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.003
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	136
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	2.5
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	139
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.00905
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0303
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.000135
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00016
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.000105
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00012
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0347
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.03465
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	<0.01
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	<0.01
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.00005165
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000632
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	59.36666667
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	62.05
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	1.75
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.0001
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.000145
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	449
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0002
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	0.00168
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	1.035
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	%	83.9
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	10.01
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.17
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	259
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.0405
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	0.0000595
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.02115
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.02125
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	25.76666667
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	26.1
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00201
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.003755
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.00000111
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000011
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00187
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.001955
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.002645
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.002745
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	5.815
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.00445
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	348
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	216.25
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.00245
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.25
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.37
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0088
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	1.03
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	1.01
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000114
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0198
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.021466667
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.021366667
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.575
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.61
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	1.616666667
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	1.65
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.0871
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.0929
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	114.5
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	8.7
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	0.0003
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	0.00054
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	318
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.357
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.255
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	1.9
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.76
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.001465
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00152
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0023
7	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.00435
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	143
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	143
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0026
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0194
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00012
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00015
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	<0.0001
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00013
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0326
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0328
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	<0.01
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	<0.01
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000486
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000623
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	56.7
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	57.9
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	1.21
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00012
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	468
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	0.00027
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	1.21
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	%	93.7
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	8
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.164
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	244
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.026
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0195
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0194
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	24.9
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	25.6
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00182
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00296
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.0015
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00162
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00263
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00277
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	5.27
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0026
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	312
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	152.2
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0015
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.3
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.44
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0066
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	0.944
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	0.969
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0237
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0229
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.49
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.59
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	1.38
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	1.4
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.0806
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.0876
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	102
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	13.5
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	309
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.369
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.15
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	3.2
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	1.19
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00142
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00138
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0026
8	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0031
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	151
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	151
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0021
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0172
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00016
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00016
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	<0.0001
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00012
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0363
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0368
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	<0.01
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	<0.01
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000888
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000882
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	63.9
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	64
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	0.42
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00012
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	534
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0002
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.94
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	%	87.2
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	9.99
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.155
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	290
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.022
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.023
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0222
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	31.6
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	29.1
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00225
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00373
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.0015
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00142
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00417
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00418
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	7.12
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0037
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	346
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	132.1
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.04
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	7.99
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0076
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	1.16
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	1.11
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0401
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0377
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.53
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.61
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	1.18
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	1.16
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.0942
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.0928
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	143
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	9.3
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	363
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.336
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.07
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	1.27
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00174
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00172
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0048
9	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0048
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	144
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	3.4
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	147
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0039
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0347

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00017
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00016
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00014
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00012
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.038
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0365
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	<0.01
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	<0.01
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000575
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000638
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	69.25
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	64.6
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	1.75
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00016
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	525
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.8
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	10.56
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.162
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	307
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.047
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0252
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0204
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	31
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	31.3
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00225
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00368
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000094
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000014
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00201
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00202
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00301
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00318
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	6.66
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0027
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	326
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	248
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0019
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.36
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.35
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.008
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	1.165
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	1.16
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000111
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0249
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0259
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0262
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.52
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.59
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	1.77
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	1.67
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.0992
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.0916
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	138
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	8.7
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	0.0001
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	0.00054
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	384
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.133
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.3
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.3
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	1.04
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00176
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00173
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	<0.003
14	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0034
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	174
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	174
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.003
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0069
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00019
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00019
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00011
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	<0.0001
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0418
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0408
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	<0.01
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	<0.01
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000103
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000108
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	82.45
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	78.3
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	0.52
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	<0.0001
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	627
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.78
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	10.23
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.177
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	372
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.011
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0303
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0302
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	39.8
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	36.9
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00354
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00377
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.0000005
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000012
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00174
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00164
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.0052
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.005
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	9.08
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0042
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	452
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	281.2
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0012
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.15
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.23
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0027
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	1.415
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	1.29
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000156
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0439
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.04435
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0444
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.64
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.5
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	1.565
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	1.47
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.113
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.112
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	166
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	9.4
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	508
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.286
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.79
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.69
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00212
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00214
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0051
21	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0055
22	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	10.35
22	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	10.4
22	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	270.9
22	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.21
22	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0492
22	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	10.4
22	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Field	NTU	0.76
23	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	9.89
23	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	10.5
23	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	237.6
23	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.18
23	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0502
23	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	11.1
23	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Field	NTU	1.03
24	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	9.87
24	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	11.3
24	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	224.8
24	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.17
24	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0566
24	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	12.1
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	168
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	9.2
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	178

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0038
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0068
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00022
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00019
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	<0.0001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.0001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0462
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0459
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.01
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.01
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000134
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000126
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	100.05
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	103
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	0.75
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	<0.0001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.0001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	788
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.59
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	9.24
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.202
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	435
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.015
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0406
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0401
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	48.1
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	47.3
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00442
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00445
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000055
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000015
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00194
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00188
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00668
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00641
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	13.7
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0076
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	414
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	270.1
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.13
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.34
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0056
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	1.59
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	1.56
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.00018
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0531
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.05995
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.05775
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.75
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.67
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	1.925
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	1.84
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.126
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.126
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	250
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	10.8
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	567
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.402
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	<0.5
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.5
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.51
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00284
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.0028
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.007
28	7	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0077
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	190
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	7
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	198
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.003
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.012
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0051
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00025
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00024
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00012
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00018
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0544
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.059

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.014
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.011
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000161
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000165
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	116.5
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	118
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	0.91
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00012
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00012
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00013
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	912
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	<0.5
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	9.19
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.203
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	536
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.019
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0516
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0456
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	58.4
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	56.2
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00521
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00556
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000069
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000019
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00234
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00239
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00834
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00835
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	15.8
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0115
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	408
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	282.6
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.25
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.3
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0046
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	1.77
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	1.84
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000253
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0803
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.07965
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.08065
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.99
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.9
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	2.05
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	2.13
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.139
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.146
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	290
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	9.9
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.000012
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	721
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.406
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	<0.5
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	1.06
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00366
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.0035
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	0.00052
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0082
4	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0126
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	190
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	25.6
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	215
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0044
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0062
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0051
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.0002
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00021
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00012
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00012
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.059
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0599
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.012
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.012
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000721
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000828

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	114.5
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	113
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	5.4
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00016
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.0001
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	922
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	<0.5
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	9.1
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.161
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	528
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	506
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.028
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0533
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0519
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	57.6
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	54.5
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00645
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00727
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000051
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000021
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00405
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00411
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00538
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00539
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	13.9
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0066
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	338
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	252.4
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0106
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.3
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.5
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0165
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	1.97
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	1.97
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.00018
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0461
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.05105
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.04905
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.97
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.88
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	3.59
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	3.49
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.148
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.148
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	298
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	11.7
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	719
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.304
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	<0.5
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	1.7
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.42
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00358
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00376
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0034
11	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0321
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	223
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	15.2
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	238
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0056
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0064
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00023
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.0002
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00016
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00011
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0664
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0634
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.014
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.012
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000648
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000615
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	129.5
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	130
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	7.81
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00014
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00011
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1070

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.95
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	9.01
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.154
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	631
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	606
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.026
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.022
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0602
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0572
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	70.95
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	68.4
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00736
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00718
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.0000005
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000022
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00589
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00571
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00593
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00582
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	15.9
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	<0.005
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	217
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	280.9
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0129
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.3
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.4
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0203
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.195
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.08
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.00023
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0544
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0503
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.04945
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.06
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.88
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	4.015
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	3.77
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.161
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.16
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	371
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	15
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	767
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.465
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.86
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	1.4
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.49
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00414
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00411
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	0.00056
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.003
18	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0032
19	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	9.46
19	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	141.9
19	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.44
19	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	11
19	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Field	NTU	4.25
24	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	9.99
24	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	15.975065
24	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	<0.015
24	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	283.4
24	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.31
24	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.07
24	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	12.2
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	204
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	10.4
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	214
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0062
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.007
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0055
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00022
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.0002
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00014
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00015
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0679
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0699
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.015
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.013
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.05
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000799
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000966
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	127.5
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	131
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	5.26
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00014

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00013
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	974
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	<0.5
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	11.3
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	0.00013
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.203
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	602
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	626
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.027
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0618
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0544
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	67.2
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	72.7
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00672
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00796
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000019
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00387
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00395
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00626
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00659
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	14.8
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0086
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	298
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	288.9
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0019
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.3
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.35
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0084
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.045
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.1
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000241
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0556
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.05555
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0522
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.21
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	4.02
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	3.86
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.167
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.168
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	314
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	11.3
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	782
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.441
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	<0.5
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	1.9
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.59
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.0038
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00374
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	0.00074
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0044
25	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0052
28	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	10.957205
28	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	<0.015
28	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0552
29	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	12.1
29	8	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0656
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	195
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	16.8
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	212
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0086
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0108
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0074
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00021
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00022
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00013
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00031
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0603
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0645
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.012
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.014
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000611
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000688
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	122
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	128
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	7.95
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00012
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00016
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	972
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	1
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	9.49
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	0.000012
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.2
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	617
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.029
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.028
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0471
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0517
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	67.75
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	70
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00694
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00755
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000006
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000021
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00461
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00487
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00523
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00534
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	13.3
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0084
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	277
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	245.6
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0016
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.3
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.43
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0096
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	1.985
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.07
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000211
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0444
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.04445
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.04505
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.89
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.16
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	5.03
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	5.02
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.156
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.162
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	343
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	12.5
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	733
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.197
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.83
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.2
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.52
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00372
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00357
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	0.00153
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	<0.003
1	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0032
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	234
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	234
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0036
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0079
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.0003
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00029
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00028
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00012
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0696
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0738
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.013
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.013
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000193
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000215
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	152
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	161
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	2.15
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00015
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00015
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00013
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00014
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1170
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	<0.5
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	10.05
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	0.000016
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.186
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	718
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.028
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0639
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0647
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	81.25
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	92
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0065
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00813
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.0000005
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000021
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00176
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00163
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.0122
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.0128
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	22.4
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0068
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	315
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	138.1
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.33
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.24
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0031
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.29
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.51
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.0003
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.102
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.1053
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.1042
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.22
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.37
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	2.63
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	3.06
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.184
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.171
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	458
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	9.6
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000014
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.000012
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	942
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.126
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	<0.5
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.1
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.43
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00492
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00468
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.001
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0098
8	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0112
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	226
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as HCO3)	mg/L	276
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	13.6
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CO3)	mg/L	8.2
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as OH)	mg/L	<1
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	240
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0069
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Anion Sum	meq/L	14.5
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00024
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00022
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	<0.0001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00019
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0796
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0791
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.015
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.014
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000481
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000462
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	141
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	133
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cation - Anion Balance	%	93.8
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cation Sum	meq/L	13.6
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	7.61
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	<0.0001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1150
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity, Field	uS/cm	886
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	0.00021
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	<0.5
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	%	86.7
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	9.583333333
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSO - Dimethylselenoxide	mg/L	<0.00001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.191
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	666
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ion balance (APHA)	%	3.2
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.012

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.018
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0802
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0708
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	76.2
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	79
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00783
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00695
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000026
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00633
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00578
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00637
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00654
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	19.4
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0122
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	326
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.4725
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.41
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0086
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.48
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.5
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000271
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0593
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.064066667
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0624
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.09
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.1
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	4.95
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	5.1
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Specific Conductivity	uS/cm	1152
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.194
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.176
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	390
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphur (S)-Dissolved	mg/L	138
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphur (S)-Total	mg/L	151
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	10.4
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	902
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	2.56
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	<0.5
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	1.8
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.4
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00515
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00454
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0025
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0016
13	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	<0.003
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	241
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	241
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.015
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0167
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0066
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00021
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.0002
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00012
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	<0.0001
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.072
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0724
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.013
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.014
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000704
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000754
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	143.5
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	168
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	6.71
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00014
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00013
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1110
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	<0.5
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	10.4
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.188
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	660
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	797
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.035
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0759
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0789
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	74.7
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	91.6

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00842
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00924
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000054
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000033
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00489
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00497
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00696
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00681
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	18.7
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0055
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	374
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	242.7
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0048
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.37
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.27
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0082
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.33
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.65
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000282
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0628
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0593
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0592
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.01
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.03
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	4.525
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	5.59
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.19
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.182
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	381
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	9
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	875
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	<0.05
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	<0.5
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.3
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.95
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00417
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00474
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0036
15	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0033
22	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	287.7
22	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0879
22	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0914
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	251
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	5.4
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	256
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0084
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0072
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0193
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00031
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00028
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00015
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00014
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0782
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0802
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.013
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.014
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000135
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000133
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	171.5
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	169
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	5.87
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00014
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00011
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00011
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00011
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1210
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	2.77
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	10.3
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	0.000015
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.179
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	745
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.034
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.032
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0811
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0827
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	86.6
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	91.6
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00818
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00829
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000016
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.0048
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00489
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.011
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.0108
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	24.6
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0087
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	232
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0011
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.4
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.31
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0056
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.48
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.58
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000283
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0862
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0927
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0862
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.95
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.86
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	4.77
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	4.5
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.214
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.197
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	445
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	8
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000019
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.00001
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	948
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	<0.05
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.44
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.1
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.41
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00558
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00559
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0065
23	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0067
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	248
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	2.2
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	250
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.003
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0064
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0065
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.0003
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00031
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00012
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00013
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0832
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0857
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.016
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.013
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000176
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000217
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	179
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	184
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	2.3
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.0001
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	<0.0001
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00011
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00012
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1320
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.69
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	4.1
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.173
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	882
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	892
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.014
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.024
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.11
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0938
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	95.3
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	105
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00666
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0069
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000055
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000014
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00307
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00311
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.0141
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.0155
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	29.3
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0127
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	314
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	207.5
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.321
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.28
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.003
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.715
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.59
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000321
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.116
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.1245
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.119
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.06
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.86
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	3.68
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	3.68
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.22
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.209
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	558
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	9.1
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000017
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.000014
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	978
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	<0.05
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.7
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.4
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.67
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00598
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00597
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0091
29	9	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0111
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	275
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	13.2
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	288
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0034
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0087
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00022
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00023
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00011
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00013
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0766
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0845
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.013
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.014
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000554
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000607
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	187
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	207
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	11.9
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00016
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1260
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.85
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	10.48
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	0.000015
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.172
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	914
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.012
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.042
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0784
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0756
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	99.95
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	109
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0091
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0113
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.0000005
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000037
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	0.000021
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00722
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00786
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00688
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00743
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	19.1
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	<0.005
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	285
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	207.9
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0026
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.18
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.39
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0114
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.555
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.74
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000347
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0583
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.06515
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.06365
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.71
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.8
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	5.715
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	6.18
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.208
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.233
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	496
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	6.6
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1050
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	<0.05
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.83
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.3
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.55
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00521
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00609
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	<0.003
6	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0035
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	12.8
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	248
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	248
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0051
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0068
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00029
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00029
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00011
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00012
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.084
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0785
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.015
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.012
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.00026
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.000223
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	180.5
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	166
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	5.97
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00017
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00013
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00014
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00014
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1290
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.63
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	11.11
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.188
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	783
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	815
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.011
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.027
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0831
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0711
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	95.75
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	97.2
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00791
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00784
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00319
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00292
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.014
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.0137
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	26.1
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0079
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	256
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	281.1
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	<0.001
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.14
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.15
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0068
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.525
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.34
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000303
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.109
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.1325
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.1235
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.14
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.73
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	3.195
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	2.93
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.212
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.188
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	517
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	5.7
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000014
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.000014
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	0.00046
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1050
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.415
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.65
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.8
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.54
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00615
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00571
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0125
13	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0119
20	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	11.13
20	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	80.1
20	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.11
20	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0626
20	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.062
20	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	4.8
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	265
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	4.8
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	270
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.00235
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0074
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00025
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00033
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00012
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	<0.0001
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0841
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.082
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.0165
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.016
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.00006175
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000657
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	188.5
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	187
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	11.4
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.000115
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00014
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1300
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	0.00024
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.57
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	0.000014
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.167
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	897
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.013
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.044
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.09595
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.108
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	108
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	102
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00863
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.00991
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000034
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	0.000014
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.007645
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00755
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00856
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00834
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	23.5
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0062
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	297
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0065
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.32
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0135
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.815
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.79
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000281
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0677
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0821
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0715
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00002
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.835
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.75
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	6.65
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	6.37
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.228
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.231
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	493

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.00001
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.000023
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1060
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.376
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.68
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.7
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.65
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.006215
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00617
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	0.00056
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.00305
21	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0035
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	249
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	12.4
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	262
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.003
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.006
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0061
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00022
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00023
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00012
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	<0.0001
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.083
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0813
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.015
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.016
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000707
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000636
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	183
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	197
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	13.3
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00011
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1290
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.51
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	11.34
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	0.000013
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.184
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	872
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	908
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.014
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.044
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.106
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0939
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	99.6
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	101
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.00917
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0105
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.0000005
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000031
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00736
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00818
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.0083
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00878
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	21.9
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0054
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	310
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	208.8
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0128
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.26
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.37
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0178
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.73
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.74
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000316
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0703
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.06485
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.06705
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.84
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.88
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	6.76
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	7.23
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.219
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.246
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	485
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	3.3
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000014
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1070
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.469

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.5
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	1.2
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.4
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00601
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00637
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	<0.003
27	10	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0391
2	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	12.08
2	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	26.7
2	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	187.1
2	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.19
2	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.126
2	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	2.1
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	279
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	16.4
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	295
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.003
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0068
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0131
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00022
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.0002
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	<0.0001
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	<0.0001
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0765
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0745
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.016
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.014
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000674
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000743
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	163
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	164
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	20.8
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00012
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00013
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1230
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.86
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	11.49
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMS ₂ SeO - Dimethylselenoxide	mg/L	<0.00001
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.173
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	760
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	825
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.012
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.04
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0833
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0709
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	93.7
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	101
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0113
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0118
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000032
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	0.000012
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.0064
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00642
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00695
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00693
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	19.5
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.006
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	329
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	208.3
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0013
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.34
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.34
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.009
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.82
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.88
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.00032
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0625
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.067
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.06955
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.9
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.84
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	9.22
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	9.34
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.192
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.197
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	466
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	1.4
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1030
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.453
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.71
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.4

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.52
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00527
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00532
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0036
3	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.004
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	261
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as HCO3)	mg/L	318
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	27.6
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CO3)	mg/L	16.6
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as OH)	mg/L	<1
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	288
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.001
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0054
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0112
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Anion Sum	meq/L	19.9
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00023
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00022
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	<0.0001
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	<0.0001
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0743
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0702
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.015
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.015
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000094
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000895
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	197
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	184
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cation - Anion Balance	%	99
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cation Sum	meq/L	19.7
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	17.1
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00029
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00024
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1510
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity, Field	uS/cm	1000
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	0.00022
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.88
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	%	87.8
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	12.6
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMS _{SeO} - Dimethylselenoxide	mg/L	0.000014
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.175
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	970
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ion balance (APHA)	%	-0.5
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.024
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.041
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0756
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0778
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	116
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	121
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0102
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0115
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000039
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.0114
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.0103
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00689
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00685
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	17.3
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0061
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	292
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0091
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.16
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.51
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0179
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.6
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.62
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000253
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.067
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.105
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.07725
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.08
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.88
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	7.05
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	6.99
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Specific Conductivity	uS/cm	1885
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.216
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.208
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	596
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphur (S)-Dissolved	mg/L	224
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphur (S)-Total	mg/L	201
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.4
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1240
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	1.12
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.04

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.8
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.46
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00765
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00653
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0064
7	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0066
10	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	12.39
10	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	0.000016
10	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000061
10	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	0.000018
10	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	237.8
10	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.21
10	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000311
10	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0744
10	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
10	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0678
10	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
10	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
10	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
10	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	1
16	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	13.28
16	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	25.5
16	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	251.7
16	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.19
16	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.142
16	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.1
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	250
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	24.2
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	274
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0031
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0044
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0067
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00024
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00031
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00012
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00012
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0878
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0812
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.015
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.015
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000775
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000674
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	203.5
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	190
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	12.8
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00014
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00018
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00011
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1440
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.88
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	13.4
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	0.000013
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.186
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	944
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	944
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.012
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.055
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.11
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0795
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	116
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	114
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.012
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0129
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000042
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	0.000018
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00791
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00782
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.0073
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00736
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	21.7
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0059
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	354
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	205.3
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0029
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.4
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.45
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	0.056
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0084
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.775
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.76
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000311
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0788
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.08225
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.08295
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.16
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	7.05
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	7.26
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.241

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.228
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	578
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.7
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1130
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	<0.05
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	1.06
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.4
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.52
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00672
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00644
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0034
17	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0033
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	250
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	31.8
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	282
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.006
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0057
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00023
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00022
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	<0.0002
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00013
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0883
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0877
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00004
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.0001
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	<0.02
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.013
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000617
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000713
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	190.5
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	224
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	12.7
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0002
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00012
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0002
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1440
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.001
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	<0.5
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	12.53
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.169
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	897
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	1050
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.031
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.044
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.0001
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.097
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0991
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	106
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	120
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0132
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0128
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.0000005
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000033
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	0.000016
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00857
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.009
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00662
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.007
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	22.9
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0065
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	316
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	221.9
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.003
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.52
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.49
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	0.168
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0113
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.615
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.77
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000268
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0733
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.079
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.0828
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.93
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.97
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00002
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	5.895
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	6.51
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.249
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.255
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	564
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	2
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00002
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0002
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0006

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1140
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	<0.05
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.6
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	1.4
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.48
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.0067
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00737
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.001
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	<0.006
24	11	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	<0.003
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	313
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	15.8
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	329
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0036
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0099
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	<0.005
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00023
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00024
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	<0.0001
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	<0.0001
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0737
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0713
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.014
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.014
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000651
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000549
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	233
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	224
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	22.6
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00015
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	<0.0001
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00012
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00011
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1670
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.78
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	12.35
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.188
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	1110
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.017
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.052
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.102
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.102
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	135
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	127
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.017
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0161
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.000005
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.0000252
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	0.000029
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.0134
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.0139
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00936
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00868
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	21.5
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0064
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	299
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	221.9
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0118
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.57
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.34
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0291
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	3.07
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	3.13
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000272
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0719
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0798
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.08175
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.9
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.24
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	8.41
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	8.11
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.24
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.252
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	714
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.8
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1400
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.531
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.74
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.62
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00804
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00844
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	<0.003
1	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0037
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	269
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as HCO3)	mg/L	326
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	10.1
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CO3)	mg/L	<1
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as OH)	mg/L	<1
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	279
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.00215
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0036
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.008
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Anion Sum	meq/L	21
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00019
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00019
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	<0.0001
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00011
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.08545
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0866
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.0105
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.0105
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000644
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000712
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	207
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	203
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cation - Anion Balance	%	100
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cation Sum	meq/L	21
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	14.25
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.000175
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00023
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1560
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity, Field	uS/cm	984
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0002
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.56
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	%	86
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	12.975
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMS _{SeO} - Dimethylselenoxide	mg/L	<0.00001
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.176
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	1035
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	1010
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ion balance (APHA)	%	<0.01
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.02
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.0285
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0914
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0855
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	125.3333333
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	130.5
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0122
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.01265
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.0000005
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000039
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	0.000013
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00831
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.008695
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.006445
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00693
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	23
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.00545
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	424.5
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	277.8
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.01155
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.3
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.325
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0201
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.8
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.775
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.0002455
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.07485
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.08165
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.08494
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	1.925
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	1.975
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	6.236666667
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	6.49
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Specific Conductivity	uS/cm	1849
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.2345
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.223
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	648
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphur (S)-Dissolved	mg/L	239
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphur (S)-Total	mg/L	230
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.55
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1360
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.7205
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.55
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	2.25

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.415
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00727
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00712
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0028
8	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	<0.003
13	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	12.19
13	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.45
13	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.8
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	267
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	17
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	284
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.004
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0056
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0071
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00021
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00031
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00011
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.00012
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.09
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0981
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.014
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.014
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000517
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000754
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	189.5
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	214
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	13.7
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00012
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.0001
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1500
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	<0.5
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	13
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.172
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	933
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.019
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.062
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0952
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.112
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	106
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	112
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0159
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0165
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.0000005
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000029
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.0078
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00851
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00738
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00756
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	24.7
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0061
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	423
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	293.4
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0022
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.2
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.41
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0078
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.615
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.82
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000267
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.0803
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0785
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.08125
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.02
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.03
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	6.425
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	6.65
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.244
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.253
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	584
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.7
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1180
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.44
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.58
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	1.5
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.37
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00666
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00773
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	<0.003

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0171
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	273
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	273
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	0.0055
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0067
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0118
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.00035
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00034
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	0.00011
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.0001
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0884
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0869
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.013
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.013
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.000207
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.00023
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	234
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	249
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	3.08
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	0.00043
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00043
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	0.00015
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	0.00015
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1770
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	<0.0005
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.69
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	6.4
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.172
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	1180
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness (as CaCO3)	mg/L	1280
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	<0.01
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.02
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.0904
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.0993
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	154
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	159
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0103
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.0104
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	0.0000059
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00508
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.00512
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.0172
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.0164
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	31.25
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0078
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	399
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	236.7
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0016
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.2
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.21
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0038
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.945
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.93
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.251
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.2225
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.44
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.34
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	3.795
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	3.92
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.246
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.252
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	686
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	0.000018
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	0.000017
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1510
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.111
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.9
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	1.7
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.32
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.0093
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00863
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	0.0113
22	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.077
23	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	14.3
23	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	23.3
23	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	107
23	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.15
23	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.101
23	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	0.3
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Acidity (as CaCO3)	mg/L	<2
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Bicarbonate (as CaCO3)	mg/L	261
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Carbonate (as CaCO3)	mg/L	15.2
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Alkalinity, Total (as CaCO3)	mg/L	276
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Dissolved	mg/L	<0.003
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Aluminum (Al)-Total	mg/L	0.0065
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Ammonia, Total (as N)	mg/L	0.0068
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Dissolved	mg/L	0.0002
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Antimony (Sb)-Total	mg/L	0.00025

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Dissolved	mg/L	<0.0001
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Arsenic (As)-Total	mg/L	0.0001
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Dissolved	mg/L	0.0834
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Barium (Ba)-Total	mg/L	0.0876
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Dissolved	mg/L	<0.00002
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Beryllium (Be)-Total	mg/L	<0.00002
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Dissolved	mg/L	<0.00005
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bismuth (Bi)-Total	mg/L	<0.00005
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Dissolved	mg/L	0.015
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Boron (B)-Total	mg/L	0.016
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Bromide (Br)	mg/L	<0.25
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Dissolved	mg/L	0.0000615
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cadmium (Cd)-Total	mg/L	0.0000676
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Dissolved	mg/L	214.5
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Calcium (Ca)-Total	mg/L	213
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chloride (Cl)	mg/L	14.9
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Dissolved	mg/L	<0.0001
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Chromium (Cr)-Total	mg/L	0.00015
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Dissolved	mg/L	<0.0001
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Cobalt (Co)-Total	mg/L	<0.0001
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Conductivity	uS/cm	1470
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Dissolved	mg/L	<0.0005
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Copper (Cu)-Total	mg/L	0.00076
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Organic Carbon	mg/L	0.67
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Dissolved Oxygen, Field	mg/L	12.8
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	DMSeO - Dimethylselenoxide	mg/L	<0.00001
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Fluoride	mg/L	0.16
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Hardness - Dissolved (as CaCO3)	mg/L	983
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Dissolved	mg/L	0.012
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Iron (Fe)-Total	mg/L	0.067
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Dissolved	mg/L	<0.00005
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lead (Pb)-Total	mg/L	<0.00005
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Dissolved	mg/L	0.11
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Lithium (Li)-Total	mg/L	0.12
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Dissolved	mg/L	112.5
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Magnesium (Mg)-Total	mg/L	116
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Dissolved	mg/L	0.0161
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Manganese (Mn)-Total	mg/L	0.017
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Dissolved	mg/L	<0.000005
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Mercury (Hg)-Total	mg/L	<0.0000005
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(IV) - Methylseleninic Acid	mg/L	0.000025
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Dissolved	mg/L	0.00864
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Molybdenum (Mo)-Total	mg/L	0.0089
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Dissolved	mg/L	0.00612
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nickel (Ni)-Total	mg/L	0.00609
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrate (as N)	mg/L	23.3
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Nitrite (as N)	mg/L	0.0059
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP	mV	437
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	ORP, Field	mV	144.4
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Orthophosphate	mg/L	0.0045
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Field	pH	8.97
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	pH, Lab	pH	8.41
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Dissolved	mg/L	<0.05
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Phosphorus (P)-Total	mg/L	0.0141
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Dissolved	mg/L	2.71
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Potassium (K)-Total	mg/L	2.62
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(IV) - Selenite	mg/L	0.000211
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Se(VI) - Selenate	mg/L	0.073
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeCN - Selenocyanate	mg/L	<0.00001
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Dissolved	mg/L	0.0765
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium (Se)-Total	mg/L	0.07735
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenium Unknown	mg/L	<0.00001
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Selenosulphate	mg/L	<0.00001
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	SeMe - Selenomethionine	mg/L	<0.00001
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Dissolved	mg/L	2.06
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silicon (Si)-Total	mg/L	2.16
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Dissolved	mg/L	<0.00001
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Silver (Ag)-Total	mg/L	<0.00001
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Dissolved	mg/L	6.655
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sodium (Na)-Total	mg/L	6.6
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Dissolved	mg/L	0.23
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Strontium (Sr)-Total	mg/L	0.242
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Sulphate	mg/L	590
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Temperature, Field	deg c	1
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Dissolved	mg/L	<0.00001
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Thallium (Tl)-Total	mg/L	<0.00001
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Dissolved	mg/L	<0.0001
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Tin (Sn)-Total	mg/L	<0.0001
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Dissolved	mg/L	<0.0003
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Titanium (Ti)-Total	mg/L	<0.0003
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Dissolved Solids	mg/L	1280
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Kjeldahl Nitrogen	mg/L	0.25
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Organic Carbon	mg/L	0.65
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Total Suspended Solids	mg/L	4.7
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Turbidity, Lab	NTU	0.63
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Dissolved	mg/L	0.00676
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Uranium (U)-Total	mg/L	0.00664
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Dissolved	mg/L	<0.0005
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Vanadium (V)-Total	mg/L	<0.0005
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Dissolved	mg/L	<0.003
29	12	2022	FR SCOUTDS (RG SCOUTDS)	FR SCOUTDS	Zinc (Zn)-Total	mg/L	0.0727
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Acidity (as CaCO3)	mg/L	<2
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	248
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	13
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Alkalinity, Total (as CaCO3)	mg/L	261
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Aluminum (Al)-Dissolved	mg/L	0.0012
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Aluminum (Al)-Total	mg/L	0.0193
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Ammonia, Total (as N)	mg/L	0.009
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Antimony (Sb)-Dissolved	mg/L	0.00026
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Antimony (Sb)-Total	mg/L	0.00027
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Arsenic (As)-Total	mg/L	0.00011
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Barium (Ba)-Dissolved	mg/L	0.0832
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Barium (Ba)-Total	mg/L	0.0834
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Beryllium (Be)-Total	mg/L	<0.00002
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Bismuth (Bi)-Total	mg/L	<0.00005
14	1	2022	FR FR4 (RG FOBSC)	FR FR4	Boron (B)-Dissolved	mg/L	0.011

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.012
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000906
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000108
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	181
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	177
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	5.94
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00013
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00015
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1450
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	<0.0002
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	0.54
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	%	102.3
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	12.33
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.127
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	856
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.015
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.068
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0796
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0778
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	98
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	94
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.0108
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0152
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.0000005
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00597
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.0058
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00742
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.0073
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	28.6
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0111
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	429
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	-104.8
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.0074
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.03
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.36
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0129
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.64
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.48
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0997
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0936
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.93
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	2.04
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	5.07
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	4.78
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.24
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.22
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	558
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	0.52
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.00047
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1080
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.175
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	0.69
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	3.9
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	1.98
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	1.52
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00592
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00592
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0042
14	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0052
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	259
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as HCO3)	mg/L	315
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CO3)	mg/L	<1
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as OH)	mg/L	<1
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	259
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	<0.001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0033
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.0592
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Anion Sum	meq/L	20.6
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00026
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00028
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.0001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0812
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0848
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.012
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.012
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000836
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0000946
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	189
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	199
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cation - Anion Difference	%	5.1
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cation - Anion Ratio	%	90.3
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cation Sum	meq/L	18.6
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	8.86
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.00011
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	<0.0001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	<0.0001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1540
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity, Field	uS/cm	1028
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	<0.0002
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	0.96
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	%	83.7
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	12.06
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	DMSeO - Dimethylselenoxide	mg/L	<0.00001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.146
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	917
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.013
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.024
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0787
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0834
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	108
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	112
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00993
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0103
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00794
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00796
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00698
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00732
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	26.8
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0073
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	293
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.0038
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.15
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.28
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0073
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.73
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.81
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Se(IV) - Selenite	mg/L	0.000251
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Se(VI) - Selenate	mg/L	0.0807
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	SeCN - Selenocyanate	mg/L	<0.00001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0961
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.09265
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium Unknown	mg/L	<0.00001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenosulphate	mg/L	<0.00001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	SeMe - Selenomethionine	mg/L	<0.00001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	2.08
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.95
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	5.3
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	5.24
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Specific Conductivity	uS/cm	1948
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.227
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.229
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	639
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphur (S)-Dissolved	mg/L	221
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphur (S)-Total	mg/L	216
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	0.3
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.00001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1340
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	<0.05
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	1.11
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	2.2
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.24
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00697
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00716
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0039
20	1	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0045
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	234
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	11
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	245
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	<0.001
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0065
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.0158
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00025
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00027
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00013
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.084
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0874
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.012
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.012
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000878
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0000792
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	180
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	183
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	7.63
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00025
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	0.00011
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00013
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1440
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00021
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	0.54
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	%	84.5

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	12.04
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.389
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	874
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.015
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.042
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0815
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0797
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	103
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	99.4
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.0134
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0152
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.0000005
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00613
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00606
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00713
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.0075
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	29.1
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0068
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	460
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	196.8
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.0036
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.54
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.38
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0077
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.71
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.77
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.102
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.106
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.97
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	2.15
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	4.46
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	4.51
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.244
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.223
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	550
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	0.7
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.00001
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1240
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.449
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	0.65
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	2.6
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	3.13
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.48
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00608
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00598
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0034
10	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0041
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	238.5
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as HCO3)	mg/L	296
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	9.7
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CO3)	mg/L	2.5
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as OH)	mg/L	<1
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	248
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0015
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.00615
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.0119
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Anion Sum	meq/L	18.7
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.000315
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.000315
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	0.000125
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00012
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.08685
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0872
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.011
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.013
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.000125
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0001225
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	192
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	184
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cation - Anion Balance	%	96.2
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cation Sum	meq/L	18
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	2.325
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.00014
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00017
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	0.000125
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.000125
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1445
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity, Field	uS/cm	878
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.000295
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	0.735
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	%	89
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	13.2
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	DMSeO - Dimethylselenoxide	mg/L	<0.00001
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.1515
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	911.5
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ion balance (APHA)	%	1.91
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.018
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.038
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
16	2	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.08015

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.08205
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	105
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	102.65
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.0132
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0142
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.0000005
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00382
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00375
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.01055
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.0107
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Nitrate (as N)	mg/L	31.2
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0199
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	ORP	mV	330
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	ORP, Field	mV	168.1
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	pH, Field	pH	8.175
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	pH, Lab	pH	8.35
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.00365
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	18.05
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.78
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Se(IV) - Selenite	mg/L	0.000368
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Se(VI) - Selenate	mg/L	0.137
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	SeCN - Selenocyanate	mg/L	<0.00001
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.137333333
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.134333333
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Selenium Unknown	mg/L	<0.00001
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Selenosulphate	mg/L	<0.00001
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	SeMe - Selenomethionine	mg/L	<0.00001
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	2.015
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	2.07
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	3.505
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	3.585
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Specific Conductivity	uS/cm	1675
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.2395
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.23
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Sulphate	mg/L	557.5
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Sulphur (S)-Dissolved	mg/L	170
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Sulphur (S)-Total	mg/L	203
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Temperature, Field	deg c	0.1
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	0.000014
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.000013
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	0.0001
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1165
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	<0.05
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Total Organic Carbon	mg/L	0.76
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Total Suspended Solids	mg/L	1.75
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.54
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00618
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00601
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.00605
16	2	2022	FR_FR4 (RG FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0066
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	220
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	10.4
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	230
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0016
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.01
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00024
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00025
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00011
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0882
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0888
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.011
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.012
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000718
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000078
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	185
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	185
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Chloride (Cl)	mg/L	5.45
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.00012
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00131
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00012
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Conductivity	uS/cm	1380
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	<0.0002
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	1.02
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Dissolved Oxygen, Field	%	70.5
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	10.25
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Fluoride	mg/L	0.129
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	847
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.014
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.076
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0863
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0865
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	93.6
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	100
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.0121
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0169
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
10	3	2022	FR_FR4 (RG FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	0.0000051

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00436
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00452
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00594
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00638
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	28.9
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.014
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	479
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	169.9
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.0026
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.47
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.37
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0072
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.55
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.72
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0899
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0974
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.79
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.94
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	4.38
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	4.77
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.236
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.237
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	522
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	0
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1090
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.417
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	0.96
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	3.7
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	3.4
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	1.94
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.0054
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00563
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0031
10	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0041
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	239
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as HCO3)	mg/L	274
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	5.2
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CO3)	mg/L	5.6
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as OH)	mg/L	<1
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	244
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.00195
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.2335
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.0124
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Anion Sum	meq/L	18.4
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00028
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.000345
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	0.0001
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00029
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.08045
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.09995
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	0.0000255
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.012
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.014
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.00008775
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0001625
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	193
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	184
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cation - Anion Balance	%	95.1
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cation Sum	meq/L	17.5
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	5.455
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.0006
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	0.00011
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00034
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1430
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity, Field	uS/cm	744
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.000205
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	0.00091
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	0.925
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	%	80
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	11.22
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	DMS ₂ SeO - Dimethylselenoxide	mg/L	<0.00001
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.183
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	879
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ion balance (APHA)	%	2.51
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.4325
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	0.0003855
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.08095
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.08425
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	96.45
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	99.6
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.0134
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.02405
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	0.000002075
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	MeSe(IV) - Methylseleninic Acid	mg/L	0.000016
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.004325
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.004575
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00752
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.009185
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	27.5
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0174

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	467.5
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	123.5
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.00515
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.35
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.315
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.03245
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.765
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	3.005
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Se(IV) - Selenite	mg/L	0.000315
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Se(VI) - Selenate	mg/L	0.109
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	SeCN - Selenocyanate	mg/L	<0.00001
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.115
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.112333333
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium Unknown	mg/L	<0.00001
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenosulphate	mg/L	<0.00001
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	SeMe - Selenomethionine	mg/L	<0.00001
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.94
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	2.335
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	0.0000115
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	4.155
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	4.34
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Specific Conductivity	uS/cm	1376
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.2395
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.2355
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	554.5
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphur (S)-Dissolved	mg/L	193
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphur (S)-Total	mg/L	196
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	1.45
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.0000205
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.00168
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1135
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	<0.05
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	11.715
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	27.85
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	36.24
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	23.25
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00598
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00619
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	0.00138
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.00445
17	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.01075
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	223
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	8.2
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	231
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0017
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0711
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.0196
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00037
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00041
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	0.0001
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00022
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0812
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0916
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.012
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.013
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000854
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000109
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	180
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	164
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	5.01
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00022
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	0.00016
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00023
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1300
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00022
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	0.68
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	%	84
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	11.16
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.121
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	835
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.103
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	0.000076
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0792
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0811
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	93.6
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	85.4
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.0116
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0152
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	0.0000088
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00499
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.0054
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00753
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00848
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	23.5
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0231
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	434
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	86.9
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.44
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.35
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.009
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.76
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.87

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0997
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0953
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.94
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	2.17
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	4.36
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	4.28
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.218
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.224
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	438
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	3.3
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	0.00001
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.000014
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	0.00011
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.0017
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1040
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.444
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	0.87
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	6.4
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	7.26
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	5.31
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00497
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00576
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0042
25	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0059
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	205
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	205
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0062
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.169
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.0703
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00073
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00074
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	0.00016
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00026
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.092
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.103
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.011
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.012
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.000133
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000149
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	145
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	150
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	3.77
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00035
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	0.00047
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00062
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1090
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00043
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	0.00055
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	1.71
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	%	76.3
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	10.59
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.142
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	653
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.116
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	0.0001
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0583
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0598
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	70.6
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	76.1
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00915
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0151
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	0.0000093
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00558
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00569
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.0104
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.0118
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	19.4
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.042
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	443
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	57.8
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.0019
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.44
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.27
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0124
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.41
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.59
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0896
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0898
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	2.04
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	2.46
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	3.08
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	3.4
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.199
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.211
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	331
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	1.7
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	0.000015
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.000019
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.00856
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	807
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.583
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	2.08
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	17.4
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	14.02
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	7.39
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00405
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.0043
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	0.00087
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0058
31	3	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.008
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	218
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	4.8
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	222
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0054
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0362
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.0713
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00074
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00078
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	0.00013
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00019
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0939
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.106
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.011
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.013
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.000119
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000159
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	153
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	159
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	4.79
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00024
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	0.00067
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00077
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1220
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.0003
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	1.4
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	%	80.4
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	11.2
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.179
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	693
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.069
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	0.00005
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0688
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.072
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	75.6
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	83.5
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00923
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0121
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00585
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00645
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.0128
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.0146
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	26
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0806
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	446
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	191.9
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.42
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.31
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0088
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.46
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.99
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0959
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0994
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.82
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	2.16
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	3.26
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	3.58
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.231
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.255
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	444
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	1.6
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	0.000016
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.000016
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0012
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	938
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.362
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	1.72
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	3.9
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	4.97
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	2.31
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00463
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00495
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0066
5	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0076
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	223
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	223
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0033
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0323
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.0521
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00073
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00077
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	0.00013
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00021
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0904
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0978
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.012
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.012
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.000175
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000192
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	157
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	149
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	3.56
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00016
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	0.00058
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00066
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1230
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00041
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	1.74
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	%	90.7
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	12.15
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.176
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	710
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.058
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0748
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0722
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	77.1
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	80.8
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00894
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0113
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00522
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00567
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.0136
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.0147
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	26.6
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0675
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	473
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	242.6
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.51
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.25
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0072
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.65
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.92
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.104
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.111
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.82
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	2.09
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	3.1
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	3.41
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.228
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.24
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	438
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	3
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	0.000014
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.000017
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.00066
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	904
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.453
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	2.13
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	3.8
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	4.71
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	1.82
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00471
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00489
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0073
11	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.009
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	209
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	14.2
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	223
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0016
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0208
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00035
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00036
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00016
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0767
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0822
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.011
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.012
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.000182
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000194
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	162
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	165
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	1.58
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	<0.0001
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	0.00018
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00021
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1310
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.0004
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	1.41
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.136
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	742
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.043
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0773
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0752
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	82
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	87.4
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00792
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00917
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00302
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00308
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.0125
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.0134
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	30.7
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0086
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	242
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.4
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0042
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.59
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.48
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.129
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.136
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.66
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.75
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	2.85
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	3
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.207
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.222
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	460
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	0.000013
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.000014
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.00033
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1080
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	<0.05
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	1.66
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	1
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.94
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00528
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00558
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0085
20	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0104
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	176
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	176
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0112
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.116
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00028
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00032
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	0.00013
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.0002
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0592
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0754
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	<0.01
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.01
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.000156
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000215
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	122
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	125
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	3.04
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.0003
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	0.00042
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00056
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	960
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00054
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	0.00084
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	3.07
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	12.15
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.11
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	560
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.014
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.11
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	0.000093
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0492
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0448
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	61.9

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	61
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00958
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0159
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00293
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00298
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.0105
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.0115
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	19.3
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0069
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	245
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	140.8
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.52
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.27
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0209
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.03
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.06
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0837
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0803
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.76
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.96
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	2.9
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	2.89
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.153
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.159
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	323
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	6.1
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	0.00001
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.000015
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.00353
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	724
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.395
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	3.56
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	8.9
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	14.67
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	3.3
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00346
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00343
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	0.0008
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0068
26	4	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0101
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	173
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	7.2
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	180
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0045
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0379
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00029
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00028
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	0.00014
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00015
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0578
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0611
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	<0.01
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.01
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.05
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.000186
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000205
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	112
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	118
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	0.86
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.0001
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00014
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	0.00029
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00035
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	941
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00038
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	0.00052
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	2.06
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	11.62
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.158
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	511
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.057
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0402
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0424
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	56.1
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	58.5
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00593
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00933
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00209
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00204
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.0102
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.0109
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	19.4
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0129
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	510
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	118
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.5
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.33
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0096
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	1.95

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	1.85
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0906
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0888
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.71
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.82
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	1.79
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	1.87
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.144
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.14
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	296
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	5.3
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	0.000012
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.000012
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.0009
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	642
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.469
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	2.45
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	17.2
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	2.65
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	2.53
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00346
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00322
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0087
3	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0109
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	179
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	7.2
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	186
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0042
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0345
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00025
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00027
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	0.0001
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00014
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0504
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0504
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	<0.01
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	<0.01
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.05
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.000143
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000151
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	110
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	107
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	2.82
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.00017
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00013
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	0.0002
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00023
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	859
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00058
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	2.35
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	11.06
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.164
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	507
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.041
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0414
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0419
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	56.5
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	49.7
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00629
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00766
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.003
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00295
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00861
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00836
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	16.8
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0089
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	371
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	121
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.0011
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.53
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.36
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0092
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	1.96
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	1.75
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0664
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0622
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.62
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.68
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	2.53
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	2.51
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.132
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.13
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	262
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	4.1
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	0.00001
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.00001
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.00072
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	620
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.521
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	2.31
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	2.8
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	4.89
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	1.56
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00303
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00298
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0059
10	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0067
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	164
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	3.4
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	167
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0027
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.037
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00019
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.0002
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00012
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0473
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.055
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	<0.01
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	<0.01
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.05
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000964
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000118
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	90.2
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	99.1
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	2.13
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.00014
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00019
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00017
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	733
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.0003
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	2.77
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	11.2
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.162
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	397
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.066
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	0.000063
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.033
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0324
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	41.8
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	42.5
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00353
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.008
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00228
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00227
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00511
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00587
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	12.5
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0058
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	360
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	122.4
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.0037
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.52
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.35
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0194
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	1.51
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	1.45
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0536
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0494
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.57
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.62
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	2.03
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	2.13
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.124
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.128
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	204
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	5.7
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.00048
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	558
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.552
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	2.67
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	7.9
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	3.51
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	2.58
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00241
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00252
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0036
17	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0069
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	168
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	7.4
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	176

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0028
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0149
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00019
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00021
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00012
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0477
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0483
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	<0.01
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	<0.01
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.05
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000818
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0000954
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	87.2
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	89
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	2.44
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	<0.0001
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	<0.0001
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	736
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00038
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	0.00066
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	1.47
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	12.3
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.169
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	398
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.032
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0301
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0328
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	43.8
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	45.2
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00349
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0052
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00254
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00252
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00456
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00473
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	11.1
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0075
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	381
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	149.7
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.0021
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.67
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.42
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0114
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	1.59
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	1.5
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0481
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0447
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.38
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.48
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	2.15
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	2.24
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.125
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.123
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	209
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	5.3
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.00042
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	517
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.261
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	1.72
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	2.8
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	3.1
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	1.47
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00239
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00242
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0031
25	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0043
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	152
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	4.2
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	156
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0028
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0722
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00016
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00014
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00014
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0441
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0464
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	<0.01
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	<0.01
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.05
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000454
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0000676

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	69.6
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	68.9
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	1.4
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.0001
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00018
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	<0.0001
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	558
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00026
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	1.72
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.146
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	306
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.068
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0236
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0233
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	32.2
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	31.1
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00193
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00514
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00176
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00176
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00269
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00308
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	7.56
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0025
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	368
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.0029
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.28
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0117
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	1.17
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	1.24
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0324
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0334
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.66
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.77
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	1.6
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	1.65
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.105
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.102
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	127
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.00205
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	405
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.284
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	1.69
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	<1
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.84
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.0018
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00178
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	0.0005
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0024
31	5	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0031
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	146
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	5
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	151
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0031
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.038
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00015
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00016
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00014
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0411
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0384
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	<0.01
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	<0.01
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.05
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000594
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0000608
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	64.2
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	66
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	1.53
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.00012
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00012
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	<0.0001
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	537
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00038
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	1.64
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	10.76
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.174
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	294
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.069
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0209
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0206
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	32.4
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	27.1
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00223

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00435
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00179
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00176
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00297
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00281
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	6.55
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0023
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	284
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	131.6
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.37
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.32
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0079
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	1.1
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	0.967
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0294
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0265
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.69
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.57
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	1.57
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	1.4
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.0939
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.0927
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	128
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	5.8
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.00064
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	388
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	1.25
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	2.06
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	15.2
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	1.34
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	1.1
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00154
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00165
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0028
1	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0036
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	143
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	143
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0055
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.036
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00012
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00014
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	0.00011
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00018
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0364
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0428
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	<0.01
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	<0.01
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.05
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000517
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0000785
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	58.8
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	58.8
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	0.44
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.0001
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00014
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00014
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	473
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00025
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	7.48
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.166
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	257
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.065
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	0.000066
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.016
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0168
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	26.8
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	26.6
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00153
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00844
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.000904
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.000937
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00256
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00298
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	5.93
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0016
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	256
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.22
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0071
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	0.937
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	0.984
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0277
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0285
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.54
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.61

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	1.05
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	1.11
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.0905
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.0892
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	113
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.00067
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	302
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.437
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	2.05
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	7
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	1.48
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00141
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.0015
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	0.00071
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.002
4	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0036
5	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	13.9
5	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	177.6
5	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.1
5	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	6.7
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	110
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	1.6
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	112
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0039
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0465
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.0081
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	<0.0001
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00016
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0241
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0287
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	<0.01
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	<0.01
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.05
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000083
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0000202
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	40.6
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	37
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	0.11
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00017
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	<0.0001
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	259
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	<0.0002
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	1.28
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	10.87
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.142
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	143
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.046
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	0.000059
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0028
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0026
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	10.1
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	10.2
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00045
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00446
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.000523
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.000481
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	<0.0005
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	<0.0005
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	0.579
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0053
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	364
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	219.5
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.0022
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.13
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.29
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0144
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	0.329
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	0.373
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.00355
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.00355
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.53
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.68
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	0.436
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	0.473
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.0761
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.0682
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	22.8
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	4.7
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.00078
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	156
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.089

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	1.96
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	8
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	5.67
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	2.79
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.000513
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.000513
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	<0.001
7	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	<0.003
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	174
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	8.6
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	183
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0026
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0417
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.0002
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.0002
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00013
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0364
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0346
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	<0.01
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	<0.01
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.05
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.000166
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000158
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	85.9
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	81.2
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	0.86
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00014
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.0001
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	693
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00028
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	1.22
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	10.79
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.154
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	370
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.054
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	0.000054
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.031
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.036
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	37.9
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	34.8
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00148
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00481
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00163
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00162
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00546
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00566
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	14.4
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0027
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	317
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	149
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	7.94
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.35
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0114
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	1.51
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	1.5
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0579
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0553
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.57
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.77
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	2.19
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	2.12
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.102
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.103
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	153
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	4.2
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.0007
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	494
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.646
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	1.49
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	5
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	3.47
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	1.78
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00255
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00289
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0055
15	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0063
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	146
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	7.2
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	153
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0063
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.104
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00017
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00016
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	0.0001
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00016
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0332
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0331
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	<0.01
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	<0.01
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.05
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000965
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.00011
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	64.2
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	59.4
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	0.9
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00024
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.0002
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	488
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.0003
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	0.00051
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	1.83
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.136
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	271
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.17
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	0.000129
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0219
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.02
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	26.9
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	24.9
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00203
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0117
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00147
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00136
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00411
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00454
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	7.16
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.003
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	340
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.0047
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.32
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0211
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	1.14
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	1.09
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0322
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0299
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.74
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.73
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	1.52
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	1.36
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.0861
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.0844
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	90.4
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.00178
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	347
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.508
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	2.37
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	16.9
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	4.28
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00171
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00173
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	0.00054
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0037
21	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0057
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	188.5
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as HCO3)	mg/L	275
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	1.6
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CO3)	mg/L	<1
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as OH)	mg/L	<1
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	189.5
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0026
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0234
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Anion Sum	meq/L	8.85
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00023
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.000245
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00011
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.02965
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.03005
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.0115
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.0115
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.05
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0001987
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0001694
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	74.9
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	75.45
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cation - Anion Balance	%	94.4
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cation Sum	meq/L	8.35

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	0.76
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00012
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	<0.0001
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	621
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity, Field	uS/cm	546
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.000375
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	0.98
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	%	84.7
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	10.87
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	DMSeO - Dimethylselenoxide	mg/L	<0.00001
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.164
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	328.5
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ion balance (APHA)	%	2.91
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.0325
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	0.000058
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.03375
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0326
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	34.35
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	33.15
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.001065
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00336
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.001625
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.001645
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.005445
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00546
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	11.205
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0031
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	300.5
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.0015
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	7.4
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.29
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0088
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	1.575
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	1.46
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Se(IV) - Selenite	mg/L	0.000055
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Se(VI) - Selenate	mg/L	0.0572
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	SeCN - Selenocyanate	mg/L	<0.00001
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.051125
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.04566667
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium Unknown	mg/L	<0.00001
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenosulphate	mg/L	<0.00001
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	SeMe - Selenomethionine	mg/L	<0.00001
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.575
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.565
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	2.165
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	2.195
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Specific Conductivity	uS/cm	892
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.0948
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.0957
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	120.45
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphur (S)-Dissolved	mg/L	50.7
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphur (S)-Total	mg/L	51.5
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	4.7
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	0.000011
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.00001
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.00042
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	432
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	1.1745
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	1.315
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	4.4
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	1.885
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.002545
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.002495
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0062
28	6	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.00625
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	135
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	3.8
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	139
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.003
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0528
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00013
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00014
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00014
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0313
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0337
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	<0.01
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	<0.01
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.05
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000536
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0000766
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	60
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	61
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	1.09
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00018
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	468
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00022
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	1.04
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	10.26
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.143
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	260
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.061
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	0.000085
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0207
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0212
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	26.8
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	24.8
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00142
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00577
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00141
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00142
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00273
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00299
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	5.85
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0013
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	297
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	143.5
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.21
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.28
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0138
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	1.01
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	1.04
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0256
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0259
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.54
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.68
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	1.38
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	1.53
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.0852
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.0863
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	103
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	6.6
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0009
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	337
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.413
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	1.56
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	7.5
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	8.4
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	5.2
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00148
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.0016
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0026
5	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0038
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	157
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	6.6
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	164
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0021
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0756
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.016
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00018
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00019
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00011
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0376
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0409
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	<0.01
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	<0.01
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.05
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000849
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0000915
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	77.6
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	71.2
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	1.11
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00013
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	<0.0001
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	612
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00027
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	0.0008
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	0.78
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	9.55
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.215
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	330
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.018
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0276
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0242
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	33.1
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	34.4
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00198
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00333
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00157
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00166
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00357
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00406
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	9.74
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0101
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	383
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	142.8
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.33
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.41
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0054
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	1.3
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	1.35
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0456
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0442
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.48
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.55
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	1.58
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	1.74
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.0948
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.103
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	164
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	11.9
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	451
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.423
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	0.89
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	3.1
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	1.65
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.77
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00221
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00218
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0036
14	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0042
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	162
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	16.4
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	178
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0011
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.038
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.0002
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.0002
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00012
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0481
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0469
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	<0.01
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	<0.01
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.05
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.000118
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000131
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	93
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	92.4
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	0.67
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.00027
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00015
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00013
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	757
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	<0.0002
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	0.61
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	10
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.197
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	418
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	<0.01
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.058
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0386
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0356
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	45.2
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	43.9
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00374
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00898
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00181
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00185
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00581
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00619
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	11.6
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0105
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	389
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	-56
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.5
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.48
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0042
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	1.6
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	1.58
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0628
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0603
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.6

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.66
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	1.71
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	1.68
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.116
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.116
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	213
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	13.2
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.00084
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	535
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	<0.05
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	0.74
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	1.7
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.4
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00263
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00274
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0052
25	7	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0072
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	190
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	11.2
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	201
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0014
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0102
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00031
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00026
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	0.00014
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00019
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0764
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0637
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.015
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.011
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.000214
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.00021
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	134
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	122
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	1.23
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.00011
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00015
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	0.00014
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00016
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1090
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00022
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	0.72
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.214
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	641
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.01
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.027
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0571
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0522
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	74.5
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	70.4
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00594
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0075
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00287
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00257
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.0102
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.0106
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	17.9
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0183
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	419
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.0021
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.45
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.004
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.32
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.12
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.104
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0992
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	2.24
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	2.11
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	2.42
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	2.49
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.176
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.154
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	352
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	0.000014
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.000019
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	783
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.438
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	0.72
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	2.6
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.36
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00455
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.0042
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0101
9	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0098
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	190
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	17
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	207
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0038
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0737
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.0066
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.0002
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00021
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00017
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0632
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0904
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.011
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.012
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000838
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000118
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	127
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	126
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	4.65
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00026
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.0001
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	982
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	<0.0002
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	0.00051
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	<0.5
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	10.2
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.188
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	574
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.01
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.039
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0509
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0523
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	62.5
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	67.1
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00502
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00753
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00361
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.0038
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00652
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00702
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	16.5
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0134
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	312
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	8.3
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.003
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.37
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.51
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0089
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	1.92
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	1.78
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0739
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0691
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.93
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.98
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	3.08
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	3.16
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.155
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.166
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	329
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	13.1
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	0.00037
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	757
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	<0.05
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	<0.5
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	5.8
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	0
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.6
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00349
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.0036
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	0.00062
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0039
26	8	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0087
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	226
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	15.4
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	241
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.004
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0101
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00023
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00023
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00018
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.075
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0777
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.013
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.016
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.000058
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0000616
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	150
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	168
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	7.48
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.0001
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00018
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	<0.0001
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1150
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	<0.0002
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	<0.5
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	10.11
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.19
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	694
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.015
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.034
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0766
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0757
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	77.6
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	84.9
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.0071
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00951
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	0.0000056
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00612
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00656
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00659
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00805
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	19.7
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0099
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	328
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.0047
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.33
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.38
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0095
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.31
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.47
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0746
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0682
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	2.01
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	2.19
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	4.8
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	5.28
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.194
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.2
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	396
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	8.45
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	966
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	<0.05
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	<0.5
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	1.8
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.56
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00508
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00536
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0025
13	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	<0.003
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	227.6666667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as HCO3)	mg/L	306
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	11.86666667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CO3)	mg/L	<1
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as OH)	mg/L	<1
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	239.3333333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0036
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.008933333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.009966667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Anion Sum	meq/L	16
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.000266667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.000256667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.000153333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.074866667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.075233333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.0125
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.0135
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0001246
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.00014385
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	156
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	156.3333333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cation - Anion Balance	%	86.2
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cation Sum	meq/L	13.8
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	5.763333333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.00016
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.000115
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	0.000103333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.000126667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1173.333333

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity, Field	uS/cm	934.5
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.000243333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	0.806666667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	%	89
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	9.68
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	DMSeO - Dimethylselenoxide	mg/L	<0.00001
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.181666667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	726.3333333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ion balance (APHA)	%	7.38
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.0165
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.025
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.067433333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.065633333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	81.76666667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	85.83333333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.007446667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.008126667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	0.00000625
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	MeSe(IV) - Methylseleninic Acid	mg/L	0.000018
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00491
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.004993333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.008806667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.008796667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	21.03333333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0129
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	361.3333333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	106.7
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.455
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.36
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Dissolved	mg/L	<0.05
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0172875
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.243333333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.366666667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Se(IV) - Selenite	mg/L	0.000362
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Se(VI) - Selenate	mg/L	0.114
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	SeCN - Selenocyanate	mg/L	<0.00001
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.100875
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.09608
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium Unknown	mg/L	<0.00001
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenosulphate	mg/L	<0.00001
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	SeMe - Selenomethionine	mg/L	<0.00001
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	2.085
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	2.19
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	4.073333333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	4.046666667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Specific Conductivity	uS/cm	1283.5
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.194666667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.184333333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	423
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphur (S)-Dissolved	mg/L	117
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphur (S)-Total	mg/L	167
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	11.1
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	0.0000105
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	1.16667E-05
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	905.5
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	1.425333333
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	0.816666667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	2.4
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	-1.63
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.456666667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.004896667
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00489
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	0.000555
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0063
14	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.006133333
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	228
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	22
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	250
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0047
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0044
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.0079
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00024
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00024
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	<0.0001
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.077
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0783
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.013
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.015
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000619
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0000617
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	146
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	161
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	7.49
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.00012
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	<0.0001
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	<0.0001
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1150
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00021
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	1.01
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	10.22
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.173
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.018
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.032
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0794
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0791
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	75.1
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	83.2
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00714
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00775
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00603
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00623
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00674
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00751
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	19.3
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0076
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	287
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	124.4
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.5
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.46
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Dissolved	mg/L	<0.05
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.04015
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.35
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.45
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.069
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0677
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.72
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.93
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	4.72
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	5.12
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.2
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.198
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	396
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	8.6
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	881
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.37
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	0.93
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	<1
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	0
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.44
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00505
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00514
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0028
19	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0032
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	232
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	13.6
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	245
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.005
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0161
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.0051
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00028
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00025
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	<0.0001
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0845
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0834
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.014
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.015
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000701
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000079
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	155
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	151
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	7.71
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.00011
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00019
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	<0.0001
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1200
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00032
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	<0.5
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	10.87
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.191
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	740
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.017
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.071
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.108
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.109
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	85.6
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	82.4
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00682
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.011
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00611
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00578
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00884
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00882
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	25.6
24	9	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0085

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	ORP	mV	274
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	ORP, Field	mV	130.8
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Orthophosphate	mg/L	0.001
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	pH, Field	pH	8.49
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	pH, Lab	pH	8.41
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0079
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.69
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.57
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0893
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0727
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.74
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.81
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	5.56
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	5.34
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.224
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.213
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Sulphate	mg/L	446
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Temperature, Field	deg c	8.6
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.00001
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1020
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	<0.05
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Total Organic Carbon	mg/L	<0.5
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Total Suspended Solids	mg/L	2
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Turbidity, Field	NTU	0
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.47
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00544
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00559
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0026
24	9	2022	FR_FR4 (RG FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0039
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	227
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	18.4
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	245
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0044
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0129
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00027
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00025
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	0.00013
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00012
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0907
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0858
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.015
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.014
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000953
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0000864
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	176
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	175
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Chloride (Cl)	mg/L	8.17
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.00013
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00018
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	<0.0001
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Conductivity	uS/cm	1250
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00038
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	0.72
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	12
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Fluoride	mg/L	0.177
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	884
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.018
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.049
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0961
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0887
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	108
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	98.4
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00732
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00966
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00638
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00637
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.0096
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00931
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Nitrate (as N)	mg/L	24.8
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0101
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	ORP	mV	306
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	ORP, Field	mV	89.2
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	pH, Field	pH	8.53
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	pH, Lab	pH	8.46
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0197
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	3.05
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.67
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0961
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0761
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.87
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.74
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	6.24
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	5.7
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.22
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.222
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Sulphate	mg/L	495
3	10	2022	FR_FR4 (RG FOBSC)	FR_FR4	Temperature, Field	deg c	8.5

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1060
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.562
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	0.57
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	5.8
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	1.28
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	1.29
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00567
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00576
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0036
3	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0036
11	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	12.15
11	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	107.6
11	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.5
11	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	7
11	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	1.27
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	247
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	12.6
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	260
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	<0.001
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0045
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00026
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00024
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00011
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0898
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0843
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.016
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.017
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000354
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0000625
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	177
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	181
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	12.2
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00025
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	<0.0001
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1220
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	<0.0002
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	1.07
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	12.05
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.187
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	848
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.013
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.025
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.109
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.111
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	98.5
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	94
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00835
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00605
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00711
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00677
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00755
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00772
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	21.9
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0107
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	284
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	211.5
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.003
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.4
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.38
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.008
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.96
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.82
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.106
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.073
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.84
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.83
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	6.69
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	6.5
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.218
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.215
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	465
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	6.6
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	895
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.469
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	1.16
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	3
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	2.26
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.64
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00602

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00586
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0015
12	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	<0.003
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	254
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	8.6
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	262
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0036
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0088
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.0222
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00024
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00023
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00011
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0868
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0825
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.014
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.014
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000703
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0000672
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	178
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	190
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	15.3
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00014
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	<0.0001
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1260
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.0003
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	0.77
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	12.08
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.188
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	804
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.025
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.043
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0984
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0922
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	87.4
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	100
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00819
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00935
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00717
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00736
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00815
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00848
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	23.1
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0092
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	317
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	116.7
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.007
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.46
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.35
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0132
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.85
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.85
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.0948
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0709
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.74
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.68
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	6.63
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	6.68
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.232
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.228
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	477
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	6.7
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1000
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.52
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	0.72
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	2.7
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	1.23
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.53
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00593
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00574
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0029
17	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0047
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	235
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	15.8
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	251
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.022
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0055
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.0067
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00029
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00028
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00018
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0862
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0852
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.014
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.017
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.000197
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000221
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	191
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	199
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	2.78
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.00018
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00028
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	0.00013
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00016
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1360
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	<0.0002
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	<0.5
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	11.53
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.172
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	922
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.023
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.033
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0975
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0884
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	108
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	114
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00724
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.00844
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00396
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00428
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.0142
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.016
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	28.3
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.012
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	316
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	141.4
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.35
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.44
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0047
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.79
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.77
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.172
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.142
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.94
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	2.09
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	3.8
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	3.98
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.219
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.233
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	570
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	4.5
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	0.000013
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.000014
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1200
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	<0.5
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	<0.5
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	3
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	1.39
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.52
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00616
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00702
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0108
25	10	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0105
1	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	11.59
1	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	128.9
1	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.41
1	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	3.8
1	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	0.65
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	212
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	18.4
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	230
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	<0.001
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0177
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.005
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00028
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00028
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00012
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0807
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0828
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.012
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.013
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.000192
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0002
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	166
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	178
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	1.75
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00014
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	0.0001
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.00013

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1360
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.0002
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	0.94
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.178
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	826
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.018
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.035
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0876
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0802
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	99.9
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	110
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00791
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0093
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00336
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00327
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.0127
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.0139
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	27
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0093
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	318
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	<0.001
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.43
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0042
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.5
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.73
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.17
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.129
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.94
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	2
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	3.44
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	4.14
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.209
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.207
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	514
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	0.000011
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.000014
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1090
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.444
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	1.08
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	<1
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	1.09
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00582
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00634
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0104
2	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0102
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	260
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as HCO3)	mg/L	317
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	30
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CO3)	mg/L	18
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as OH)	mg/L	<1
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	290
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	0.0023
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0078
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.0102
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Anion Sum	meq/L	20.2
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00021
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00022
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	<0.0001
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0717
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0698
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.014
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.015
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000912
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000088
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	184
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	194
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cation - Anion Balance	%	94
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cation Sum	meq/L	19
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	17.4
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.00024
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.0002
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	0.00011
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	<0.0001
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1520
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity, Field	uS/cm	998
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.0002
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	1.07
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	%	89
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	12.88
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	DMS ₂ SeO - Dimethylselenoxide	mg/L	0.000015
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.175
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	933
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ion balance (APHA)	%	-3.06
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.024
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.037
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0743
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.077

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	115
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	120
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.00963
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0102
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	MeSe(IV) - Methylseleninic Acid	mg/L	0.000041
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.0108
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.0102
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00717
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00706
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	17
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0063
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	295
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.0072
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.22
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.51
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0142
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.52
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.61
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Se(IV) - Selenite	mg/L	0.000276
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Se(VI) - Selenate	mg/L	0.0699
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	SeCN - Selenocyanate	mg/L	<0.00001
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.09315
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.083466667
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium Unknown	mg/L	<0.00001
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenosulphate	mg/L	<0.00001
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	SeMe - Selenomethionine	mg/L	<0.00001
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.93
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.87
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	6.98
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	6.86
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Specific Conductivity	uS/cm	1900
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.205
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.204
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	608
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphur (S)-Dissolved	mg/L	211
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphur (S)-Total	mg/L	198
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	0.1
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1280
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.993
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	1.04
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	2.1
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.38
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00716
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00671
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0086
7	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0113
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	297
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	21.6
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	318
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	<0.001
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0052
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.0099
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00024
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00023
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	0.0001
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	<0.0001
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0869
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0707
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.014
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.014
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0001
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0000824
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	217
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	211
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	14.6
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.00018
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00017
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.0001
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1430
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00022
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	0.94
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	12.02
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.176
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	1050
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.026
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.048
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0957
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0855
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	124
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	109
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.011
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0111
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00944
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00967
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.0079
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00759
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	19.7

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0074
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	297
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	121.3
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.0044
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.28
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.46
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0126
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.95
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.77
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.111
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0848
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	2.03
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	2.02
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	7
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	7.14
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.221
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.222
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	581
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	1.9
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1220
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.502
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	0.9
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	<1
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	1.44
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.25
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00732
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00727
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0042
10	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0036
16	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	12.26
16	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	133.5
16	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.52
16	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	0.5
16	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Field	NTU	-0.54
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	257
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	20.2
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	277
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	<0.001
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.005
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00028
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00022
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	0.00011
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00012
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0965
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0814
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.011
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.012
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.000101
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0000926
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	190
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	215
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	9.63
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.0001
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00012
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	0.0001
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	<0.0001
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1390
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	<0.0002
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	<0.5
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.165
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.022
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.041
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0904
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0931
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	110
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	124
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.0095
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0112
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.0055
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00693
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00811
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.0081
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	23.6
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0072
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	334
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.005
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.5
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Dissolved	mg/L	<0.05
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0078
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.53
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.7
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.138
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0997
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.79
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.92
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	4.56
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	5.71
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.221

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.246
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	555
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	0.000014
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1220
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.452
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	<0.5
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	1.5
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.38
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00654
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.0072
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0042
23	11	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.0037
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	248
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as HCO3)	mg/L	303
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	10.8
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CO3)	mg/L	6.5
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as OH)	mg/L	<1
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	259
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	<0.001
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0051
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	0.0344
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Anion Sum	meq/L	20.6
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00018
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.0002
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	<0.0001
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0874
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0859
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	<0.01
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.011
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000542
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.0000439
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	196
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	214
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cation - Anion Balance	%	97.1
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cation Sum	meq/L	20
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	14.7
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	0.0002
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00024
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	<0.0001
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1530
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity, Field	uS/cm	966
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	<0.0002
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	<0.5
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	%	89.3
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	12.81
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	DMSeO - Dimethylselenoxide	mg/L	<0.00001
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.17
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	984
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ion balance (APHA)	%	-1.48
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.027
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.047
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.0852
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0869
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	120
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	126
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.0117
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0121
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	MeSe(IV) - Methylseleninic Acid	mg/L	0.000054
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	MeSe(VI) - Methaneselenonic Acid	mg/L	0.000015
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00822
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00953
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.0056
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00648
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	22.8
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0071
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	417
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.009
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.12
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.32
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0176
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.84
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.66
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Se(IV) - Selenite	mg/L	0.000271
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Se(VI) - Selenate	mg/L	0.0749
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	SeCN - Selenocyanate	mg/L	<0.00001
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.083733333
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.07815
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium Unknown	mg/L	<0.00001
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenosulphate	mg/L	<0.00001
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	SeMe - Selenomethionine	mg/L	<0.00001
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.79
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.91
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	6.25
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	6.49
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Specific Conductivity	uS/cm	1820
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.229
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.236
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	644

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphur (S)-Dissolved	mg/L	224
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphur (S)-Total	mg/L	224
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	0.4
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	<0.0001
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1340
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	1.14
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	0.55
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	1.2
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.38
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00695
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00705
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0019
8	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	<0.003
12	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Oxygen, Field	mg/L	11.88
12	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP, Field	mV	205.6
12	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Field	pH	8.57
12	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Temperature, Field	deg c	1.3
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Acidity (as CaCO3)	mg/L	<2
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Bicarbonate (as CaCO3)	mg/L	270
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Carbonate (as CaCO3)	mg/L	18.2
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Alkalinity, Total (as CaCO3)	mg/L	288
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Dissolved	mg/L	<0.001
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Aluminum (Al)-Total	mg/L	0.0097
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Ammonia, Total (as N)	mg/L	<0.005
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Dissolved	mg/L	0.00024
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Antimony (Sb)-Total	mg/L	0.00014
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Dissolved	mg/L	<0.0001
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Arsenic (As)-Total	mg/L	0.00012
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Dissolved	mg/L	0.0844
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Barium (Ba)-Total	mg/L	0.0899
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Beryllium (Be)-Total	mg/L	<0.00002
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bismuth (Bi)-Total	mg/L	<0.00005
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Dissolved	mg/L	0.014
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Boron (B)-Total	mg/L	0.013
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Bromide (Br)	mg/L	<0.25
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Dissolved	mg/L	0.0000758
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cadmium (Cd)-Total	mg/L	0.000077
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Dissolved	mg/L	210
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Calcium (Ca)-Total	mg/L	191
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chloride (Cl)	mg/L	13.6
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Dissolved	mg/L	<0.0001
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Chromium (Cr)-Total	mg/L	0.00026
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Cobalt (Co)-Total	mg/L	0.0001
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Conductivity	uS/cm	1490
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Dissolved	mg/L	0.00022
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Copper (Cu)-Total	mg/L	<0.0005
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Dissolved Organic Carbon	mg/L	0.58
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Fluoride	mg/L	0.171
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Hardness - Dissolved (as CaCO3)	mg/L	998
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Dissolved	mg/L	0.024
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Iron (Fe)-Total	mg/L	0.058
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Dissolved	mg/L	<0.00005
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lead (Pb)-Total	mg/L	<0.00005
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Dissolved	mg/L	0.1
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Lithium (Li)-Total	mg/L	0.0963
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Dissolved	mg/L	115
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Magnesium (Mg)-Total	mg/L	124
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Dissolved	mg/L	0.0143
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Manganese (Mn)-Total	mg/L	0.0153
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Mercury (Hg)-Total	mg/L	<0.000005
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Dissolved	mg/L	0.00822
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Molybdenum (Mo)-Total	mg/L	0.00716
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Dissolved	mg/L	0.00729
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nickel (Ni)-Total	mg/L	0.00786
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrate (as N)	mg/L	25.1
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Nitrite (as N)	mg/L	0.0064
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	ORP	mV	292
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Orthophosphate	mg/L	0.0024
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	pH, Lab	pH	8.42
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Phosphorus (P)-Total	mg/L	0.0082
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Dissolved	mg/L	2.52
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Potassium (K)-Total	mg/L	2.85
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Dissolved	mg/L	0.098
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Selenium (Se)-Total	mg/L	0.0904
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Dissolved	mg/L	1.96
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silicon (Si)-Total	mg/L	1.98
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Dissolved	mg/L	<0.00001
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Silver (Ag)-Total	mg/L	<0.00001
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Dissolved	mg/L	6.22
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sodium (Na)-Total	mg/L	6.91
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Dissolved	mg/L	0.24
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Strontium (Sr)-Total	mg/L	0.221
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Sulphate	mg/L	589
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Thallium (Tl)-Total	mg/L	<0.00001
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Dissolved	mg/L	<0.0001
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Tin (Sn)-Total	mg/L	0.00015
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Titanium (Ti)-Total	mg/L	<0.0003
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Dissolved Solids	mg/L	1190
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Kjeldahl Nitrogen	mg/L	0.374
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Organic Carbon	mg/L	0.66
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Total Suspended Solids	mg/L	<1
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Turbidity, Lab	NTU	0.42
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Dissolved	mg/L	0.00747
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Uranium (U)-Total	mg/L	0.00672
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Dissolved	mg/L	<0.0005
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Vanadium (V)-Total	mg/L	<0.0005
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Dissolved	mg/L	0.0037

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	12	2022	FR_FR4 (RG_FOBSC)	FR_FR4	Zinc (Zn)-Total	mg/L	0.003
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	267
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	267
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0016
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0038
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00026
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00028
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00014
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0825
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0827
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.012
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.012
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000836
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000914
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	200
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	210
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Chloride (Cl)	mg/L	9.59
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	<0.0001
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.0001
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Conductivity	uS/cm	1520
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.0002
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.7
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	83.1
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	12.11
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	DMSeO - Dimethylselenoxide	mg/L	<0.00001
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Fluoride	mg/L	0.122
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	977
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.019
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.027
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0872
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0848
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	116
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	110
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00857
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00931
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	MeSe(IV) - Methylseleninic Acid	mg/L	0.000011
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00752
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00746
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00749
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00774
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Nitrate (as N)	mg/L	25.7
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0082
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	ORP	mV	458
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	ORP, Field	mV	171.4
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Orthophosphate	mg/L	0.009
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	pH, Field	pH	10.74
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	pH, Lab	pH	8.22
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0171
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	3.36
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	3.34
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Se(IV) - Selenite	mg/L	0.000306
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Se(VI) - Selenate	mg/L	0.102
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	SeCN - Selenocyanate	mg/L	<0.00001
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0981
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.09665
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Selenium Unknown	mg/L	<0.00001
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Selenosulphate	mg/L	<0.00001
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	SeMe - Selenomethionine	mg/L	<0.00001
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	2.02
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	2.15
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	5.24
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	5.31
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.232
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.249
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Sulphate	mg/L	597
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Temperature, Field	deg c	0
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1280
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.05
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.73
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Total Suspended Solids	mg/L	2
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.44
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00683
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00647
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0041
1	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0078
15	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
15	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	233
15	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	10.8
15	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	244
15	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0012
15	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0092
15	2	2022	FR_FRCP1 (RG_FOBBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0117

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00031
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00029
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00013
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0877
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0878
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.013
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.012
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000799
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000394
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	193
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	184
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	6.63
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.0001
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00018
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	0.00012
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00014
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1390
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00026
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.04
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	78.7
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	11.14
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.149
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	910
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.012
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.047
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0861
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0822
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	104
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	103
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.0118
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.0136
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	0.0000066
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00608
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.0057
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00792
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00821
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	27.7
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0188
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	341
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	168.7
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0017
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.21
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.37
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0102
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	3.16
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	3.2
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.107
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.104
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.99
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.98
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	4.55
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	4.67
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.242
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.235
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	542
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	1
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	0.000012
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	0.00018
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00031
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1160
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.05
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	1.25
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	2.9
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	1.69
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	1.62
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00625
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00643
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.005
15	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0065
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	229
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	13.2
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	242
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0018
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0914
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0119
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00035
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00031
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.00012
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00019
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0924
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0857
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.012
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.012
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000115
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000112
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	186
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	176

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	2.5
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.00016
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00017
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	0.00011
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00012
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1470
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00029
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.75
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	14.2
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.178
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	872
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.018
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.036
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0823
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.08
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	99.1
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	99.1
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.0114
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.0119
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00416
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00362
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.0101
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.01
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	31.2
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0201
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	208
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	157.1
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.24
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.37
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0048
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	30.8
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.64
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.137
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.126
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	2.03
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.94
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	3.55
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	3.4
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.236
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.224
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	557
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	-0.1
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	0.000015
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	0.000014
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	0.00015
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1260
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.081
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	1.02
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	<1
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.36
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00609
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.0061
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0051
16	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0067
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	284
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	16.6
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	301
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0013
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0042
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00026
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00028
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00013
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0845
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0881
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.013
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.013
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000834
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000079
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	210
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	221
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	12.4
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00015
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	0.00011
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00013
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1700
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity, Field	uS/cm	1837
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00025
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.07
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	78.3
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	11.37
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.139
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	1060
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.014
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.028
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.086

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0864
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	129
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	132
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00916
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.0102
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.0000005
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.009
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00969
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00758
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00754
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	27.7
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.01
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	466
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	234.1
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0031
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	6.64
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.39
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0069
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	3.24
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	3.17
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.111
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.127
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	2.2
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	2.17
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	6.4
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	5.97
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.238
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.242
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	762
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	0
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	0.000011
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1490
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.443
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.99
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	1.3
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	0.57
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.35
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.0076
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00758
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0046
22	2	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0046
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	2.9
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	240
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	8.6
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	248
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	<0.001
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.005
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.009
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00024
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00026
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00012
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0849
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0971
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.012
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.013
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000074
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000696
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	183
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	214
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	9.92
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00011
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1470
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00027
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.73
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	84.8
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	12.37
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.129
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	885
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.017
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.028
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.082
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0954
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	104
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	119
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00905
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00995
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.0000005
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.0103
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00643
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00618
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00658
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	27.3
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0144
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	430
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	54.6
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0023
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.19

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.35
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0107
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.68
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.85
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0869
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0924
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.88
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	2
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	5.04
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	6.12
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.23
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.234
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	574
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	-0.1
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1220
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.52
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.68
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	2
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	0.31
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.66
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00609
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00684
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.003
1	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0041
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	253
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	5.8
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	258
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.001
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0088
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0065
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.0003
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00032
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00015
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0882
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.09
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.012
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.013
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000868
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000867
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	203
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	194
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	8.26
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00012
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	0.0001
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00012
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1510
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity, Field	uS/cm	1004.4
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00033
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.88
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	84.5
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	12.32
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.149
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	939
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.039
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0923
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0901
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	105
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	102
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.0114
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.0121
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.0000005
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00597
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00635
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00751
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00786
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	29.6
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0119
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	474
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	169.8
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0043
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.71
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.32
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0079
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	3
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	3.05
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.115
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.105
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.85
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	2.06
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	5
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	5.03
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.24
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.248
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	603
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	-0.05

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1190
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.05
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.99
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	1.5
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	2.835
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.44
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00713
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00697
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0033
8	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0039
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	247.5
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as HCO3)	mg/L	301
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	5
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CO3)	mg/L	5.4
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as OH)	mg/L	<1
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	252
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.00205
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.02075
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0086
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Anion Sum	meq/L	18.9
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.000245
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.000295
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00012
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.08365
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0831
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.011
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.0125
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.00007135
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000762
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	161
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	184
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cation - Anion Balance	%	91.5
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cation Sum	meq/L	17.3
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	7.215
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.0001
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.000135
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.000125
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1435
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity, Field	uS/cm	761
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00021
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.775
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	86
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	12.035
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	DMSeO - Dimethylselenoxide	mg/L	<0.00001
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.1335
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	789.5
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ion balance (APHA)	%	4.42
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.0115
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.0675
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0758
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.08625
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	94.15
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	96.1
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.01305
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.01455
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	0.0000052
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	MeSe(IV) - Methylseleninic Acid	mg/L	0.000016
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.004705
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.005155
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00644
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.006905
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	27.4
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.01135
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	435.5
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	193
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0067
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.385
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.245
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0112
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	3.27
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	3.29
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Se(IV) - Selenite	mg/L	0.000268
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Se(VI) - Selenate	mg/L	0.0898
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	SeCN - Selenocyanate	mg/L	<0.00001
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.09355
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.089925
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium Unknown	mg/L	<0.00001
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenosulphate	mg/L	<0.00001
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	SeMe - Selenomethionine	mg/L	<0.00001
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.82
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	2.04
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	4.7
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	4.695
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Specific Conductivity	uS/cm	1368
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.208
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.232
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	559.5

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphur (S)-Dissolved	mg/L	193
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphur (S)-Total	mg/L	199
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	1.4
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	0.000011
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00066
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1150
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.2205
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.99
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	4.95
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	5.31
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	1.97
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.005715
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.006245
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.00355
15	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0037
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	212
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	17.2
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	230
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0027
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0983
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0327
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00034
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00038
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.00015
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00024
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0786
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0805
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.011
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.013
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000857
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000123
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	134
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	152
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	2.92
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00025
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	0.00039
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00055
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1150
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.0003
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	0.00069
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.91
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	81
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	11.65
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	<0.1
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	631
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.178
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	0.000185
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0596
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0593
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	72
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	76.1
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.0161
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.0274
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	0.0000199
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00271
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00296
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.0102
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.0112
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	20.1
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0265
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	386
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	102.3
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.34
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.46
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0118
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.5
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.5
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.107
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0849
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	2.03
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	2.2
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	0.00001
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	3.02
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	3.01
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.188
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.19
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	389
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	0.4
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	0.000013
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	0.00002
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00148
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	766
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.05
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	1.08
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	13.5
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	10.75
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	8.95
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00441
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00497

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	0.00082
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0044
16	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0067
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	241
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	241
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0017
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0326
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0096
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00032
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00036
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.0001
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00013
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.084
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0897
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.013
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.014
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000825
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000101
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	174
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	181
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	6.2
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00014
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	0.00013
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00018
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1330
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00022
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.8
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	84.6
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	11.57
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.174
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	810
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.084
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	0.000066
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0841
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0913
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	91.2
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	96.5
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.0124
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.0147
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.0000005
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00513
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00534
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00721
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00801
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	27.4
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.016
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	469
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	178.4
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.43
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.25
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0092
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	3
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	3.13
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0988
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.099
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.89
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.98
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	4.46
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	4.68
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.222
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.231
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	502
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	2.2
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	0.000011
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00053
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1080
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.369
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	1.6
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	5.5
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	4.88
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	3.94
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00594
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00622
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0041
23	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0048
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	191
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	7
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	198
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.007
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.105
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0663
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00075
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00078
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.00016
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00021
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.107

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.119
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.012
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.012
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000132
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000158
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	148
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	156
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	1.72
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.00011
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00038
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	0.00042
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00052
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1120
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00047
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	0.0006
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.17
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	86
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	11.8
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.17
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	668
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.114
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	0.00013
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0589
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0598
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	72.5
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	73.5
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00812
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.0134
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	0.00000111
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00485
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00494
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.0111
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.0114
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	23.6
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0577
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	466
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	168.2
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.48
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.31
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0111
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.53
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.46
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.106
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.101
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	2.11
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	2.33
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	2.59
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	2.48
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.205
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.216
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	389
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	2.2
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	0.000016
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	0.000019
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.003
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	815
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.05
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	2.32
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	8.2
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	6.27
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	8.76
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00418
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00439
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	0.0007
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0071
30	3	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0107
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	218
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	4.2
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	222
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0022
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0265
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0641
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00071
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00083
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.00014
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00019
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0935
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.102
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.011
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.013
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000133
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.00016
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	151
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	154
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	5.04
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00013
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	0.00066
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00076

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1240
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00029
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.38
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	72.8
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	10.15
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.178
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	695
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.062
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.069
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.075
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	77.3
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	84.6
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00916
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.0116
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.0000005
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.0057
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00879
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.0135
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.0151
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	25.4
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0754
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	422
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	170.7
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.37
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.31
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0047
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.5
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.76
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0916
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.103
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.8
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	2.09
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	3.39
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	3.77
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.229
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.262
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	437
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	1.5
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	0.000015
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	0.000018
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00044
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	911
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.05
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	1.61
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	5.7
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	1.87
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00441
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00503
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0067
5	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0085
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	215
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	5.2
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	220
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.003
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0761
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0247
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00066
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00072
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.00014
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.0002
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0861
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.109
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.012
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.014
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.00016
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000226
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	156
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	158
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	4
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00023
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	0.00045
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00066
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1220
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00057
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	0.00062
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.12
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	87.9
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	12.82
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.162
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	690
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.174
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	0.000122
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0763
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0809
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	73
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	82.8
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00906
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.0212

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	0.0000067
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00697
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00554
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.0132
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.015
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	26.2
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.04
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	456
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	125.3
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.4
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.3
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0201
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.73
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.82
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.103
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.11
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.82
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	2.1
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	3.34
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	3.43
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.235
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.254
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	441
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	0
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	0.000014
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	0.000018
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00085
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	892
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.461
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	1.39
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	18.4
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	0.34
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	3.81
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.0048
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00566
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	0.00058
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0083
12	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0129
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	223
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	223
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0024
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0032
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00034
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00035
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.00011
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00014
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0768
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0787
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.01
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.012
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000187
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000182
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	158
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	166
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	2.24
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	<0.0001
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	0.00018
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00017
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1290
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00035
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.44
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	87
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	12.22
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.166
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	757
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	<0.01
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0704
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0743
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	88
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	89.2
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00744
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00738
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00305
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00319
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.0128
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.0134
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	30.3
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0148
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	472
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	149.4
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.43
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.26
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0054
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.5
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.38
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.134

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.132
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.65
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.67
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	3.07
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	2.93
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.202
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.213
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	499
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	1.5
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	0.000013
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	0.000013
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1020
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.05
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	1.61
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	5
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	2.27
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	1.97
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00517
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00528
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0093
20	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0085
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	169
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	4.4
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	173
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.007
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.108
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00028
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00031
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.00011
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00016
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0608
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0697
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.01
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.011
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.05
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.00018
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000205
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	118
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	122
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	3.19
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00024
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	0.00062
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00074
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	940
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00056
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	0.0006
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	2.72
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	11.78
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.146
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	526
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.012
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.098
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	0.000074
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0452
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0458
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	56.2
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	58.7
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.0103
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.0144
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00294
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00302
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.0115
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.0123
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	19.6
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0062
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	364
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	148
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.31
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.31
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.01
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.04
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.11
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.079
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0791
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.7
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.97
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	2.74
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	2.83
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.143
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.15
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	327
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	3.4
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	0.000011
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	0.000015
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00338
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	700

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.383
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	2.96
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	6.3
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	4.11
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	4.09
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00342
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00347
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	0.00066
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0083
27	4	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0113
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	178
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	3.4
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	181
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0045
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.105
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00022
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00025
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.00011
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00014
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0528
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.063
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	<0.01
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	<0.01
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.05
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000135
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000166
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	100
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	100
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	2.1
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00023
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	0.00022
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00034
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	848
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.0004
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	0.00055
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.96
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	11.36
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.159
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	456
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.144
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	0.000118
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0328
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0334
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	50.2
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	42.6
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.0061
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.0139
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00232
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00252
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00769
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00784
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	15.7
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0085
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	259
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	117.8
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.41
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.31
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0156
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	1.65
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	1.59
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0664
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0578
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.62
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.9
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	2.08
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	1.9
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.134
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.138
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	254
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	5.3
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	0.00001
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	0.000013
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00116
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	584
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.05
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	2.91
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	11.8
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	0.522
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	1.86
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.0028
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00294
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	0.00061
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0056
4	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0081
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	186
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	2.8
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	189
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0046
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.031

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00025
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00026
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.00013
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00018
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0535
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0562
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.012
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.011
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.05
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000134
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000151
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	110
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	108
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	2.97
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00012
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	0.00017
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00022
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	878
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00065
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	0.00087
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.64
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	11.88
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.171
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	492
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.044
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.044
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0417
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	52.7
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	53.4
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.0052
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00824
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00858
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00676
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00749
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00768
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	17.7
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0081
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	461
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	173.3
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.35
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.32
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0104
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	1.93
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	1.94
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0675
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.063
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.56
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.61
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	2.57
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	2.51
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.14
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.132
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	269
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	3.5
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	0.00001
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00055
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	629
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.05
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	1.87
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	2.6
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	2.25
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	1.45
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.0032
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00304
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0055
10	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0064
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	157
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	9.8
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	166
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0023
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0648
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.0002
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.0002
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00012
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0486
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0556
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	<0.01
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	<0.01
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.05
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000915
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000116
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	90.5
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	93.8

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	2.24
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00016
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00016
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	742
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00026
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.43
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	97.1
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	12.18
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.167
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	395
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.094
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	0.000057
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0317
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0351
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	41.1
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	44.5
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00309
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00825
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00226
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00226
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00469
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00555
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	13.7
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0043
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	377
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	144.2
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.44
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.33
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0205
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	1.47
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	1.56
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0541
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0539
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.37
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.59
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	2.15
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	2.33
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.128
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.125
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	225
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	5.6
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00125
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	481
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.05
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	1.45
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	9.7
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	2.71
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00254
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00252
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0031
17	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0058
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	163
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	17.6
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	181
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0018
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0115
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00027
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00022
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.0001
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.0001
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0559
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0534
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	<0.01
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	<0.01
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.05
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000757
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000843
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	111
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	111
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	2.82
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	<0.0001
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	840
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00026
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.42
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	105.4
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	13.04
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.17
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	488
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.019
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0425

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0435
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	51.3
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	51.9
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.0034
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00413
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00271
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00277
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00458
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00486
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	14.8
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0071
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	295
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	189
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.68
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.52
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0092
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	1.82
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	1.86
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0574
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0622
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.26
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.35
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	2.62
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	2.84
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.129
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.138
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	249
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	6.1
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	596
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.331
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	1.63
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	4.4
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.96
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00307
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00316
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.002
24	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0036
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	158
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	158
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0032
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0419
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00016
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00017
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.0001
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00014
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0456
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.045
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	<0.01
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	<0.01
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.05
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000049
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000655
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	73
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	70.3
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	1.4
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00014
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	593
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00027
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	2.05
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	85.1
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	10.95
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.151
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	313
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.044
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.028
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0241
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	31.8
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	31.7
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00163
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00451
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00182
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00168
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00249
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00254
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	8.47
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0069
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	318
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	140.8
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0019
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.25
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.22

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0114
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	1.31
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	1.18
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0331
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0345
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.65
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.68
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	1.9
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	1.71
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.103
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.11
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	136
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	4.6
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00108
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	383
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.371
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	2.07
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	4.8
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	2.11
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00192
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00203
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0027
31	5	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	<0.003
4	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	15.1
4	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	170.4
4	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.1
4	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	5.8
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	144
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	145
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0034
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.121
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0054
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00013
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00015
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00019
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.037
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0431
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	<0.01
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	<0.01
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.05
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000035
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000628
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	59.1
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	66.3
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	0.94
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00028
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00018
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	490
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00026
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.72
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	10.84
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	DMSeO - Dimethylselenoxide	mg/L	<0.00001
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.147
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	256
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.185
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	0.000114
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0212
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0206
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	26.3
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	27.8
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00115
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.0118
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00115
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00129
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00188
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00273
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	6.64
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.001
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	241
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	205.7
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0015
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	7.99
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.15
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0175
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	1.02
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	1.11
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Se(IV) - Selenite	mg/L	0.000066
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Se(VI) - Selenate	mg/L	0.0228
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	SeCN - Selenocyanate	mg/L	<0.00001
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.02415
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0246
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium Unknown	mg/L	<0.00001
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenosulphate	mg/L	<0.00001
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	SeMe - Selenomethionine	mg/L	<0.00001
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.66

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.81
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	1.38
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	1.5
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.0851
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.0936
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	103
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	4.8
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00146
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	313
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.34
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	1.86
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	17.8
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	10.61
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	4.29
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00145
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00159
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	0.00069
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0023
7	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0053
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	155
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	155
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0059
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.106
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00016
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00017
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00015
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0338
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0374
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	<0.01
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	<0.01
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.05
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000102
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000119
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	66.9
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	70.9
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	0.45
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.00245
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00108
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00012
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	532
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00041
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	0.00052
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.9
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	10.93
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.14
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	293
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.036
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.169
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	0.000104
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0271
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0278
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	30.6
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	31.1
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00162
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00703
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.0012
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00117
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00428
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.0048
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	11.1
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0014
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	346
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	160.3
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0039
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.03
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.07
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0106
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	1.17
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	1.27
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0401
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0449
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.62
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.86
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	1.57
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	1.61
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.0876
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.0905
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	120
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	3.5
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00066
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	356
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.534
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	1.98

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	9.6
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	0.79
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	2.53
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00199
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00207
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.005
14	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0068
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	160
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	160
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0027
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.135
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00017
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.0002
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00021
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0345
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0343
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	<0.01
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	<0.01
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.05
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000101
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000133
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	69.6
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	72.4
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	0.81
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.0003
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00019
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	543
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00031
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	0.00053
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.58
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	10.45
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.141
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	298
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.226
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	0.000187
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0268
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0269
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	30.2
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	27.4
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00132
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.0125
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00153
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00162
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00423
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00473
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	9.42
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.002
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	487
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	164.4
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0012
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	7.97
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.23
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0199
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	1.28
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	1.31
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0417
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0389
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.67
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.74
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	1.64
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	1.61
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.0896
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.0973
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	103
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	5.4
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	0.000012
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0021
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	367
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.448
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	1.93
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	13.7
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	5.74
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.0021
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00213
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	0.00082
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0037
22	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0067
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	150
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	3.2
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	153
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.002
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0333
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00013
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.0002

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00014
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0324
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0343
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	<0.01
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	<0.01
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.05
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000818
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000984
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	66
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	70
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	0.92
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00013
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	540
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	<0.0002
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.84
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	10.38
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.163
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	282
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.051
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	0.000069
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.026
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0276
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	28.4
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	29.5
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00115
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00595
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00141
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00158
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00305
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00355
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	8.26
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0021
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	326
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	150
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0023
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	7.89
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.32
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0228
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	1.2
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	1.26
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0323
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0343
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.56
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.66
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	1.58
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	1.63
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.0911
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.0986
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	107
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	6
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00044
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	311
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.525
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.93
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	6.9
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	6.84
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	2.37
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.0018
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00199
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	0.00057
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0027
28	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.006
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	175
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as HCO3)	mg/L	214
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CO3)	mg/L	<1
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as OH)	mg/L	<1
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	175
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0027
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0769
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0053
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Anion Sum	meq/L	6.03
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00016
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00018
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.00011
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00015
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0332
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0331
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	<0.01
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	<0.01
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.05
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000665
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000906
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	68.8

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	67
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cation - Anion Balance	%	96.2
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cation Sum	meq/L	5.8
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	0.74
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00022
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	487
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity, Field	uS/cm	368.9
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00026
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.49
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	85
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	10.72
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	DMS _{Se} O - Dimethylselenoxide	mg/L	<0.00001
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.149
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO ₃)	mg/L	285
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ion balance (APHA)	%	1.94
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.116
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	0.000086
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0239
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0224
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	27.6
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	28
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00108
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00724
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00134
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00138
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00296
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00335
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	7.58
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0146
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	223
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	7.7
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	7.96
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.015
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	1.21
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	1.23
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Se(IV) - Selenite	mg/L	0.000077
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Se(VI) - Selenate	mg/L	0.0272
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	SeCN - Selenocyanate	mg/L	<0.00001
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.027533333
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0288
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium Unknown	mg/L	<0.00001
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenosulphate	mg/L	<0.00001
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	SeMe - Selenomethionine	mg/L	<0.00001
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.52
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.73
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	1.49
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	1.5
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Specific Conductivity	uS/cm	589
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.0825
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.0872
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	94.2
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphur (S)-Dissolved	mg/L	36.6
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphur (S)-Total	mg/L	37.1
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	5.4
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00067
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	344
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	1.14
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	1.86
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	8
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	1.36
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.0017
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00178
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	0.00055
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.003
29	6	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.004
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO ₃)	mg/L	<2
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO ₃)	mg/L	165
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO ₃)	mg/L	<1
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO ₃)	mg/L	<1
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO ₃)	mg/L	165
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0018
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0157
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00017
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00018
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00013
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0357
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0367
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	<0.01
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	<0.01
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.05
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000642
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000808
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	74.4
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	73.9
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	1.38
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00011
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	579
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00021
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.12
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	86
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	10.38
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.156
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	308
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.026
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0298
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0264
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	29.8
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	30.9
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00128
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00456
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00165
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00156
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00293
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00333
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	9.12
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0036
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	258
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	256.9
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.04
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.2
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0069
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	1.28
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	1.31
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.04
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0382
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.54
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.6
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	1.91
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	1.93
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.0965
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.0958
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	125
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	7.2
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	397
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.365
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	1.2
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	6.1
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	1.46
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	1.09
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00227
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00228
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0027
4	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0036
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	172
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	172
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0014
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0092
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.0002
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.0002
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00011
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0403
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0435
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	<0.01
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	<0.01
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.05
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000649
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000701
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	74.5
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	70
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	0.96
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	<0.0001
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	604
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00024
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.05
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	111.3
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	9.57
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.161
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	321
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.016
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0302
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0317

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	32.8
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	30.6
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.0016
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00251
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00171
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00183
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00297
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00333
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	9.18
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0011
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	204
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	109.8
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.16
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.21
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0041
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	1.31
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	1.35
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0472
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0436
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.45
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.58
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	1.63
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	1.75
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.11
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.11
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	143
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	13.67
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	417
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.156
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.94
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	3
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.46
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00223
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00229
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0029
15	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0031
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	160
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	16
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	176
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	<0.001
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0043
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.0002
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00022
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00012
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0515
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0485
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	<0.01
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.01
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.05
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000916
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000941
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	95.8
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	93.1
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	0.96
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	<0.0001
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	750
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	<0.0002
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	<0.5
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	10.2
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.199
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	422
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.011
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0391
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0372
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	44.5
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	43.7
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00244
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00321
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00187
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00183
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.0045
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00462
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	12.2
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0083
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	349
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	-58
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.6
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.5
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.004
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	1.67

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	1.65
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0616
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0598
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.5
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.6
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	1.9
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	1.87
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.118
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.119
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	206
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	11.8
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	534
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.355
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.64
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	1.7
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.26
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00281
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00292
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0039
25	7	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0043
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	210
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	18
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	228
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0016
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0068
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0063
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00027
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00026
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00012
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0754
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0787
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.013
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.015
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000728
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000763
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	132
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	139
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	5.94
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.00014
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.0001
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1070
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00021
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.98
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	9.02
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	DMSeO - Dimethylselenoxide	mg/L	<0.00001
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.155
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	616
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.012
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.024
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.059
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0525
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	69.5
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	72.3
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00441
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00499
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	MeSe(IV) - Methylseleninic Acid	mg/L	0.00002
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00456
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00468
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00585
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00612
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	18.2
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0089
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	380
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	140.1
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.2
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.44
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0108
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.28
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.32
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Se(IV) - Selenite	mg/L	0.000225
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Se(VI) - Selenate	mg/L	0.0585
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	SeCN - Selenocyanate	mg/L	<0.00001
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.06575
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0622
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium Unknown	mg/L	<0.00001
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenosulphate	mg/L	<0.00001
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	SeMe - Selenomethionine	mg/L	<0.00001
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	2.17
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	2.07
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	3.42
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	3.54
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.172

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.173
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	350
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	11.3
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	817
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.069
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.9
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	1.9
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	0
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.21
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00426
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00448
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0047
16	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0046
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	216
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	9
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	225
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	<0.001
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0086
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0062
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00028
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00029
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00012
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0814
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0798
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.013
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.013
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000129
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000123
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	130
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	147
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	2.55
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.00011
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00014
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00011
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1070
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00024
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.64
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	85.3
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	8.91
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.186
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	631
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.022
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.06
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.058
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	74.5
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	78.8
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00373
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00524
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00288
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00292
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00752
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00794
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	19.7
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0141
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	312
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	146
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.11
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.38
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0037
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.3
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.37
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.116
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0919
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	2.2
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	2.21
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	2.79
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	2.94
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.173
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.179
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	379
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	13.2
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	893
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.05
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.69
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	2.2
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	0.79
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.66
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00426
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00447

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0058
23	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0055
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	205
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	16.4
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	221
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0024
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0108
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0055
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00021
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00021
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00017
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0718
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0705
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.012
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.013
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000721
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000932
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	123
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	124
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	5.29
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.0002
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	978
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	<0.0002
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	<0.5
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	10.06
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.19
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	548
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.022
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0543
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0567
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	58.6
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	63.7
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00352
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00463
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00377
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00395
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00478
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00514
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	15.3
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0054
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	313
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	218.7
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0038
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	7.78
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.49
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0086
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	1.98
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	1.84
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0692
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0618
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	2.05
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.98
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	3.41
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	3.5
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.162
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.171
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	323
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	10.82
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	734
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.432
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	<0.5
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	3.2
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	0
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.47
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00357
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00356
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	0.00061
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0031
26	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0044
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	183
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	12
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	195
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0015
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	<0.0165
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.0002
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00022
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.0001
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00021
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0744
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.071
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.012
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.013
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000619
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000071
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	115
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	117
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	5.4
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.00012
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00018
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	896
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	<0.0002
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.55
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	84.3
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	9.39
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.183
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	534
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.023
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0515
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0508
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	60
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	60.2
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00358
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00498
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00329
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.0033
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00371
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00376
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	12.8
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0062
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	301
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	95.8
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.17
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.39
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.008
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	1.96
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	1.93
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0578
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0504
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	2.12
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	2.16
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	4.55
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	4.64
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.16
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.159
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	289
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	10.4
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	664
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.382
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.63
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	2.4
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	-0.64
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.45
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00331
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00329
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.003
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0026
30	8	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0056
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	196
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	11.8
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	208
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0015
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0064
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00028
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00027
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00019
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0915
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.08
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.013
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.013
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000138
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000147
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	152
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	142
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	1.71
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.0001
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1100
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	<0.0002
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	0.00077

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.63
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	86.7
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	9.54
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.189
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	685
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.018
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0624
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0518
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	74.2
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	72
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00324
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00368
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00286
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00275
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.0087
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00878
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	21.2
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0079
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	315
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	136.8
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.12
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.38
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0073
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.12
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.07
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.113
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.101
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	2.01
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	2.05
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	2.73
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	2.48
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.185
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.169
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	381
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	10.9
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	0.00001
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	934
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.05
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.69
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	<1
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	-2.3
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.26
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00445
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00431
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.001
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0068
6	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0067
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	219
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	11.8
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	231
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0037
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0057
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0053
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00026
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00023
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00018
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.104
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0898
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.015
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.014
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000597
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000552
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	165
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	141
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	6.68
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00011
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1110
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00036
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.15
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	9.86
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.168
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	736
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.011
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0843
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0639
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	78.8
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	76.4
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00429
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00357
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00536

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00478
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00544
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00513
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	19.6
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	<0.0005
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	329
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	139
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0011
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.23
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.35
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0062
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.44
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.44
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0873
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0637
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	2.11
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	2.02
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	4.84
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	4.55
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.204
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.19
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	385
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	10
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	871
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.426
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.96
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	<1
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	-5.97
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.22
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00491
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00416
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0022
13	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	<0.003
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	215
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	21.6
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	237
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0046
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0125
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00025
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00022
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00012
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0859
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0828
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.014
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.014
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000131
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000633
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	158
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	143
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	7.79
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.00012
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00011
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1120
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00058
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.99
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	9.964
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.188
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	724
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.03
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.032
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0678
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0658
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	79.9
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	78
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	<0.005
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00581
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00532
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00501
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00526
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00521
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	18.6
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0083
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	360
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	130.8
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0034
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.382
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.46
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Dissolved	mg/L	<0.05
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.006
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.32
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.31
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0794
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0659
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	2.08
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	2.17
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	4.78
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	4.55
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.191
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.171
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	392
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	9.7
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	872
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.634
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.9
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	5.4
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	0.36
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	1.71
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00459
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00441
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0028
14	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	<0.003
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	208
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as HCO3)	mg/L	254
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	12.4
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CO3)	mg/L	7.4
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as OH)	mg/L	<1
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	220
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0014
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0085
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Anion Sum	meq/L	14.1
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00023
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00022
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00012
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0871
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0807
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.014
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.014
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000704
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000607
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	138
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	134
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cation - Anion Balance	%	94.3
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cation Sum	meq/L	13.3
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	6.32
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.00013
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	<0.0001
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1020
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity, Field	uS/cm	894
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00029
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.81
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	90.75
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	10.05
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	DMSeO - Dimethylselenoxide	mg/L	<0.00001
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.185
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	651
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ion balance (APHA)	%	2.92
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.024
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0701
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0703
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	74.5
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	71
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00412
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00468
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	MeSe(IV) - Methylseleninic Acid	mg/L	0.000026
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00474
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00473
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00525
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00544
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	18.9
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0067
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	275
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0025
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.395
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.33
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0074
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.28
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.26
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Se(IV) - Selenite	mg/L	0.000267
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Se(VI) - Selenate	mg/L	0.0648
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	SeCN - Selenocyanate	mg/L	<0.00001
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.073266667
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.06425
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium Unknown	mg/L	<0.00001
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenosulphate	mg/L	<0.00001
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	SeMe - Selenomethionine	mg/L	<0.00001
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	2
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	2.06
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	4.41

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	4.33
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Specific Conductivity	uS/cm	1229.5
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.187
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.18
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	394
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphur (S)-Dissolved	mg/L	135
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphur (S)-Total	mg/L	137
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	10.7
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	866
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	1.72
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.76
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	1.3
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.4
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00424
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00423
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0035
15	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	<0.003
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	3
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	229
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	2.8
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	232
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.004
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.012
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0081
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00025
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00031
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	<0.0001
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0855
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0856
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.013
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.016
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000639
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000852
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	147
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	163
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	7.24
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.00011
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00012
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.0001
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1150
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00033
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	0.00065
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.64
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	10.11
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.176
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.012
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.057
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0742
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0741
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	74.5
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	81.9
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00359
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00931
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00541
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00558
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00582
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00625
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	19.6
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	<0.005
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	299
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	71.3
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.34
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.29
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Dissolved	mg/L	<0.05
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0032
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.38
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.32
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0759
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0713
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.62
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.83
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	4.55
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	4.68
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.195
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.196
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	407
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	6.8
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	883
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.329
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.79
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	<1
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	0
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.29
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.0049

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00494
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0023
19	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0031
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	254
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	7.8
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	262
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.004
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0376
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0126
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00025
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00025
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00012
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0882
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0905
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.014
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.015
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000625
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000832
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	152
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	152
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	7.79
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.0001
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00017
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.0001
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1200
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00031
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.78
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	10.22
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.184
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	718
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.014
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.093
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	0.000068
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.105
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.104
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	82.3
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	82.2
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00382
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00973
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00591
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.0058
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.0076
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00791
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	24.7
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0067
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	290
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	88
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.37
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.34
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0354
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.59
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.59
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0839
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0747
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.52
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.63
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	5.23
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	5.29
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.216
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.219
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	427
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	8
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.0003
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1000
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.05
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	1.02
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	1.7
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	0.83
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.39
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00534
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00558
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0031
24	9	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0034
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	255
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	11
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	266
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.005
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0088
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0068
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00026
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00026
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.0001
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	<0.0001
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0872
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0837
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.014
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.014
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000698
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000796
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	174
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	178
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	8.02
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.00011
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00015
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1260
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00032
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.63
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	11.13
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.176
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	846
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.014
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.041
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0962
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0903
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	99.9
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	94.9
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00438
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00723
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.0061
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00605
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00906
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00935
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	25.2
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0073
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	310
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	86
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.37
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.38
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0136
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.82
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.61
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0932
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.076
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.46
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.4
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	5.8
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	5.7
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.22
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.222
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	490
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	5.9
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1060
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.05
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.66
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	1.9
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	1.16
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.51
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00559
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00562
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0027
3	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0041
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	245
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	22.2
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	267
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	<0.001
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0038
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0056
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00024
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00024
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00014
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0734
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0777
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.014
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.015
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000446
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000516
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	176
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	154
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	12.6
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.0001
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00012
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1220
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	<0.0002
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.68
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	11.28

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.188
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	801
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.017
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.032
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0924
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0808
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	87.7
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	87.3
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00442
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.0055
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00722
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.0065
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00591
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00607
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	20
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0095
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	290
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	97.6
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.39
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.52
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.01
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.41
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.54
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0849
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0727
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.24
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.34
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	5.66
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	5.91
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.209
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.193
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	454
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	4.9
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	974
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.05
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.54
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	1.8
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	1.05
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.52
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00562
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.005
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0013
11	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	<0.003
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	272
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	272
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0038
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0122
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0824
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00024
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00024
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00013
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0844
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0837
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.014
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.015
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000071
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000623
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	174
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	198
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	15.1
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.00014
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00013
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1270
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00028
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	0.00059
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.2
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	11.38
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.189
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	786
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.019
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.04
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0954
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0964
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	85.5
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	101
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00512
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00684
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.0068
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00739
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00782
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00861
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	22.6
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0073

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	320
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	92.7
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0025
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.37
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.29
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0091
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.74
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.87
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0917
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0726
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.39
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.44
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	6.39
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	6.87
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.227
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.243
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	473
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	3.2
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1000
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.586
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.79
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	1.9
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	1.03
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.55
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00568
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00595
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0022
17	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0043
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	246
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	9.4
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	255
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	<0.001
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0045
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0056
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00027
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00023
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.0001
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.0001
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0882
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0744
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.014
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.016
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000523
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000524
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	204
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	188
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	15.7
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	<0.0001
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.0001
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1270
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.0002
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.79
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	86
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	11.27
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.187
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	929
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.011
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.024
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.1
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0938
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	102
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	98.2
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00528
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00577
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00801
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.0067
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00797
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00778
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	23
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0088
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	289
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	107.7
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0028
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.41
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.33
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0075
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.9
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.62
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.108
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0805
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.53
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.47
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	6.02
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	6.43
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.251

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.219
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	486
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	3.8
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1060
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	1.09
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.83
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	1.7
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.35
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00568
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00569
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0018
18	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	<0.003
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	262
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	21.1
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	283
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	<0.001
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0064
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	<0.005
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00025
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00026
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00015
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0891
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.09805
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.015
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.0165
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000826
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.00007515
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	190
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	188.5
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	7.245
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.000105
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00011
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1310
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.0002
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	<0.5
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	92.8
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	11.995
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.1785
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	888
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.0195
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.036
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.1064
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.09995
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	100.5
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	100.8
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.0056
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.006295
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00565
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.005845
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00928
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.009675
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	24.3
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0076
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	318.5
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	137.3
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0047
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.415
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.485
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0087
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.765
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.69
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.10835
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0904
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.555
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.635
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	6.135
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	6.095
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.2275
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.2315
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	507
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	3.1
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1120
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.0855
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.52
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	2.6
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	0.88
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.44
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00606
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.006265
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.00285
25	10	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0031
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	212
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	15.4
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	228
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	<0.001
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0158
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0058
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00025
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00024
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0001
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00013
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0737
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0788
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.012
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.013
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000103
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000125
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	152
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	170
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	13
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.0001
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00012
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1320
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00024
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	<0.5
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	75.3
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	10.815
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.161
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	750
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.01
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.029
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.0831
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0849
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	90.1
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	100
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00639
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.00764
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00539
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00509
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.0091
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.0108
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	24.3
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0269
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	336
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	129.95
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.38
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.4
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0127
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.27
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.64
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.135
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0946
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.68
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.71
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	4.55
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	5.37
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.194
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.202
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	473
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	4.15
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	0.00001
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00036
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1080
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.5
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	<0.5
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	2.4
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	0.79
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	1.52
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00544
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00563
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0055
1	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0056
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	278
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	16
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	294
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	<0.001
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0832
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0187
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00022
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00028
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.00012
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00021
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0869
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0868

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.016
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.014
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000773
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000162
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	186
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	201
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	14.5
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.00027
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00042
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	0.00023
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1500
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00022
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	0.00059
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	1.25
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	77.3
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	11.05
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.192
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	861
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.018
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.291
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	0.00017
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.072
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0773
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	96.4
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	100
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00453
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.0268
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00855
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00938
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00768
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00949
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	20
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0149
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	321
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	138.3
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.28
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.39
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0456
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.92
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.75
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.101
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.102
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.51
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.7
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	6.83
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	6.4
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.229
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.24
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	583
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	0.6
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00102
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1220
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.05
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	1.99
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	35.8
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	5.4
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00632
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00702
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	0.00056
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0038
8	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0161
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	366
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	19
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	384
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	<0.002
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0056
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0596
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00024
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00024
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	<0.0002
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00014
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.083
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0733
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00004
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.0001
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	<0.02
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.015
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000104
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000107
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	241
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	258
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	22.8
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.00027
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.0004
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0002
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1680
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	<0.0004

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	2.46
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	13.09
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.192
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	1240
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	<0.02
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.028
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.0001
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.101
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.102
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	154
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	143
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00556
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.0062
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.0138
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.015
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.012
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.0129
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	20.3
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.022
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	302
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	131.5
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0021
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.33
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.42
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0206
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	3.33
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	3.47
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.0941
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.094
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.74
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.91
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00002
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	9.05
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	9.9
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.231
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.246
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	744
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	0.3
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00002
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0002
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0006
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1490
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.517
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	2.31
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	3
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	0.78
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.47
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00863
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00879
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.001
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0022
9	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0047
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	282
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	20.8
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	302
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	<0.001
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0044
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0092
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00024
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00024
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.0001
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00012
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0994
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0821
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.012
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.013
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.0000623
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.0000746
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	198
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	226
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	11.9
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.00012
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00014
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1410
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	<0.0002
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	<0.0005
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.52
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	11.63
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	0.165
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.021
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.035
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	<0.00005
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.092
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.105
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	110
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	123
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.00848
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.0104
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00799
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00865
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.00664
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00742
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	23
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0059

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	339
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	161.2
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	0.0061
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.43
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.49
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Dissolved	mg/L	<0.05
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0094
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.66
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.77
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.106
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0896
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	1.81
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	1.97
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	5.66
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	6.35
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.233
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.256
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	552
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	2.5
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	<0.00001
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	0.000012
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	<0.0003
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1200
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	0.201
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	0.52
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	1.2
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Field	NTU	1.44
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	0.35
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00689
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00727
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0028
23	11	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.003
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Acidity (as CaCO3)	mg/L	<2
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Bicarbonate (as CaCO3)	mg/L	265
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Carbonate (as CaCO3)	mg/L	9
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Alkalinity, Total (as CaCO3)	mg/L	274
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Dissolved	mg/L	0.0016
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Aluminum (Al)-Total	mg/L	0.0328
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Ammonia, Total (as N)	mg/L	0.0243
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Dissolved	mg/L	0.00031
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Antimony (Sb)-Total	mg/L	0.00024
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Dissolved	mg/L	0.0001
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Arsenic (As)-Total	mg/L	0.00013
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Dissolved	mg/L	0.0858
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Barium (Ba)-Total	mg/L	0.0866
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Beryllium (Be)-Total	mg/L	<0.00002
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bismuth (Bi)-Total	mg/L	<0.00005
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Dissolved	mg/L	0.015
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Boron (B)-Total	mg/L	0.013
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Bromide (Br)	mg/L	<0.25
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Dissolved	mg/L	0.000107
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cadmium (Cd)-Total	mg/L	0.000118
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Dissolved	mg/L	237
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Calcium (Ca)-Total	mg/L	183
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chloride (Cl)	mg/L	30.2
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Dissolved	mg/L	0.00012
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Chromium (Cr)-Total	mg/L	0.00276
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Cobalt (Co)-Total	mg/L	<0.0001
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Conductivity	uS/cm	1510
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Dissolved	mg/L	0.00043
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Copper (Cu)-Total	mg/L	0.00054
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Organic Carbon	mg/L	0.9
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	%	80.9
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Dissolved Oxygen, Field	mg/L	11.75
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Fluoride	mg/L	<0.1
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Hardness - Dissolved (as CaCO3)	mg/L	1040
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Dissolved	mg/L	0.019
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Iron (Fe)-Total	mg/L	0.088
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Dissolved	mg/L	<0.00005
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lead (Pb)-Total	mg/L	0.000081
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Dissolved	mg/L	0.104
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Lithium (Li)-Total	mg/L	0.0956
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Dissolved	mg/L	110
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Magnesium (Mg)-Total	mg/L	105
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Dissolved	mg/L	0.0108
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Manganese (Mn)-Total	mg/L	0.013
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Mercury (Hg)-Total	mg/L	<0.000005
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Dissolved	mg/L	0.00943
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Molybdenum (Mo)-Total	mg/L	0.00767
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Dissolved	mg/L	0.007
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nickel (Ni)-Total	mg/L	0.00707
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrate (as N)	mg/L	24.7
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Nitrite (as N)	mg/L	0.0122
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP	mV	434
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	ORP, Field	mV	107.7
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Orthophosphate	mg/L	<0.001
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Field	pH	8.16
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	pH, Lab	pH	8.33
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Phosphorus (P)-Total	mg/L	0.0218
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Dissolved	mg/L	2.88
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Potassium (K)-Total	mg/L	2.75
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Dissolved	mg/L	0.11
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Selenium (Se)-Total	mg/L	0.0909
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Dissolved	mg/L	2.1
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silicon (Si)-Total	mg/L	2.11
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Dissolved	mg/L	<0.00001
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Silver (Ag)-Total	mg/L	<0.00001
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Dissolved	mg/L	6.46
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sodium (Na)-Total	mg/L	6.52

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Dissolved	mg/L	0.264
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Strontium (Sr)-Total	mg/L	0.218
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Sulphate	mg/L	586
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Temperature, Field	deg c	0
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Dissolved	mg/L	0.00001
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Thallium (Tl)-Total	mg/L	<0.00001
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Dissolved	mg/L	<0.0001
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Tin (Sn)-Total	mg/L	<0.0001
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Titanium (Ti)-Total	mg/L	0.00062
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Dissolved Solids	mg/L	1180
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Kjeldahl Nitrogen	mg/L	<0.05
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Organic Carbon	mg/L	2.02
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Total Suspended Solids	mg/L	18.7
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Turbidity, Lab	NTU	9.2
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Dissolved	mg/L	0.00799
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Uranium (U)-Total	mg/L	0.00617
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Dissolved	mg/L	<0.0005
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Vanadium (V)-Total	mg/L	<0.0005
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Dissolved	mg/L	0.0063
16	12	2022	FR_FRCP1 (RG FOBCP)	FR_FRCP1	Zinc (Zn)-Total	mg/L	0.0067
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Acidity (as CaCO3)	mg/L	<2
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Alkalinity, Bicarbonate (as CaCO3)	mg/L	176
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Alkalinity, Bicarbonate (as HCO3)	mg/L	214
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Alkalinity, Carbonate (as CO3)	mg/L	<1
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Alkalinity, Hydroxide (as OH)	mg/L	<1
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Alkalinity, Total (as CaCO3)	mg/L	176
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Aluminum (Al)-Dissolved	mg/L	0.003
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Aluminum (Al)-Total	mg/L	0.0413
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Ammonia, Total (as N)	mg/L	<0.005
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Anion Sum	meq/L	6.43
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Antimony (Sb)-Dissolved	mg/L	0.00018
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Antimony (Sb)-Total	mg/L	0.00018
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Arsenic (As)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Arsenic (As)-Total	mg/L	0.00014
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Barium (Ba)-Dissolved	mg/L	0.0332
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Barium (Ba)-Total	mg/L	0.0336
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Beryllium (Be)-Dissolved	mg/L	<0.00002
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Beryllium (Be)-Total	mg/L	<0.00002
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Bismuth (Bi)-Dissolved	mg/L	<0.00005
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Bismuth (Bi)-Total	mg/L	<0.00005
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Boron (B)-Dissolved	mg/L	<0.01
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Boron (B)-Total	mg/L	<0.01
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Bromide (Br)	mg/L	<0.05
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Cadmium (Cd)-Dissolved	mg/L	0.0000807
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Cadmium (Cd)-Total	mg/L	0.000106
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Calcium (Ca)-Dissolved	mg/L	65.1
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Calcium (Ca)-Total	mg/L	66.2
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Cation - Anion Balance	%	88.2
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Cation Sum	meq/L	5.67
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Chloride (Cl)	mg/L	0.86
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Chromium (Cr)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Chromium (Cr)-Total	mg/L	0.00012
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Cobalt (Co)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Cobalt (Co)-Total	mg/L	<0.0001
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Conductivity	uS/cm	531
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Conductivity, Field	uS/cm	432.4
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Copper (Cu)-Dissolved	mg/L	0.00026
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Copper (Cu)-Total	mg/L	<0.0005
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Dissolved Organic Carbon	mg/L	1.37
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Dissolved Oxygen, Field	%	86.6
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Dissolved Oxygen, Field	mg/L	10.08
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	DMSeO - Dimethylselenoxide	mg/L	<0.00001
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Fluoride	mg/L	0.166
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Hardness - Dissolved (as CaCO3)	mg/L	278
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	ion balance (APHA)	%	6.28
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Iron (Fe)-Dissolved	mg/L	<0.01
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Iron (Fe)-Total	mg/L	0.069
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Lead (Pb)-Dissolved	mg/L	<0.00005
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Lead (Pb)-Total	mg/L	0.00007
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Lithium (Li)-Dissolved	mg/L	0.0247
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Lithium (Li)-Total	mg/L	0.0258
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Magnesium (Mg)-Dissolved	mg/L	28.1
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Magnesium (Mg)-Total	mg/L	28.1
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Manganese (Mn)-Dissolved	mg/L	0.00145
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Manganese (Mn)-Total	mg/L	0.00662
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Mercury (Hg)-Dissolved	mg/L	<0.000005
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Mercury (Hg)-Total	mg/L	<0.000005
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Molybdenum (Mo)-Dissolved	mg/L	0.00152
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Molybdenum (Mo)-Total	mg/L	0.00145
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Nickel (Ni)-Dissolved	mg/L	0.00327
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Nickel (Ni)-Total	mg/L	0.0036
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Nitrate (as N)	mg/L	8.5
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Nitrite (as N)	mg/L	0.0038
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	ORP	mV	347
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Orthophosphate	mg/L	0.0045
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	pH, Field	pH	7.74
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	pH, Lab	pH	8.2
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Phosphorus (P)-Total	mg/L	0.0192
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Potassium (K)-Dissolved	mg/L	1.21
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Potassium (K)-Total	mg/L	1.21
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Se(IV) - Selenite	mg/L	0.000085
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Se(VI) - Selenate	mg/L	0.0308
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	SeCN - Selenocyanate	mg/L	<0.00001
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Selenium (Se)-Dissolved	mg/L	0.031066667
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Selenium (Se)-Total	mg/L	0.0308
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Selenium Unknown	mg/L	<0.00001
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Selenosulphate	mg/L	<0.00001
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	SeMe - Selenomethionine	mg/L	<0.00001
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Silicon (Si)-Dissolved	mg/L	1.56
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Silicon (Si)-Total	mg/L	1.63
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Silver (Ag)-Dissolved	mg/L	<0.00001
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Silver (Ag)-Total	mg/L	<0.00001
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Sodium (Na)-Dissolved	mg/L	1.8
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Sodium (Na)-Total	mg/L	1.75
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Specific Conductivity	uS/cm	629
28	6	2022	FR_FRCP1SW (RG FRCP1SW)	FR_FRCP1SW	Strontium (Sr)-Dissolved	mg/L	0.0906

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Strontium (Sr)-Total	mg/L	0.0914
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Sulphate	mg/L	109
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Sulphur (S)-Dissolved	mg/L	35.3
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Sulphur (S)-Total	mg/L	36.7
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Temperature, Field	deg c	8.6
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Thallium (Tl)-Dissolved	mg/L	<0.00001
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Thallium (Tl)-Total	mg/L	<0.00001
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Tin (Sn)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Tin (Sn)-Total	mg/L	<0.0001
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Titanium (Ti)-Dissolved	mg/L	<0.0003
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Titanium (Ti)-Total	mg/L	0.00045
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Total Dissolved Solids	mg/L	380
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Total Kjeldahl Nitrogen	mg/L	<0.5
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Total Organic Carbon	mg/L	1.52
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Total Suspended Solids	mg/L	10.7
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Turbidity, Lab	NTU	3.5
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Uranium (U)-Dissolved	mg/L	0.00198
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Uranium (U)-Total	mg/L	0.00197
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Vanadium (V)-Dissolved	mg/L	<0.0005
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Vanadium (V)-Total	mg/L	<0.0005
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Zinc (Zn)-Dissolved	mg/L	0.003
28	6	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Zinc (Zn)-Total	mg/L	0.0041
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Acidity (as CaCO3)	mg/L	<2
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Alkalinity, Bicarbonate (as CaCO3)	mg/L	235
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Alkalinity, Bicarbonate (as HCO3)	mg/L	287
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Alkalinity, Carbonate (as CaCO3)	mg/L	13.2
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Alkalinity, Carbonate (as CO3)	mg/L	7.9
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Alkalinity, Hydroxide (as OH)	mg/L	<1
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Alkalinity, Total (as CaCO3)	mg/L	248
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Aluminum (Al)-Dissolved	mg/L	<0.001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Aluminum (Al)-Total	mg/L	0.0055
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Ammonia, Total (as N)	mg/L	<0.005
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Anion Sum	meq/L	14.6
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Antimony (Sb)-Dissolved	mg/L	0.00023
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Antimony (Sb)-Total	mg/L	0.00025
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Arsenic (As)-Dissolved	mg/L	<0.0001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Arsenic (As)-Total	mg/L	0.00014
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Barium (Ba)-Dissolved	mg/L	0.0976
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Barium (Ba)-Total	mg/L	0.0863
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Beryllium (Be)-Dissolved	mg/L	<0.00002
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Beryllium (Be)-Total	mg/L	<0.00002
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Bismuth (Bi)-Dissolved	mg/L	<0.00005
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Bismuth (Bi)-Total	mg/L	<0.00005
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Boron (B)-Dissolved	mg/L	0.014
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Boron (B)-Total	mg/L	0.014
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Bromide (Br)	mg/L	<0.25
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Cadmium (Cd)-Dissolved	mg/L	0.0000551
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Cadmium (Cd)-Total	mg/L	0.0000578
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Calcium (Ca)-Dissolved	mg/L	152
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Calcium (Ca)-Total	mg/L	136
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Cation - Anion Balance	%	99.3
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Cation Sum	meq/L	14.5
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Chloride (Cl)	mg/L	7.18
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Chromium (Cr)-Dissolved	mg/L	<0.0001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Chromium (Cr)-Total	mg/L	<0.0001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Cobalt (Co)-Dissolved	mg/L	<0.0001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Cobalt (Co)-Total	mg/L	<0.0001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Conductivity	uS/cm	1170
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Conductivity, Field	uS/cm	839
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Copper (Cu)-Dissolved	mg/L	<0.0002
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Copper (Cu)-Total	mg/L	<0.0005
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Dissolved Organic Carbon	mg/L	<0.5
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Dissolved Oxygen, Field	%	87.4
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Dissolved Oxygen, Field	mg/L	11.11
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	DMSeO - Dimethylselenoxide	mg/L	<0.00001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Fluoride	mg/L	0.183
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Hardness - Dissolved (as CaCO3)	mg/L	712
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	ion balance (APHA)	%	0.344
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Iron (Fe)-Dissolved	mg/L	0.012
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Iron (Fe)-Total	mg/L	0.02
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Lead (Pb)-Dissolved	mg/L	<0.00005
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Lead (Pb)-Total	mg/L	<0.00005
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Lithium (Li)-Dissolved	mg/L	0.0752
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Lithium (Li)-Total	mg/L	0.0698
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Magnesium (Mg)-Dissolved	mg/L	80.8
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Magnesium (Mg)-Total	mg/L	77.3
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Manganese (Mn)-Dissolved	mg/L	0.00276
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Manganese (Mn)-Total	mg/L	0.00337
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Mercury (Hg)-Dissolved	mg/L	<0.000005
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Mercury (Hg)-Total	mg/L	<0.000005
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	MeSe(IV) - Methylseleninic Acid	mg/L	0.000017
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Molybdenum (Mo)-Dissolved	mg/L	0.00556
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Molybdenum (Mo)-Total	mg/L	0.00512
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Nickel (Ni)-Dissolved	mg/L	0.00585
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Nickel (Ni)-Total	mg/L	0.0062
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Nitrate (as N)	mg/L	19.6
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Nitrite (as N)	mg/L	0.0056
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	ORP	mV	301
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Orthophosphate	mg/L	<0.001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	pH, Field	pH	8.37
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	pH, Lab	pH	8.4
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Phosphorus (P)-Total	mg/L	0.0085
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Potassium (K)-Dissolved	mg/L	2.3
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Potassium (K)-Total	mg/L	2.36
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Se(IV) - Selenite	mg/L	0.000184
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Se(VI) - Selenate	mg/L	0.0439
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	SeCN - Selenocyanate	mg/L	<0.00001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Selenium (Se)-Dissolved	mg/L	0.07295
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Selenium (Se)-Total	mg/L	0.06455
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Selenium Unknown	mg/L	<0.00001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Selenosulphate	mg/L	<0.00001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	SeMe - Selenomethionine	mg/L	<0.00001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Silicon (Si)-Dissolved	mg/L	1.76
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Silicon (Si)-Total	mg/L	1.61
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Silver (Ag)-Dissolved	mg/L	<0.00001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Silver (Ag)-Total	mg/L	<0.00001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Sodium (Na)-Dissolved	mg/L	4.94
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Sodium (Na)-Total	mg/L	4.77
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Specific Conductivity	uS/cm	1275

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Strontium (Sr)-Dissolved	mg/L	0.204
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Strontium (Sr)-Total	mg/L	0.184
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Sulphate	mg/L	388
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Sulphur (S)-Dissolved	mg/L	142
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Sulphur (S)-Total	mg/L	138
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Temperature, Field	deg c	7.6
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Thallium (Tl)-Dissolved	mg/L	<0.00001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Thallium (Tl)-Total	mg/L	<0.00001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Tin (Sn)-Dissolved	mg/L	<0.0001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Tin (Sn)-Total	mg/L	<0.0001
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Titanium (Ti)-Dissolved	mg/L	<0.0003
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Titanium (Ti)-Total	mg/L	<0.0003
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Total Dissolved Solids	mg/L	893
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Total Kjeldahl Nitrogen	mg/L	2.51
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Total Organic Carbon	mg/L	<0.5
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Total Suspended Solids	mg/L	<1
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Turbidity, Lab	NTU	0.23
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Uranium (U)-Dissolved	mg/L	0.00445
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Uranium (U)-Total	mg/L	0.00471
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Vanadium (V)-Dissolved	mg/L	<0.0005
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Vanadium (V)-Total	mg/L	<0.0005
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Zinc (Zn)-Dissolved	mg/L	0.0024
19	9	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Zinc (Zn)-Total	mg/L	<0.003
12	12	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Dissolved Oxygen, Field	mg/L	0
12	12	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	pH, Field	pH	0
12	12	2022	FR_FRCP1SW (RG_FRCP1SW)	FR_FRCP1SW	Temperature, Field	deg c	0
19	1	2022	RG_FRSCH2	RG_FRSCH2	Acidity (as CaCO3)	mg/L	8.1
19	1	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	271
19	1	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Bicarbonate (as HCO3)	mg/L	331
19	1	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
19	1	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Carbonate (as CO3)	mg/L	<1
19	1	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
19	1	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Hydroxide (as OH)	mg/L	<1
19	1	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Total (as CaCO3)	mg/L	271
19	1	2022	RG_FRSCH2	RG_FRSCH2	Aluminum (Al)-Dissolved	mg/L	<0.001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Aluminum (Al)-Total	mg/L	<0.003
19	1	2022	RG_FRSCH2	RG_FRSCH2	Ammonia, Total (as N)	mg/L	<0.005
19	1	2022	RG_FRSCH2	RG_FRSCH2	Anion Sum	meq/L	15.6
19	1	2022	RG_FRSCH2	RG_FRSCH2	Antimony (Sb)-Dissolved	mg/L	<0.0001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Antimony (Sb)-Total	mg/L	<0.0001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Arsenic (As)-Dissolved	mg/L	<0.0001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Arsenic (As)-Total	mg/L	<0.0001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Barium (Ba)-Dissolved	mg/L	0.0822
19	1	2022	RG_FRSCH2	RG_FRSCH2	Barium (Ba)-Total	mg/L	0.0816
19	1	2022	RG_FRSCH2	RG_FRSCH2	Beryllium (Be)-Dissolved	mg/L	<0.00002
19	1	2022	RG_FRSCH2	RG_FRSCH2	Beryllium (Be)-Total	mg/L	<0.00002
19	1	2022	RG_FRSCH2	RG_FRSCH2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
19	1	2022	RG_FRSCH2	RG_FRSCH2	Bismuth (Bi)-Total	mg/L	<0.00005
19	1	2022	RG_FRSCH2	RG_FRSCH2	Boron (B)-Dissolved	mg/L	0.013
19	1	2022	RG_FRSCH2	RG_FRSCH2	Boron (B)-Total	mg/L	0.013
19	1	2022	RG_FRSCH2	RG_FRSCH2	Bromide (Br)	mg/L	<0.25
19	1	2022	RG_FRSCH2	RG_FRSCH2	Cadmium (Cd)-Dissolved	mg/L	0.0000281
19	1	2022	RG_FRSCH2	RG_FRSCH2	Cadmium (Cd)-Total	mg/L	0.0000359
19	1	2022	RG_FRSCH2	RG_FRSCH2	Calcium (Ca)-Dissolved	mg/L	153
19	1	2022	RG_FRSCH2	RG_FRSCH2	Calcium (Ca)-Total	mg/L	157
19	1	2022	RG_FRSCH2	RG_FRSCH2	Cation - Anion Difference	%	6.12
19	1	2022	RG_FRSCH2	RG_FRSCH2	Cation - Anion Ratio	%	88.5
19	1	2022	RG_FRSCH2	RG_FRSCH2	Cation Sum	meq/L	13.8
19	1	2022	RG_FRSCH2	RG_FRSCH2	Chloride (Cl)	mg/L	1.97
19	1	2022	RG_FRSCH2	RG_FRSCH2	Chromium (Cr)-Dissolved	mg/L	0.00011
19	1	2022	RG_FRSCH2	RG_FRSCH2	Chromium (Cr)-Total	mg/L	0.00014
19	1	2022	RG_FRSCH2	RG_FRSCH2	Cobalt (Co)-Dissolved	mg/L	<0.0001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Cobalt (Co)-Total	mg/L	<0.0001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Conductivity	uS/cm	1230
19	1	2022	RG_FRSCH2	RG_FRSCH2	Conductivity, Field	uS/cm	925
19	1	2022	RG_FRSCH2	RG_FRSCH2	Copper (Cu)-Dissolved	mg/L	<0.0002
19	1	2022	RG_FRSCH2	RG_FRSCH2	Copper (Cu)-Total	mg/L	<0.0005
19	1	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Organic Carbon	mg/L	<0.5
19	1	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Oxygen, Field	%	64.7
19	1	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Oxygen, Field	mg/L	8.37
19	1	2022	RG_FRSCH2	RG_FRSCH2	DMS ₂ SeO - Dimethylselenoxide	mg/L	<0.00001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Fluoride	mg/L	0.13
19	1	2022	RG_FRSCH2	RG_FRSCH2	Hardness - Dissolved (as CaCO3)	mg/L	679
19	1	2022	RG_FRSCH2	RG_FRSCH2	Iron (Fe)-Dissolved	mg/L	<0.01
19	1	2022	RG_FRSCH2	RG_FRSCH2	Iron (Fe)-Total	mg/L	<0.01
19	1	2022	RG_FRSCH2	RG_FRSCH2	Lead (Pb)-Dissolved	mg/L	<0.00005
19	1	2022	RG_FRSCH2	RG_FRSCH2	Lead (Pb)-Total	mg/L	<0.00005
19	1	2022	RG_FRSCH2	RG_FRSCH2	Lithium (Li)-Dissolved	mg/L	0.0486
19	1	2022	RG_FRSCH2	RG_FRSCH2	Lithium (Li)-Total	mg/L	0.0483
19	1	2022	RG_FRSCH2	RG_FRSCH2	Magnesium (Mg)-Dissolved	mg/L	72.2
19	1	2022	RG_FRSCH2	RG_FRSCH2	Magnesium (Mg)-Total	mg/L	75.8
19	1	2022	RG_FRSCH2	RG_FRSCH2	Manganese (Mn)-Dissolved	mg/L	0.00022
19	1	2022	RG_FRSCH2	RG_FRSCH2	Manganese (Mn)-Total	mg/L	0.00034
19	1	2022	RG_FRSCH2	RG_FRSCH2	Mercury (Hg)-Dissolved	mg/L	<0.000005
19	1	2022	RG_FRSCH2	RG_FRSCH2	Mercury (Hg)-Total	mg/L	<0.0000005
19	1	2022	RG_FRSCH2	RG_FRSCH2	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
19	1	2022	RG_FRSCH2	RG_FRSCH2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Molybdenum (Mo)-Dissolved	mg/L	0.000698
19	1	2022	RG_FRSCH2	RG_FRSCH2	Molybdenum (Mo)-Total	mg/L	0.000742
19	1	2022	RG_FRSCH2	RG_FRSCH2	Nickel (Ni)-Dissolved	mg/L	0.00051
19	1	2022	RG_FRSCH2	RG_FRSCH2	Nickel (Ni)-Total	mg/L	0.00052
19	1	2022	RG_FRSCH2	RG_FRSCH2	Nitrate (as N)	mg/L	28.2
19	1	2022	RG_FRSCH2	RG_FRSCH2	Nitrite (as N)	mg/L	<0.005
19	1	2022	RG_FRSCH2	RG_FRSCH2	ORP	mV	250
19	1	2022	RG_FRSCH2	RG_FRSCH2	Orthophosphate	mg/L	0.0014
19	1	2022	RG_FRSCH2	RG_FRSCH2	pH, Field	pH	7.54
19	1	2022	RG_FRSCH2	RG_FRSCH2	pH, Lab	pH	7.86
19	1	2022	RG_FRSCH2	RG_FRSCH2	Phosphorus (P)-Total	mg/L	0.0031
19	1	2022	RG_FRSCH2	RG_FRSCH2	Potassium (K)-Dissolved	mg/L	2.1
19	1	2022	RG_FRSCH2	RG_FRSCH2	Potassium (K)-Total	mg/L	2.08
19	1	2022	RG_FRSCH2	RG_FRSCH2	Se(IV) - Selenite	mg/L	0.000023
19	1	2022	RG_FRSCH2	RG_FRSCH2	Se(VI) - Selenate	mg/L	0.0933
19	1	2022	RG_FRSCH2	RG_FRSCH2	SeCN - Selenocyanate	mg/L	<0.00001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Selenium (Se)-Dissolved	mg/L	0.1085
19	1	2022	RG_FRSCH2	RG_FRSCH2	Selenium (Se)-Total	mg/L	0.10466667
19	1	2022	RG_FRSCH2	RG_FRSCH2	Selenium Unknown	mg/L	<0.00001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Selenosulphate	mg/L	<0.00001
19	1	2022	RG_FRSCH2	RG_FRSCH2	SeMe - Selenomethionine	mg/L	<0.00001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Silicon (Si)-Dissolved	mg/L	2.51
19	1	2022	RG_FRSCH2	RG_FRSCH2	Silicon (Si)-Total	mg/L	2.26
19	1	2022	RG_FRSCH2	RG_FRSCH2	Silver (Ag)-Dissolved	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
19	1	2022	RG_FRSCH2	RG_FRSCH2	Silver (Ag)-Total	mg/L	<0.00001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Sodium (Na)-Dissolved	mg/L	3.38
19	1	2022	RG_FRSCH2	RG_FRSCH2	Sodium (Na)-Total	mg/L	3.33
19	1	2022	RG_FRSCH2	RG_FRSCH2	Specific Conductivity	uS/cm	1527
19	1	2022	RG_FRSCH2	RG_FRSCH2	Strontium (Sr)-Dissolved	mg/L	0.196
19	1	2022	RG_FRSCH2	RG_FRSCH2	Strontium (Sr)-Total	mg/L	0.189
19	1	2022	RG_FRSCH2	RG_FRSCH2	Sulphate	mg/L	391
19	1	2022	RG_FRSCH2	RG_FRSCH2	Sulphur (S)-Dissolved	mg/L	133
19	1	2022	RG_FRSCH2	RG_FRSCH2	Sulphur (S)-Total	mg/L	130
19	1	2022	RG_FRSCH2	RG_FRSCH2	Temperature, Field	deg c	4.3
19	1	2022	RG_FRSCH2	RG_FRSCH2	Thallium (Tl)-Dissolved	mg/L	<0.00001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Thallium (Tl)-Total	mg/L	<0.00001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Tin (Sn)-Dissolved	mg/L	<0.0001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Tin (Sn)-Total	mg/L	<0.0001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Titanium (Ti)-Dissolved	mg/L	<0.0003
19	1	2022	RG_FRSCH2	RG_FRSCH2	Titanium (Ti)-Total	mg/L	<0.0003
19	1	2022	RG_FRSCH2	RG_FRSCH2	Total Dissolved Solids	mg/L	922
19	1	2022	RG_FRSCH2	RG_FRSCH2	Total Kjeldahl Nitrogen	mg/L	<0.05
19	1	2022	RG_FRSCH2	RG_FRSCH2	Total Organic Carbon	mg/L	<0.5
19	1	2022	RG_FRSCH2	RG_FRSCH2	Total Suspended Solids	mg/L	1.5
19	1	2022	RG_FRSCH2	RG_FRSCH2	Turbidity, Lab	NTU	<0.1
19	1	2022	RG_FRSCH2	RG_FRSCH2	Uranium (U)-Dissolved	mg/L	0.00426
19	1	2022	RG_FRSCH2	RG_FRSCH2	Uranium (U)-Total	mg/L	0.00437
19	1	2022	RG_FRSCH2	RG_FRSCH2	Vanadium (V)-Dissolved	mg/L	<0.0005
19	1	2022	RG_FRSCH2	RG_FRSCH2	Vanadium (V)-Total	mg/L	<0.0005
19	1	2022	RG_FRSCH2	RG_FRSCH2	Zinc (Zn)-Dissolved	mg/L	<0.001
19	1	2022	RG_FRSCH2	RG_FRSCH2	Zinc (Zn)-Total	mg/L	<0.003
16	2	2022	RG_FRSCH2	RG_FRSCH2	Acidity (as CaCO3)	mg/L	6.7
16	2	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	268
16	2	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Bicarbonate (as HCO3)	mg/L	326
16	2	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
16	2	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Carbonate (as CO3)	mg/L	<1
16	2	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	2	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Hydroxide (as OH)	mg/L	<1
16	2	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Total (as CaCO3)	mg/L	268
16	2	2022	RG_FRSCH2	RG_FRSCH2	Aluminum (Al)-Dissolved	mg/L	<0.001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Aluminum (Al)-Total	mg/L	<0.003
16	2	2022	RG_FRSCH2	RG_FRSCH2	Ammonia, Total (as N)	mg/L	0.0061
16	2	2022	RG_FRSCH2	RG_FRSCH2	Anion Sum	meq/L	16.4
16	2	2022	RG_FRSCH2	RG_FRSCH2	Antimony (Sb)-Dissolved	mg/L	<0.0001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Antimony (Sb)-Total	mg/L	<0.0001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Arsenic (As)-Dissolved	mg/L	<0.0001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Arsenic (As)-Total	mg/L	<0.0001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Barium (Ba)-Dissolved	mg/L	0.0831
16	2	2022	RG_FRSCH2	RG_FRSCH2	Barium (Ba)-Total	mg/L	0.0828
16	2	2022	RG_FRSCH2	RG_FRSCH2	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	2	2022	RG_FRSCH2	RG_FRSCH2	Beryllium (Be)-Total	mg/L	<0.00002
16	2	2022	RG_FRSCH2	RG_FRSCH2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	2	2022	RG_FRSCH2	RG_FRSCH2	Bismuth (Bi)-Total	mg/L	<0.00005
16	2	2022	RG_FRSCH2	RG_FRSCH2	Boron (B)-Dissolved	mg/L	0.011
16	2	2022	RG_FRSCH2	RG_FRSCH2	Boron (B)-Total	mg/L	0.013
16	2	2022	RG_FRSCH2	RG_FRSCH2	Bromide (Br)	mg/L	<0.25
16	2	2022	RG_FRSCH2	RG_FRSCH2	Cadmium (Cd)-Dissolved	mg/L	0.0000279
16	2	2022	RG_FRSCH2	RG_FRSCH2	Cadmium (Cd)-Total	mg/L	0.0000303
16	2	2022	RG_FRSCH2	RG_FRSCH2	Calcium (Ca)-Dissolved	mg/L	172
16	2	2022	RG_FRSCH2	RG_FRSCH2	Calcium (Ca)-Total	mg/L	177
16	2	2022	RG_FRSCH2	RG_FRSCH2	Cation - Anion Balance	%	96.3
16	2	2022	RG_FRSCH2	RG_FRSCH2	Cation Sum	meq/L	15.8
16	2	2022	RG_FRSCH2	RG_FRSCH2	Chloride (Cl)	mg/L	3.19
16	2	2022	RG_FRSCH2	RG_FRSCH2	Chromium (Cr)-Dissolved	mg/L	0.00013
16	2	2022	RG_FRSCH2	RG_FRSCH2	Chromium (Cr)-Total	mg/L	0.00011
16	2	2022	RG_FRSCH2	RG_FRSCH2	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Cobalt (Co)-Total	mg/L	<0.0001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Conductivity	uS/cm	1310
16	2	2022	RG_FRSCH2	RG_FRSCH2	Conductivity, Field	uS/cm	916
16	2	2022	RG_FRSCH2	RG_FRSCH2	Copper (Cu)-Dissolved	mg/L	<0.0002
16	2	2022	RG_FRSCH2	RG_FRSCH2	Copper (Cu)-Total	mg/L	<0.0005
16	2	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Organic Carbon	mg/L	<0.5
16	2	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Oxygen, Field	%	65.5
16	2	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Oxygen, Field	mg/L	8.41
16	2	2022	RG_FRSCH2	RG_FRSCH2	DMS ₂ SeO - Dimethylselenoxide	mg/L	<0.00001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Fluoride	mg/L	0.108
16	2	2022	RG_FRSCH2	RG_FRSCH2	Hardness - Dissolved (as CaCO3)	mg/L	781
16	2	2022	RG_FRSCH2	RG_FRSCH2	ion balance (APHA)	%	1.86
16	2	2022	RG_FRSCH2	RG_FRSCH2	Iron (Fe)-Dissolved	mg/L	<0.01
16	2	2022	RG_FRSCH2	RG_FRSCH2	Iron (Fe)-Total	mg/L	<0.01
16	2	2022	RG_FRSCH2	RG_FRSCH2	Lead (Pb)-Dissolved	mg/L	<0.00005
16	2	2022	RG_FRSCH2	RG_FRSCH2	Lead (Pb)-Total	mg/L	<0.00005
16	2	2022	RG_FRSCH2	RG_FRSCH2	Lithium (Li)-Dissolved	mg/L	0.0493
16	2	2022	RG_FRSCH2	RG_FRSCH2	Lithium (Li)-Total	mg/L	0.0539
16	2	2022	RG_FRSCH2	RG_FRSCH2	Magnesium (Mg)-Dissolved	mg/L	85.3
16	2	2022	RG_FRSCH2	RG_FRSCH2	Magnesium (Mg)-Total	mg/L	87.8
16	2	2022	RG_FRSCH2	RG_FRSCH2	Manganese (Mn)-Dissolved	mg/L	0.0003
16	2	2022	RG_FRSCH2	RG_FRSCH2	Manganese (Mn)-Total	mg/L	0.00036
16	2	2022	RG_FRSCH2	RG_FRSCH2	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	2	2022	RG_FRSCH2	RG_FRSCH2	Mercury (Hg)-Total	mg/L	<0.000005
16	2	2022	RG_FRSCH2	RG_FRSCH2	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
16	2	2022	RG_FRSCH2	RG_FRSCH2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Molybdenum (Mo)-Dissolved	mg/L	0.000711
16	2	2022	RG_FRSCH2	RG_FRSCH2	Molybdenum (Mo)-Total	mg/L	0.000778
16	2	2022	RG_FRSCH2	RG_FRSCH2	Nickel (Ni)-Dissolved	mg/L	<0.0005
16	2	2022	RG_FRSCH2	RG_FRSCH2	Nickel (Ni)-Total	mg/L	0.00062
16	2	2022	RG_FRSCH2	RG_FRSCH2	Nitrate (as N)	mg/L	30.1
16	2	2022	RG_FRSCH2	RG_FRSCH2	Nitrite (as N)	mg/L	<0.005
16	2	2022	RG_FRSCH2	RG_FRSCH2	ORP	mV	480
16	2	2022	RG_FRSCH2	RG_FRSCH2	Orthophosphate	mg/L	<0.001
16	2	2022	RG_FRSCH2	RG_FRSCH2	pH, Field	pH	7.35
16	2	2022	RG_FRSCH2	RG_FRSCH2	pH, Lab	pH	7.9
16	2	2022	RG_FRSCH2	RG_FRSCH2	Phosphorus (P)-Total	mg/L	0.0029
16	2	2022	RG_FRSCH2	RG_FRSCH2	Potassium (K)-Dissolved	mg/L	2.25
16	2	2022	RG_FRSCH2	RG_FRSCH2	Potassium (K)-Total	mg/L	2.22
16	2	2022	RG_FRSCH2	RG_FRSCH2	Se(IV) - Selenite	mg/L	0.000039
16	2	2022	RG_FRSCH2	RG_FRSCH2	Se(VI) - Selenate	mg/L	0.108
16	2	2022	RG_FRSCH2	RG_FRSCH2	SeCN - Selenocyanate	mg/L	<0.00001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Selenium (Se)-Dissolved	mg/L	0.11
16	2	2022	RG_FRSCH2	RG_FRSCH2	Selenium (Se)-Total	mg/L	0.109
16	2	2022	RG_FRSCH2	RG_FRSCH2	Selenium Unknown	mg/L	<0.00001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Selenosulphate	mg/L	<0.00001
16	2	2022	RG_FRSCH2	RG_FRSCH2	SeMe - Selenomethionine	mg/L	<0.00001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Silicon (Si)-Dissolved	mg/L	2.32
16	2	2022	RG_FRSCH2	RG_FRSCH2	Silicon (Si)-Total	mg/L	2.53

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	2	2022	RG_FRSCH2	RG_FRSCH2	Silver (Ag)-Dissolved	mg/L	<0.00001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Silver (Ag)-Total	mg/L	<0.00001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Sodium (Na)-Dissolved	mg/L	3.71
16	2	2022	RG_FRSCH2	RG_FRSCH2	Sodium (Na)-Total	mg/L	3.82
16	2	2022	RG_FRSCH2	RG_FRSCH2	Specific Conductivity	uS/cm	1500
16	2	2022	RG_FRSCH2	RG_FRSCH2	Strontium (Sr)-Dissolved	mg/L	0.208
16	2	2022	RG_FRSCH2	RG_FRSCH2	Strontium (Sr)-Total	mg/L	0.212
16	2	2022	RG_FRSCH2	RG_FRSCH2	Sulphate	mg/L	425
16	2	2022	RG_FRSCH2	RG_FRSCH2	Sulphur (S)-Dissolved	mg/L	128
16	2	2022	RG_FRSCH2	RG_FRSCH2	Sulphur (S)-Total	mg/L	156
16	2	2022	RG_FRSCH2	RG_FRSCH2	Temperature, Field	deg c	4.6
16	2	2022	RG_FRSCH2	RG_FRSCH2	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Thallium (Tl)-Total	mg/L	<0.00001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Tin (Sn)-Dissolved	mg/L	<0.0001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Tin (Sn)-Total	mg/L	<0.0001
16	2	2022	RG_FRSCH2	RG_FRSCH2	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	2	2022	RG_FRSCH2	RG_FRSCH2	Titanium (Ti)-Total	mg/L	<0.0003
16	2	2022	RG_FRSCH2	RG_FRSCH2	Total Dissolved Solids	mg/L	1100
16	2	2022	RG_FRSCH2	RG_FRSCH2	Total Kjeldahl Nitrogen	mg/L	<0.05
16	2	2022	RG_FRSCH2	RG_FRSCH2	Total Organic Carbon	mg/L	<0.5
16	2	2022	RG_FRSCH2	RG_FRSCH2	Total Suspended Solids	mg/L	2.7
16	2	2022	RG_FRSCH2	RG_FRSCH2	Turbidity, Lab	NTU	0.11
16	2	2022	RG_FRSCH2	RG_FRSCH2	Uranium (U)-Dissolved	mg/L	0.00442
16	2	2022	RG_FRSCH2	RG_FRSCH2	Uranium (U)-Total	mg/L	0.00422
16	2	2022	RG_FRSCH2	RG_FRSCH2	Vanadium (V)-Dissolved	mg/L	<0.0005
16	2	2022	RG_FRSCH2	RG_FRSCH2	Vanadium (V)-Total	mg/L	<0.0005
16	2	2022	RG_FRSCH2	RG_FRSCH2	Zinc (Zn)-Dissolved	mg/L	0.0035
16	2	2022	RG_FRSCH2	RG_FRSCH2	Zinc (Zn)-Total	mg/L	<0.003
16	3	2022	RG_FRSCH2	RG_FRSCH2	Acidity (as CaCO3)	mg/L	8.6
16	3	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	272
16	3	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Bicarbonate (as HCO3)	mg/L	332
16	3	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
16	3	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Carbonate (as CO3)	mg/L	<1
16	3	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	3	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Hydroxide (as OH)	mg/L	<1
16	3	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Total (as CaCO3)	mg/L	272
16	3	2022	RG_FRSCH2	RG_FRSCH2	Aluminum (Al)-Dissolved	mg/L	0.0019
16	3	2022	RG_FRSCH2	RG_FRSCH2	Aluminum (Al)-Total	mg/L	0.0555
16	3	2022	RG_FRSCH2	RG_FRSCH2	Ammonia, Total (as N)	mg/L	0.0314
16	3	2022	RG_FRSCH2	RG_FRSCH2	Anion Sum	meq/L	17.5
16	3	2022	RG_FRSCH2	RG_FRSCH2	Antimony (Sb)-Dissolved	mg/L	0.00013
16	3	2022	RG_FRSCH2	RG_FRSCH2	Antimony (Sb)-Total	mg/L	0.00016
16	3	2022	RG_FRSCH2	RG_FRSCH2	Arsenic (As)-Dissolved	mg/L	<0.0001
16	3	2022	RG_FRSCH2	RG_FRSCH2	Arsenic (As)-Total	mg/L	0.0001
16	3	2022	RG_FRSCH2	RG_FRSCH2	Barium (Ba)-Dissolved	mg/L	0.0904
16	3	2022	RG_FRSCH2	RG_FRSCH2	Barium (Ba)-Total	mg/L	0.0892
16	3	2022	RG_FRSCH2	RG_FRSCH2	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	3	2022	RG_FRSCH2	RG_FRSCH2	Beryllium (Be)-Total	mg/L	<0.00002
16	3	2022	RG_FRSCH2	RG_FRSCH2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	3	2022	RG_FRSCH2	RG_FRSCH2	Bismuth (Bi)-Total	mg/L	<0.00005
16	3	2022	RG_FRSCH2	RG_FRSCH2	Boron (B)-Dissolved	mg/L	0.012
16	3	2022	RG_FRSCH2	RG_FRSCH2	Boron (B)-Total	mg/L	0.012
16	3	2022	RG_FRSCH2	RG_FRSCH2	Bromide (Br)	mg/L	<0.25
16	3	2022	RG_FRSCH2	RG_FRSCH2	Cadmium (Cd)-Dissolved	mg/L	0.0000374
16	3	2022	RG_FRSCH2	RG_FRSCH2	Cadmium (Cd)-Total	mg/L	0.0000491
16	3	2022	RG_FRSCH2	RG_FRSCH2	Calcium (Ca)-Dissolved	mg/L	167
16	3	2022	RG_FRSCH2	RG_FRSCH2	Calcium (Ca)-Total	mg/L	180
16	3	2022	RG_FRSCH2	RG_FRSCH2	Cation - Anion Balance	%	89.1
16	3	2022	RG_FRSCH2	RG_FRSCH2	Cation Sum	meq/L	15.6
16	3	2022	RG_FRSCH2	RG_FRSCH2	Chloride (Cl)	mg/L	3.65
16	3	2022	RG_FRSCH2	RG_FRSCH2	Chromium (Cr)-Dissolved	mg/L	0.00012
16	3	2022	RG_FRSCH2	RG_FRSCH2	Chromium (Cr)-Total	mg/L	0.0002
16	3	2022	RG_FRSCH2	RG_FRSCH2	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	3	2022	RG_FRSCH2	RG_FRSCH2	Cobalt (Co)-Total	mg/L	0.00012
16	3	2022	RG_FRSCH2	RG_FRSCH2	Conductivity	uS/cm	1360
16	3	2022	RG_FRSCH2	RG_FRSCH2	Conductivity, Field	uS/cm	752
16	3	2022	RG_FRSCH2	RG_FRSCH2	Copper (Cu)-Dissolved	mg/L	<0.0002
16	3	2022	RG_FRSCH2	RG_FRSCH2	Copper (Cu)-Total	mg/L	<0.0005
16	3	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Organic Carbon	mg/L	<0.5
16	3	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Oxygen, Field	%	72.5
16	3	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Oxygen, Field	mg/L	9.66
16	3	2022	RG_FRSCH2	RG_FRSCH2	DMSeO - Dimethylselenoxide	mg/L	<0.00001
16	3	2022	RG_FRSCH2	RG_FRSCH2	Fluoride	mg/L	0.111
16	3	2022	RG_FRSCH2	RG_FRSCH2	Hardness - Dissolved (as CaCO3)	mg/L	769
16	3	2022	RG_FRSCH2	RG_FRSCH2	ion balance (APHA)	%	5.74
16	3	2022	RG_FRSCH2	RG_FRSCH2	Iron (Fe)-Dissolved	mg/L	<0.01
16	3	2022	RG_FRSCH2	RG_FRSCH2	Iron (Fe)-Total	mg/L	0.063
16	3	2022	RG_FRSCH2	RG_FRSCH2	Lead (Pb)-Dissolved	mg/L	<0.00005
16	3	2022	RG_FRSCH2	RG_FRSCH2	Lead (Pb)-Total	mg/L	0.000088
16	3	2022	RG_FRSCH2	RG_FRSCH2	Lithium (Li)-Dissolved	mg/L	0.0567
16	3	2022	RG_FRSCH2	RG_FRSCH2	Lithium (Li)-Total	mg/L	0.0606
16	3	2022	RG_FRSCH2	RG_FRSCH2	Magnesium (Mg)-Dissolved	mg/L	85.6
16	3	2022	RG_FRSCH2	RG_FRSCH2	Magnesium (Mg)-Total	mg/L	81
16	3	2022	RG_FRSCH2	RG_FRSCH2	Manganese (Mn)-Dissolved	mg/L	0.00168
16	3	2022	RG_FRSCH2	RG_FRSCH2	Manganese (Mn)-Total	mg/L	0.00276
16	3	2022	RG_FRSCH2	RG_FRSCH2	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	3	2022	RG_FRSCH2	RG_FRSCH2	Mercury (Hg)-Total	mg/L	0.0000055
16	3	2022	RG_FRSCH2	RG_FRSCH2	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
16	3	2022	RG_FRSCH2	RG_FRSCH2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
16	3	2022	RG_FRSCH2	RG_FRSCH2	Molybdenum (Mo)-Dissolved	mg/L	0.00157
16	3	2022	RG_FRSCH2	RG_FRSCH2	Molybdenum (Mo)-Total	mg/L	0.00164
16	3	2022	RG_FRSCH2	RG_FRSCH2	Nickel (Ni)-Dissolved	mg/L	0.00137
16	3	2022	RG_FRSCH2	RG_FRSCH2	Nickel (Ni)-Total	mg/L	0.00139
16	3	2022	RG_FRSCH2	RG_FRSCH2	Nitrate (as N)	mg/L	30.1
16	3	2022	RG_FRSCH2	RG_FRSCH2	Nitrite (as N)	mg/L	<0.005
16	3	2022	RG_FRSCH2	RG_FRSCH2	ORP	mV	488
16	3	2022	RG_FRSCH2	RG_FRSCH2	Orthophosphate	mg/L	0.0021
16	3	2022	RG_FRSCH2	RG_FRSCH2	pH, Field	pH	7.94
16	3	2022	RG_FRSCH2	RG_FRSCH2	pH, Lab	pH	7.9
16	3	2022	RG_FRSCH2	RG_FRSCH2	Phosphorus (P)-Total	mg/L	0.0026
16	3	2022	RG_FRSCH2	RG_FRSCH2	Potassium (K)-Dissolved	mg/L	2.39
16	3	2022	RG_FRSCH2	RG_FRSCH2	Potassium (K)-Total	mg/L	2.31
16	3	2022	RG_FRSCH2	RG_FRSCH2	Se(IV) - Selenite	mg/L	0.000062
16	3	2022	RG_FRSCH2	RG_FRSCH2	Se(VI) - Selenate	mg/L	0.095
16	3	2022	RG_FRSCH2	RG_FRSCH2	SeCN - Selenocyanate	mg/L	<0.00001
16	3	2022	RG_FRSCH2	RG_FRSCH2	Selenium (Se)-Dissolved	mg/L	0.1013
16	3	2022	RG_FRSCH2	RG_FRSCH2	Selenium (Se)-Total	mg/L	0.1024
16	3	2022	RG_FRSCH2	RG_FRSCH2	Selenium Unknown	mg/L	<0.00001
16	3	2022	RG_FRSCH2	RG_FRSCH2	Selenosulphate	mg/L	<0.00001
16	3	2022	RG_FRSCH2	RG_FRSCH2	SeMe - Selenomethionine	mg/L	<0.00001
16	3	2022	RG_FRSCH2	RG_FRSCH2	Silicon (Si)-Dissolved	mg/L	2.3

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	3	2022	RG_FRSCH2	RG_FRSCH2	Silicon (Si)-Total	mg/L	2.57
16	3	2022	RG_FRSCH2	RG_FRSCH2	Silver (Ag)-Dissolved	mg/L	<0.00001
16	3	2022	RG_FRSCH2	RG_FRSCH2	Silver (Ag)-Total	mg/L	<0.00001
16	3	2022	RG_FRSCH2	RG_FRSCH2	Sodium (Na)-Dissolved	mg/L	3.91
16	3	2022	RG_FRSCH2	RG_FRSCH2	Sodium (Na)-Total	mg/L	3.79
16	3	2022	RG_FRSCH2	RG_FRSCH2	Specific Conductivity	uS/cm	1286
16	3	2022	RG_FRSCH2	RG_FRSCH2	Strontium (Sr)-Dissolved	mg/L	0.207
16	3	2022	RG_FRSCH2	RG_FRSCH2	Strontium (Sr)-Total	mg/L	0.219
16	3	2022	RG_FRSCH2	RG_FRSCH2	Sulphate	mg/L	473
16	3	2022	RG_FRSCH2	RG_FRSCH2	Sulphur (S)-Dissolved	mg/L	163
16	3	2022	RG_FRSCH2	RG_FRSCH2	Sulphur (S)-Total	mg/L	174
16	3	2022	RG_FRSCH2	RG_FRSCH2	Temperature, Field	deg c	3.3
16	3	2022	RG_FRSCH2	RG_FRSCH2	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	3	2022	RG_FRSCH2	RG_FRSCH2	Thallium (Tl)-Total	mg/L	<0.00001
16	3	2022	RG_FRSCH2	RG_FRSCH2	Tin (Sn)-Dissolved	mg/L	<0.0001
16	3	2022	RG_FRSCH2	RG_FRSCH2	Tin (Sn)-Total	mg/L	<0.0001
16	3	2022	RG_FRSCH2	RG_FRSCH2	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	3	2022	RG_FRSCH2	RG_FRSCH2	Titanium (Ti)-Total	mg/L	0.0011
16	3	2022	RG_FRSCH2	RG_FRSCH2	Total Dissolved Solids	mg/L	1080
16	3	2022	RG_FRSCH2	RG_FRSCH2	Total Kjeldahl Nitrogen	mg/L	<0.05
16	3	2022	RG_FRSCH2	RG_FRSCH2	Total Organic Carbon	mg/L	0.52
16	3	2022	RG_FRSCH2	RG_FRSCH2	Total Suspended Solids	mg/L	3.4
16	3	2022	RG_FRSCH2	RG_FRSCH2	Turbidity, Lab	NTU	7.22
16	3	2022	RG_FRSCH2	RG_FRSCH2	Uranium (U)-Dissolved	mg/L	0.00475
16	3	2022	RG_FRSCH2	RG_FRSCH2	Uranium (U)-Total	mg/L	0.00475
16	3	2022	RG_FRSCH2	RG_FRSCH2	Vanadium (V)-Dissolved	mg/L	<0.0005
16	3	2022	RG_FRSCH2	RG_FRSCH2	Vanadium (V)-Total	mg/L	<0.0005
16	3	2022	RG_FRSCH2	RG_FRSCH2	Zinc (Zn)-Dissolved	mg/L	0.0015
16	3	2022	RG_FRSCH2	RG_FRSCH2	Zinc (Zn)-Total	mg/L	<0.003
28	6	2022	RG_FRSCH2	RG_FRSCH2	Acidity (as CaCO3)	mg/L	<2
28	6	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	187
28	6	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Bicarbonate (as HCO3)	mg/L	228
28	6	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
28	6	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Carbonate (as CO3)	mg/L	<1
28	6	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
28	6	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Hydroxide (as OH)	mg/L	<1
28	6	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Total (as CaCO3)	mg/L	187
28	6	2022	RG_FRSCH2	RG_FRSCH2	Aluminum (Al)-Dissolved	mg/L	0.0036
28	6	2022	RG_FRSCH2	RG_FRSCH2	Aluminum (Al)-Total	mg/L	0.11
28	6	2022	RG_FRSCH2	RG_FRSCH2	Ammonia, Total (as N)	mg/L	<0.005
28	6	2022	RG_FRSCH2	RG_FRSCH2	Anion Sum	meq/L	7.4
28	6	2022	RG_FRSCH2	RG_FRSCH2	Antimony (Sb)-Dissolved	mg/L	0.00016
28	6	2022	RG_FRSCH2	RG_FRSCH2	Antimony (Sb)-Total	mg/L	0.00017
28	6	2022	RG_FRSCH2	RG_FRSCH2	Arsenic (As)-Dissolved	mg/L	<0.0001
28	6	2022	RG_FRSCH2	RG_FRSCH2	Arsenic (As)-Total	mg/L	0.00021
28	6	2022	RG_FRSCH2	RG_FRSCH2	Barium (Ba)-Dissolved	mg/L	0.0369
28	6	2022	RG_FRSCH2	RG_FRSCH2	Barium (Ba)-Total	mg/L	0.0421
28	6	2022	RG_FRSCH2	RG_FRSCH2	Beryllium (Be)-Dissolved	mg/L	<0.00002
28	6	2022	RG_FRSCH2	RG_FRSCH2	Beryllium (Be)-Total	mg/L	<0.00002
28	6	2022	RG_FRSCH2	RG_FRSCH2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
28	6	2022	RG_FRSCH2	RG_FRSCH2	Bismuth (Bi)-Total	mg/L	<0.00005
28	6	2022	RG_FRSCH2	RG_FRSCH2	Boron (B)-Dissolved	mg/L	<0.01
28	6	2022	RG_FRSCH2	RG_FRSCH2	Boron (B)-Total	mg/L	<0.01
28	6	2022	RG_FRSCH2	RG_FRSCH2	Bromide (Br)	mg/L	<0.05
28	6	2022	RG_FRSCH2	RG_FRSCH2	Cadmium (Cd)-Dissolved	mg/L	0.0000638
28	6	2022	RG_FRSCH2	RG_FRSCH2	Cadmium (Cd)-Total	mg/L	0.000132
28	6	2022	RG_FRSCH2	RG_FRSCH2	Calcium (Ca)-Dissolved	mg/L	71.7
28	6	2022	RG_FRSCH2	RG_FRSCH2	Calcium (Ca)-Total	mg/L	77
28	6	2022	RG_FRSCH2	RG_FRSCH2	Cation - Anion Balance	%	86.2
28	6	2022	RG_FRSCH2	RG_FRSCH2	Cation Sum	meq/L	6.38
28	6	2022	RG_FRSCH2	RG_FRSCH2	Chloride (Cl)	mg/L	1.12
28	6	2022	RG_FRSCH2	RG_FRSCH2	Chromium (Cr)-Dissolved	mg/L	<0.0001
28	6	2022	RG_FRSCH2	RG_FRSCH2	Chromium (Cr)-Total	mg/L	0.00022
28	6	2022	RG_FRSCH2	RG_FRSCH2	Cobalt (Co)-Dissolved	mg/L	<0.0001
28	6	2022	RG_FRSCH2	RG_FRSCH2	Cobalt (Co)-Total	mg/L	0.00025
28	6	2022	RG_FRSCH2	RG_FRSCH2	Conductivity	uS/cm	612
28	6	2022	RG_FRSCH2	RG_FRSCH2	Conductivity, Field	uS/cm	481.4
28	6	2022	RG_FRSCH2	RG_FRSCH2	Copper (Cu)-Dissolved	mg/L	0.00064
28	6	2022	RG_FRSCH2	RG_FRSCH2	Copper (Cu)-Total	mg/L	0.00121
28	6	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Organic Carbon	mg/L	1.4
28	6	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Oxygen, Field	%	82.8
28	6	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Oxygen, Field	mg/L	9.99
28	6	2022	RG_FRSCH2	RG_FRSCH2	DMSeO - Dimethylselenoxide	mg/L	<0.00001
28	6	2022	RG_FRSCH2	RG_FRSCH2	Fluoride	mg/L	0.154
28	6	2022	RG_FRSCH2	RG_FRSCH2	Hardness - Dissolved (as CaCO3)	mg/L	314
28	6	2022	RG_FRSCH2	RG_FRSCH2	ion balance (APHA)	%	7.4
28	6	2022	RG_FRSCH2	RG_FRSCH2	Iron (Fe)-Dissolved	mg/L	<0.01
28	6	2022	RG_FRSCH2	RG_FRSCH2	Iron (Fe)-Total	mg/L	0.238
28	6	2022	RG_FRSCH2	RG_FRSCH2	Lead (Pb)-Dissolved	mg/L	<0.00005
28	6	2022	RG_FRSCH2	RG_FRSCH2	Lead (Pb)-Total	mg/L	0.000313
28	6	2022	RG_FRSCH2	RG_FRSCH2	Lithium (Li)-Dissolved	mg/L	0.0288
28	6	2022	RG_FRSCH2	RG_FRSCH2	Lithium (Li)-Total	mg/L	0.0277
28	6	2022	RG_FRSCH2	RG_FRSCH2	Magnesium (Mg)-Dissolved	mg/L	32.7
28	6	2022	RG_FRSCH2	RG_FRSCH2	Magnesium (Mg)-Total	mg/L	33.4
28	6	2022	RG_FRSCH2	RG_FRSCH2	Manganese (Mn)-Dissolved	mg/L	0.00109
28	6	2022	RG_FRSCH2	RG_FRSCH2	Manganese (Mn)-Total	mg/L	0.0239
28	6	2022	RG_FRSCH2	RG_FRSCH2	Mercury (Hg)-Dissolved	mg/L	<0.000005
28	6	2022	RG_FRSCH2	RG_FRSCH2	Mercury (Hg)-Total	mg/L	<0.000005
28	6	2022	RG_FRSCH2	RG_FRSCH2	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
28	6	2022	RG_FRSCH2	RG_FRSCH2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
28	6	2022	RG_FRSCH2	RG_FRSCH2	Molybdenum (Mo)-Dissolved	mg/L	0.00135
28	6	2022	RG_FRSCH2	RG_FRSCH2	Molybdenum (Mo)-Total	mg/L	0.0012
28	6	2022	RG_FRSCH2	RG_FRSCH2	Nickel (Ni)-Dissolved	mg/L	0.00264
28	6	2022	RG_FRSCH2	RG_FRSCH2	Nickel (Ni)-Total	mg/L	0.00372
28	6	2022	RG_FRSCH2	RG_FRSCH2	Nitrate (as N)	mg/L	10.8
28	6	2022	RG_FRSCH2	RG_FRSCH2	Nitrite (as N)	mg/L	0.0028
28	6	2022	RG_FRSCH2	RG_FRSCH2	ORP	mV	323
28	6	2022	RG_FRSCH2	RG_FRSCH2	Orthophosphate	mg/L	0.0014
28	6	2022	RG_FRSCH2	RG_FRSCH2	pH, Field	pH	7.62
28	6	2022	RG_FRSCH2	RG_FRSCH2	pH, Lab	pH	8.18
28	6	2022	RG_FRSCH2	RG_FRSCH2	Phosphorus (P)-Total	mg/L	0.0214
28	6	2022	RG_FRSCH2	RG_FRSCH2	Potassium (K)-Dissolved	mg/L	1.3
28	6	2022	RG_FRSCH2	RG_FRSCH2	Potassium (K)-Total	mg/L	1.3
28	6	2022	RG_FRSCH2	RG_FRSCH2	Se(IV) - Selenite	mg/L	0.00007
28	6	2022	RG_FRSCH2	RG_FRSCH2	Se(VI) - Selenate	mg/L	0.0376
28	6	2022	RG_FRSCH2	RG_FRSCH2	SeCN - Selenocyanate	mg/L	<0.00001
28	6	2022	RG_FRSCH2	RG_FRSCH2	Selenium (Se)-Dissolved	mg/L	0.0364
28	6	2022	RG_FRSCH2	RG_FRSCH2	Selenium (Se)-Total	mg/L	0.0347
28	6	2022	RG_FRSCH2	RG_FRSCH2	Selenium Unknown	mg/L	<0.00001
28	6	2022	RG_FRSCH2	RG_FRSCH2	Selenosulphate	mg/L	<0.00001
28	6	2022	RG_FRSCH2	RG_FRSCH2	SeMe - Selenomethionine	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
28	6	2022	RG_FRSCH2	RG_FRSCH2	Silicon (Si)-Dissolved	mg/L	1.69
28	6	2022	RG_FRSCH2	RG_FRSCH2	Silicon (Si)-Total	mg/L	1.76
28	6	2022	RG_FRSCH2	RG_FRSCH2	Silver (Ag)-Dissolved	mg/L	<0.00001
28	6	2022	RG_FRSCH2	RG_FRSCH2	Silver (Ag)-Total	mg/L	<0.00001
28	6	2022	RG_FRSCH2	RG_FRSCH2	Sodium (Na)-Dissolved	mg/L	1.85
28	6	2022	RG_FRSCH2	RG_FRSCH2	Sodium (Na)-Total	mg/L	1.97
28	6	2022	RG_FRSCH2	RG_FRSCH2	Specific Conductivity	uS/cm	730
28	6	2022	RG_FRSCH2	RG_FRSCH2	Strontium (Sr)-Dissolved	mg/L	0.0968
28	6	2022	RG_FRSCH2	RG_FRSCH2	Strontium (Sr)-Total	mg/L	0.102
28	6	2022	RG_FRSCH2	RG_FRSCH2	Sulphate	mg/L	137
28	6	2022	RG_FRSCH2	RG_FRSCH2	Sulphur (S)-Dissolved	mg/L	45
28	6	2022	RG_FRSCH2	RG_FRSCH2	Sulphur (S)-Total	mg/L	46.4
28	6	2022	RG_FRSCH2	RG_FRSCH2	Temperature, Field	deg c	7.2
28	6	2022	RG_FRSCH2	RG_FRSCH2	Thallium (Tl)-Dissolved	mg/L	<0.00001
28	6	2022	RG_FRSCH2	RG_FRSCH2	Thallium (Tl)-Total	mg/L	<0.00001
28	6	2022	RG_FRSCH2	RG_FRSCH2	Tin (Sn)-Dissolved	mg/L	<0.0001
28	6	2022	RG_FRSCH2	RG_FRSCH2	Tin (Sn)-Total	mg/L	<0.0001
28	6	2022	RG_FRSCH2	RG_FRSCH2	Titanium (Ti)-Dissolved	mg/L	<0.0003
28	6	2022	RG_FRSCH2	RG_FRSCH2	Titanium (Ti)-Total	mg/L	0.00118
28	6	2022	RG_FRSCH2	RG_FRSCH2	Total Dissolved Solids	mg/L	401
28	6	2022	RG_FRSCH2	RG_FRSCH2	Total Kjeldahl Nitrogen	mg/L	0.904
28	6	2022	RG_FRSCH2	RG_FRSCH2	Total Organic Carbon	mg/L	1.32
28	6	2022	RG_FRSCH2	RG_FRSCH2	Total Suspended Solids	mg/L	12.4
28	6	2022	RG_FRSCH2	RG_FRSCH2	Turbidity, Lab	NTU	3.65
28	6	2022	RG_FRSCH2	RG_FRSCH2	Uranium (U)-Dissolved	mg/L	0.00205
28	6	2022	RG_FRSCH2	RG_FRSCH2	Uranium (U)-Total	mg/L	0.00213
28	6	2022	RG_FRSCH2	RG_FRSCH2	Vanadium (V)-Dissolved	mg/L	<0.0005
28	6	2022	RG_FRSCH2	RG_FRSCH2	Vanadium (V)-Total	mg/L	0.00069
28	6	2022	RG_FRSCH2	RG_FRSCH2	Zinc (Zn)-Dissolved	mg/L	0.0027
28	6	2022	RG_FRSCH2	RG_FRSCH2	Zinc (Zn)-Total	mg/L	0.0058
14	9	2022	RG_FRSCH2	RG_FRSCH2	Acidity (as CaCO3)	mg/L	4.7
14	9	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	234
14	9	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Bicarbonate (as HCO3)	mg/L	285
14	9	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
14	9	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Carbonate (as CO3)	mg/L	<1
14	9	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	9	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Hydroxide (as OH)	mg/L	<1
14	9	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Total (as CaCO3)	mg/L	234
14	9	2022	RG_FRSCH2	RG_FRSCH2	Aluminum (Al)-Dissolved	mg/L	<0.001
14	9	2022	RG_FRSCH2	RG_FRSCH2	Aluminum (Al)-Total	mg/L	0.0069
14	9	2022	RG_FRSCH2	RG_FRSCH2	Ammonia, Total (as N)	mg/L	0.0053
14	9	2022	RG_FRSCH2	RG_FRSCH2	Anion Sum	meq/L	13.9
14	9	2022	RG_FRSCH2	RG_FRSCH2	Antimony (Sb)-Dissolved	mg/L	0.00012
14	9	2022	RG_FRSCH2	RG_FRSCH2	Antimony (Sb)-Total	mg/L	0.00022
14	9	2022	RG_FRSCH2	RG_FRSCH2	Arsenic (As)-Dissolved	mg/L	<0.0001
14	9	2022	RG_FRSCH2	RG_FRSCH2	Arsenic (As)-Total	mg/L	0.00014
14	9	2022	RG_FRSCH2	RG_FRSCH2	Barium (Ba)-Dissolved	mg/L	0.0699
14	9	2022	RG_FRSCH2	RG_FRSCH2	Barium (Ba)-Total	mg/L	0.0826
14	9	2022	RG_FRSCH2	RG_FRSCH2	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	9	2022	RG_FRSCH2	RG_FRSCH2	Beryllium (Be)-Total	mg/L	<0.00002
14	9	2022	RG_FRSCH2	RG_FRSCH2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	9	2022	RG_FRSCH2	RG_FRSCH2	Bismuth (Bi)-Total	mg/L	<0.00005
14	9	2022	RG_FRSCH2	RG_FRSCH2	Boron (B)-Dissolved	mg/L	0.011
14	9	2022	RG_FRSCH2	RG_FRSCH2	Boron (B)-Total	mg/L	0.014
14	9	2022	RG_FRSCH2	RG_FRSCH2	Bromide (Br)	mg/L	<0.25
14	9	2022	RG_FRSCH2	RG_FRSCH2	Cadmium (Cd)-Dissolved	mg/L	0.00004
14	9	2022	RG_FRSCH2	RG_FRSCH2	Cadmium (Cd)-Total	mg/L	0.00005
14	9	2022	RG_FRSCH2	RG_FRSCH2	Calcium (Ca)-Dissolved	mg/L	130
14	9	2022	RG_FRSCH2	RG_FRSCH2	Calcium (Ca)-Total	mg/L	148
14	9	2022	RG_FRSCH2	RG_FRSCH2	Cation - Anion Balance	%	86.3
14	9	2022	RG_FRSCH2	RG_FRSCH2	Cation Sum	meq/L	12
14	9	2022	RG_FRSCH2	RG_FRSCH2	Chloride (Cl)	mg/L	4.24
14	9	2022	RG_FRSCH2	RG_FRSCH2	Chromium (Cr)-Dissolved	mg/L	0.0001
14	9	2022	RG_FRSCH2	RG_FRSCH2	Chromium (Cr)-Total	mg/L	0.00015
14	9	2022	RG_FRSCH2	RG_FRSCH2	Cobalt (Co)-Dissolved	mg/L	<0.0001
14	9	2022	RG_FRSCH2	RG_FRSCH2	Cobalt (Co)-Total	mg/L	<0.0001
14	9	2022	RG_FRSCH2	RG_FRSCH2	Conductivity	uS/cm	1060
14	9	2022	RG_FRSCH2	RG_FRSCH2	Conductivity, Field	uS/cm	753
14	9	2022	RG_FRSCH2	RG_FRSCH2	Copper (Cu)-Dissolved	mg/L	<0.0002
14	9	2022	RG_FRSCH2	RG_FRSCH2	Copper (Cu)-Total	mg/L	<0.0005
14	9	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Organic Carbon	mg/L	<0.5
14	9	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Oxygen, Field	%	75.5
14	9	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Oxygen, Field	mg/L	8.56666667
14	9	2022	RG_FRSCH2	RG_FRSCH2	DMSeO - Dimethylselenoxide	mg/L	<0.00001
14	9	2022	RG_FRSCH2	RG_FRSCH2	Fluoride	mg/L	0.159
14	9	2022	RG_FRSCH2	RG_FRSCH2	Hardness - Dissolved (as CaCO3)	mg/L	594
14	9	2022	RG_FRSCH2	RG_FRSCH2	ion balance (APHA)	%	7.34
14	9	2022	RG_FRSCH2	RG_FRSCH2	Iron (Fe)-Dissolved	mg/L	<0.01
14	9	2022	RG_FRSCH2	RG_FRSCH2	Iron (Fe)-Total	mg/L	<0.01
14	9	2022	RG_FRSCH2	RG_FRSCH2	Lead (Pb)-Dissolved	mg/L	<0.00005
14	9	2022	RG_FRSCH2	RG_FRSCH2	Lead (Pb)-Total	mg/L	<0.00005
14	9	2022	RG_FRSCH2	RG_FRSCH2	Lithium (Li)-Dissolved	mg/L	0.057
14	9	2022	RG_FRSCH2	RG_FRSCH2	Lithium (Li)-Total	mg/L	0.0606
14	9	2022	RG_FRSCH2	RG_FRSCH2	Magnesium (Mg)-Dissolved	mg/L	65.3
14	9	2022	RG_FRSCH2	RG_FRSCH2	Magnesium (Mg)-Total	mg/L	75
14	9	2022	RG_FRSCH2	RG_FRSCH2	Manganese (Mn)-Dissolved	mg/L	0.00062
14	9	2022	RG_FRSCH2	RG_FRSCH2	Manganese (Mn)-Total	mg/L	0.00165
14	9	2022	RG_FRSCH2	RG_FRSCH2	Mercury (Hg)-Dissolved	mg/L	<0.000005
14	9	2022	RG_FRSCH2	RG_FRSCH2	Mercury (Hg)-Total	mg/L	<0.000005
14	9	2022	RG_FRSCH2	RG_FRSCH2	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
14	9	2022	RG_FRSCH2	RG_FRSCH2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
14	9	2022	RG_FRSCH2	RG_FRSCH2	Molybdenum (Mo)-Dissolved	mg/L	0.00136
14	9	2022	RG_FRSCH2	RG_FRSCH2	Molybdenum (Mo)-Total	mg/L	0.00254
14	9	2022	RG_FRSCH2	RG_FRSCH2	Nickel (Ni)-Dissolved	mg/L	0.00123
14	9	2022	RG_FRSCH2	RG_FRSCH2	Nickel (Ni)-Total	mg/L	0.00254
14	9	2022	RG_FRSCH2	RG_FRSCH2	Nitrate (as N)	mg/L	21.2
14	9	2022	RG_FRSCH2	RG_FRSCH2	Nitrite (as N)	mg/L	0.0072
14	9	2022	RG_FRSCH2	RG_FRSCH2	ORP	mV	279
14	9	2022	RG_FRSCH2	RG_FRSCH2	Orthophosphate	mg/L	<0.001
14	9	2022	RG_FRSCH2	RG_FRSCH2	pH, Field	pH	8.12666667
14	9	2022	RG_FRSCH2	RG_FRSCH2	pH, Lab	pH	8.03
14	9	2022	RG_FRSCH2	RG_FRSCH2	Phosphorus (P)-Total	mg/L	0.0031
14	9	2022	RG_FRSCH2	RG_FRSCH2	Potassium (K)-Dissolved	mg/L	1.95
14	9	2022	RG_FRSCH2	RG_FRSCH2	Potassium (K)-Total	mg/L	2.26
14	9	2022	RG_FRSCH2	RG_FRSCH2	Se(IV) - Selenite	mg/L	0.000084
14	9	2022	RG_FRSCH2	RG_FRSCH2	Se(VI) - Selenate	mg/L	0.0683
14	9	2022	RG_FRSCH2	RG_FRSCH2	SeCN - Selenocyanate	mg/L	<0.00001
14	9	2022	RG_FRSCH2	RG_FRSCH2	Selenium (Se)-Dissolved	mg/L	0.0815
14	9	2022	RG_FRSCH2	RG_FRSCH2	Selenium (Se)-Total	mg/L	0.083033333
14	9	2022	RG_FRSCH2	RG_FRSCH2	Selenium Unknown	mg/L	<0.00001
14	9	2022	RG_FRSCH2	RG_FRSCH2	Selenosulphate	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	9	2022	RG_FRSCH2	RG_FRSCH2	SeMe - Selenomethionine	mg/L	<0.00001
14	9	2022	RG_FRSCH2	RG_FRSCH2	Silicon (Si)-Dissolved	mg/L	2.3
14	9	2022	RG_FRSCH2	RG_FRSCH2	Silicon (Si)-Total	mg/L	2.57
14	9	2022	RG_FRSCH2	RG_FRSCH2	Silver (Ag)-Dissolved	mg/L	<0.00001
14	9	2022	RG_FRSCH2	RG_FRSCH2	Silver (Ag)-Total	mg/L	<0.00001
14	9	2022	RG_FRSCH2	RG_FRSCH2	Sodium (Na)-Dissolved	mg/L	3.4
14	9	2022	RG_FRSCH2	RG_FRSCH2	Sodium (Na)-Total	mg/L	3.74
14	9	2022	RG_FRSCH2	RG_FRSCH2	Specific Conductivity	uS/cm	1093
14	9	2022	RG_FRSCH2	RG_FRSCH2	Strontium (Sr)-Dissolved	mg/L	0.172
14	9	2022	RG_FRSCH2	RG_FRSCH2	Strontium (Sr)-Total	mg/L	0.191
14	9	2022	RG_FRSCH2	RG_FRSCH2	Sulphate	mg/L	364
14	9	2022	RG_FRSCH2	RG_FRSCH2	Sulphur (S)-Dissolved	mg/L	117
14	9	2022	RG_FRSCH2	RG_FRSCH2	Sulphur (S)-Total	mg/L	145
14	9	2022	RG_FRSCH2	RG_FRSCH2	Temperature, Field	deg c	9.533333333
14	9	2022	RG_FRSCH2	RG_FRSCH2	Thallium (Tl)-Dissolved	mg/L	<0.00001
14	9	2022	RG_FRSCH2	RG_FRSCH2	Thallium (Tl)-Total	mg/L	<0.00001
14	9	2022	RG_FRSCH2	RG_FRSCH2	Tin (Sn)-Dissolved	mg/L	<0.0001
14	9	2022	RG_FRSCH2	RG_FRSCH2	Tin (Sn)-Total	mg/L	<0.0001
14	9	2022	RG_FRSCH2	RG_FRSCH2	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	9	2022	RG_FRSCH2	RG_FRSCH2	Titanium (Ti)-Total	mg/L	<0.0003
14	9	2022	RG_FRSCH2	RG_FRSCH2	Total Dissolved Solids	mg/L	811
14	9	2022	RG_FRSCH2	RG_FRSCH2	Total Kjeldahl Nitrogen	mg/L	2.32
14	9	2022	RG_FRSCH2	RG_FRSCH2	Total Organic Carbon	mg/L	<0.5
14	9	2022	RG_FRSCH2	RG_FRSCH2	Total Suspended Solids	mg/L	2
14	9	2022	RG_FRSCH2	RG_FRSCH2	Turbidity, Lab	NTU	0.16
14	9	2022	RG_FRSCH2	RG_FRSCH2	Uranium (U)-Dissolved	mg/L	0.00345
14	9	2022	RG_FRSCH2	RG_FRSCH2	Uranium (U)-Total	mg/L	0.00412
14	9	2022	RG_FRSCH2	RG_FRSCH2	Vanadium (V)-Dissolved	mg/L	<0.0005
14	9	2022	RG_FRSCH2	RG_FRSCH2	Vanadium (V)-Total	mg/L	<0.0005
14	9	2022	RG_FRSCH2	RG_FRSCH2	Zinc (Zn)-Dissolved	mg/L	<0.001
14	9	2022	RG_FRSCH2	RG_FRSCH2	Zinc (Zn)-Total	mg/L	<0.003
7	12	2022	RG_FRSCH2	RG_FRSCH2	Acidity (as CaCO3)	mg/L	4.4
7	12	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	242
7	12	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Bicarbonate (as HCO3)	mg/L	295
7	12	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	12	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Carbonate (as CO3)	mg/L	<1
7	12	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	12	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Hydroxide (as OH)	mg/L	<1
7	12	2022	RG_FRSCH2	RG_FRSCH2	Alkalinity, Total (as CaCO3)	mg/L	242
7	12	2022	RG_FRSCH2	RG_FRSCH2	Aluminum (Al)-Dissolved	mg/L	<0.001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Aluminum (Al)-Total	mg/L	0.0034
7	12	2022	RG_FRSCH2	RG_FRSCH2	Ammonia, Total (as N)	mg/L	<0.005
7	12	2022	RG_FRSCH2	RG_FRSCH2	Anion Sum	meq/L	15
7	12	2022	RG_FRSCH2	RG_FRSCH2	Antimony (Sb)-Dissolved	mg/L	<0.0001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Antimony (Sb)-Total	mg/L	<0.0001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Arsenic (As)-Dissolved	mg/L	<0.0001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Arsenic (As)-Total	mg/L	0.0001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Barium (Ba)-Dissolved	mg/L	0.0769
7	12	2022	RG_FRSCH2	RG_FRSCH2	Barium (Ba)-Total	mg/L	0.0822
7	12	2022	RG_FRSCH2	RG_FRSCH2	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	12	2022	RG_FRSCH2	RG_FRSCH2	Beryllium (Be)-Total	mg/L	<0.00002
7	12	2022	RG_FRSCH2	RG_FRSCH2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	12	2022	RG_FRSCH2	RG_FRSCH2	Bismuth (Bi)-Total	mg/L	<0.00005
7	12	2022	RG_FRSCH2	RG_FRSCH2	Boron (B)-Dissolved	mg/L	0.01
7	12	2022	RG_FRSCH2	RG_FRSCH2	Boron (B)-Total	mg/L	0.012
7	12	2022	RG_FRSCH2	RG_FRSCH2	Bromide (Br)	mg/L	<0.25
7	12	2022	RG_FRSCH2	RG_FRSCH2	Cadmium (Cd)-Dissolved	mg/L	0.00002
7	12	2022	RG_FRSCH2	RG_FRSCH2	Cadmium (Cd)-Total	mg/L	0.0000322
7	12	2022	RG_FRSCH2	RG_FRSCH2	Calcium (Ca)-Dissolved	mg/L	150
7	12	2022	RG_FRSCH2	RG_FRSCH2	Calcium (Ca)-Total	mg/L	176
7	12	2022	RG_FRSCH2	RG_FRSCH2	Cation - Anion Balance	%	85.3
7	12	2022	RG_FRSCH2	RG_FRSCH2	Cation Sum	meq/L	12.8
7	12	2022	RG_FRSCH2	RG_FRSCH2	Chloride (Cl)	mg/L	7.59
7	12	2022	RG_FRSCH2	RG_FRSCH2	Chromium (Cr)-Dissolved	mg/L	<0.0001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Chromium (Cr)-Total	mg/L	0.00017
7	12	2022	RG_FRSCH2	RG_FRSCH2	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Cobalt (Co)-Total	mg/L	<0.0001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Conductivity	uS/cm	1200
7	12	2022	RG_FRSCH2	RG_FRSCH2	Conductivity, Field	uS/cm	877
7	12	2022	RG_FRSCH2	RG_FRSCH2	Copper (Cu)-Dissolved	mg/L	<0.0002
7	12	2022	RG_FRSCH2	RG_FRSCH2	Copper (Cu)-Total	mg/L	<0.0005
7	12	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Organic Carbon	mg/L	<0.5
7	12	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Oxygen, Field	%	61.1
7	12	2022	RG_FRSCH2	RG_FRSCH2	Dissolved Oxygen, Field	mg/L	7.7
7	12	2022	RG_FRSCH2	RG_FRSCH2	DMSeO - Dimethylselenoxide	mg/L	<0.00001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Fluoride	mg/L	0.138
7	12	2022	RG_FRSCH2	RG_FRSCH2	Hardness - Dissolved (as CaCO3)	mg/L	632
7	12	2022	RG_FRSCH2	RG_FRSCH2	ion balance (APHA)	%	-7.91
7	12	2022	RG_FRSCH2	RG_FRSCH2	Iron (Fe)-Dissolved	mg/L	<0.01
7	12	2022	RG_FRSCH2	RG_FRSCH2	Iron (Fe)-Total	mg/L	<0.01
7	12	2022	RG_FRSCH2	RG_FRSCH2	Lead (Pb)-Dissolved	mg/L	<0.00005
7	12	2022	RG_FRSCH2	RG_FRSCH2	Lead (Pb)-Total	mg/L	<0.00005
7	12	2022	RG_FRSCH2	RG_FRSCH2	Lithium (Li)-Dissolved	mg/L	0.051
7	12	2022	RG_FRSCH2	RG_FRSCH2	Lithium (Li)-Total	mg/L	0.055
7	12	2022	RG_FRSCH2	RG_FRSCH2	Magnesium (Mg)-Dissolved	mg/L	62.5
7	12	2022	RG_FRSCH2	RG_FRSCH2	Magnesium (Mg)-Total	mg/L	82.2
7	12	2022	RG_FRSCH2	RG_FRSCH2	Manganese (Mn)-Dissolved	mg/L	0.00011
7	12	2022	RG_FRSCH2	RG_FRSCH2	Manganese (Mn)-Total	mg/L	0.00021
7	12	2022	RG_FRSCH2	RG_FRSCH2	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	12	2022	RG_FRSCH2	RG_FRSCH2	Mercury (Hg)-Total	mg/L	<0.000005
7	12	2022	RG_FRSCH2	RG_FRSCH2	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
7	12	2022	RG_FRSCH2	RG_FRSCH2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Molybdenum (Mo)-Dissolved	mg/L	0.000713
7	12	2022	RG_FRSCH2	RG_FRSCH2	Molybdenum (Mo)-Total	mg/L	0.000795
7	12	2022	RG_FRSCH2	RG_FRSCH2	Nickel (Ni)-Dissolved	mg/L	<0.0005
7	12	2022	RG_FRSCH2	RG_FRSCH2	Nickel (Ni)-Total	mg/L	<0.0005
7	12	2022	RG_FRSCH2	RG_FRSCH2	Nitrate (as N)	mg/L	26.2
7	12	2022	RG_FRSCH2	RG_FRSCH2	Nitrite (as N)	mg/L	<0.005
7	12	2022	RG_FRSCH2	RG_FRSCH2	ORP	mV	426
7	12	2022	RG_FRSCH2	RG_FRSCH2	Orthophosphate	mg/L	<0.001
7	12	2022	RG_FRSCH2	RG_FRSCH2	pH, Field	pH	7.22
7	12	2022	RG_FRSCH2	RG_FRSCH2	pH, Lab	pH	7.93
7	12	2022	RG_FRSCH2	RG_FRSCH2	Phosphorus (P)-Total	mg/L	0.0227
7	12	2022	RG_FRSCH2	RG_FRSCH2	Potassium (K)-Dissolved	mg/L	1.91
7	12	2022	RG_FRSCH2	RG_FRSCH2	Potassium (K)-Total	mg/L	2.14
7	12	2022	RG_FRSCH2	RG_FRSCH2	Se(IV) - Selenite	mg/L	<0.00002
7	12	2022	RG_FRSCH2	RG_FRSCH2	Se(VI) - Selenate	mg/L	0.0882
7	12	2022	RG_FRSCH2	RG_FRSCH2	SeCN - Selenocyanate	mg/L	<0.00001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Selenium (Se)-Dissolved	mg/L	0.09995
7	12	2022	RG_FRSCH2	RG_FRSCH2	Selenium (Se)-Total	mg/L	0.0961
7	12	2022	RG_FRSCH2	RG_FRSCH2	Selenium Unknown	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	12	2022	RG_FRSCH2	RG_FRSCH2	Selenosulphate	mg/L	<0.00001
7	12	2022	RG_FRSCH2	RG_FRSCH2	SeMe - Selenomethionine	mg/L	<0.00001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Silicon (Si)-Dissolved	mg/L	2.48
7	12	2022	RG_FRSCH2	RG_FRSCH2	Silicon (Si)-Total	mg/L	2.55
7	12	2022	RG_FRSCH2	RG_FRSCH2	Silver (Ag)-Dissolved	mg/L	<0.00001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Silver (Ag)-Total	mg/L	<0.00001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Sodium (Na)-Dissolved	mg/L	3.53
7	12	2022	RG_FRSCH2	RG_FRSCH2	Sodium (Na)-Total	mg/L	4.38
7	12	2022	RG_FRSCH2	RG_FRSCH2	Specific Conductivity	uS/cm	1405
7	12	2022	RG_FRSCH2	RG_FRSCH2	Strontium (Sr)-Dissolved	mg/L	0.184
7	12	2022	RG_FRSCH2	RG_FRSCH2	Strontium (Sr)-Total	mg/L	0.2
7	12	2022	RG_FRSCH2	RG_FRSCH2	Sulphate	mg/L	387
7	12	2022	RG_FRSCH2	RG_FRSCH2	Sulphur (S)-Dissolved	mg/L	136
7	12	2022	RG_FRSCH2	RG_FRSCH2	Sulphur (S)-Total	mg/L	138
7	12	2022	RG_FRSCH2	RG_FRSCH2	Temperature, Field	deg c	5.3
7	12	2022	RG_FRSCH2	RG_FRSCH2	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Thallium (Tl)-Total	mg/L	<0.00001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Tin (Sn)-Dissolved	mg/L	<0.0001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Tin (Sn)-Total	mg/L	<0.0001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	12	2022	RG_FRSCH2	RG_FRSCH2	Titanium (Ti)-Total	mg/L	<0.0003
7	12	2022	RG_FRSCH2	RG_FRSCH2	Total Dissolved Solids	mg/L	903
7	12	2022	RG_FRSCH2	RG_FRSCH2	Total Kjeldahl Nitrogen	mg/L	2.17
7	12	2022	RG_FRSCH2	RG_FRSCH2	Total Organic Carbon	mg/L	<0.5
7	12	2022	RG_FRSCH2	RG_FRSCH2	Total Suspended Solids	mg/L	1.4
7	12	2022	RG_FRSCH2	RG_FRSCH2	Turbidity, Lab	NTU	0.12
7	12	2022	RG_FRSCH2	RG_FRSCH2	Uranium (U)-Dissolved	mg/L	0.0041
7	12	2022	RG_FRSCH2	RG_FRSCH2	Uranium (U)-Total	mg/L	0.00412
7	12	2022	RG_FRSCH2	RG_FRSCH2	Vanadium (V)-Dissolved	mg/L	<0.0005
7	12	2022	RG_FRSCH2	RG_FRSCH2	Vanadium (V)-Total	mg/L	<0.0005
7	12	2022	RG_FRSCH2	RG_FRSCH2	Zinc (Zn)-Dissolved	mg/L	<0.001
7	12	2022	RG_FRSCH2	RG_FRSCH2	Zinc (Zn)-Total	mg/L	<0.003
21	1	2022	RG_FRGHSC	RG_FRGHSC	Acidity (as CaCO3)	mg/L	5.4
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	8.3
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	276
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	276
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	<0.001
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	0.0033
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	0.0077
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	<0.0001
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	<0.0001
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	<0.0001
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.0917
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.0951
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	0.018
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	0.019
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.25
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.0000485
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.0000465
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	179
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	186
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	2.6
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	0.00013
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00012
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	<0.0001
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	1290
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	0.00065
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	<0.5
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	%	78.3
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	10
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.12
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	773
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	<0.01
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	0.000054
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	<0.00005
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0677
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0715
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	79.2
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	83.9
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00019
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.00039
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.0000005
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.000729
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.000735
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	<0.0005
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	<0.0005
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	31
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	<0.005
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	448
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP, Field	mV	226.1
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	0.0019
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	7.61
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	7.88
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.005
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	2.64
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	2.79
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.132
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.119
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	2.34
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	2.59
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	3.79
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	4.01
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.195
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.201
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	415
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	4.9
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	<0.0003
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	924
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	0.351
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	<0.5
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	<1
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	0.16
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.00438
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00473
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	<0.0005
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	0.0021
17	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	<0.003
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	4.3
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	282
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as HCO3)	mg/L	344
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CO3)	mg/L	<1
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as OH)	mg/L	<1
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	282
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	<0.001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	<0.003
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	<0.005
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Anion Sum	meq/L	16.5
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	<0.0001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	<0.0001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	<0.0001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.105
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.106
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	0.017
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	0.018
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.25
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.0000373
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.000044
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	162
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	173
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cation - Anion Difference	%	6.11
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cation - Anion Ratio	%	88.5
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cation Sum	meq/L	14.6
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	2.21
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	0.00016
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00017
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	<0.0001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	1290
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity, Field	uS/cm	998
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	<0.0002
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	<0.5
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	%	81.1
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	10.25
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	DMSeO - Dimethylselenoxide	mg/L	<0.00001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.132
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	721
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	<0.01
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	<0.00005
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0628
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0651
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	76.9
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	78.7
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00022
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.00036
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.000005
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.000662
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.000693
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	<0.0005
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	<0.0005
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	31.8
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	<0.005
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	350
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	0.0021
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	7.79
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.1
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.0033
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	2.68
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	2.7
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Se(IV) - Selenite	mg/L	0.000082
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Se(VI) - Selenate	mg/L	0.101
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	SeCN - Selenocyanate	mg/L	<0.00001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.122
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.1165
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium Unknown	mg/L	<0.00001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenosulphate	mg/L	<0.00001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	SeMe - Selenomethionine	mg/L	<0.00001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	2.48
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	2.28
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	3.91
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	3.95
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Specific Conductivity	uS/cm	1605
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.187
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.189
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	408
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphur (S)-Dissolved	mg/L	142
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphur (S)-Total	mg/L	138
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	5.2
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	<0.0003
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	1000
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	<0.05
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	<0.5
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	<1
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	<0.1
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.00498
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00511
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	<0.0005
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	<0.001
20	1	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	<0.003
10	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity, Field	uS/cm	153.7
10	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	%	84.5
10	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP, Field	mV	196.8
10	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	8.54
10	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	0.7
10	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Field	NTU	3.13
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	4.3
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	278
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	278
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	0.0013
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	0.0033
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	<0.005
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	<0.0001
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	<0.0001
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	<0.0001
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.0951
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.0976
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	0.016
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	0.015
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromine (Br)	mg/L	<0.25
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.0000456
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.0000441
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	188
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	177
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	3.28
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	0.00015
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00015
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	<0.0001
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	1280
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	<0.0002
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	2.02
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	%	80.9
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	10.66
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.134
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	812
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	<0.01
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	<0.00005
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0655
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0611
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	83.3
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	84.3
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00029
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.00046
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.0000005
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.000746
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.000701
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	<0.0005
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	<0.0005
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	32.8
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	<0.005
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	458
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP, Field	mV	199.6
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	0.0019
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	6.96
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.26
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.0033
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	2.48
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	2.44
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.117
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.112
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	2.51
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	2.4
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	4.14
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	4.13
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.226
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.213
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	412
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	3.7
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	0.00011
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	<0.0003
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	1010
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	<0.05
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	<0.5
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	1.3
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Field	NTU	0.29
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	<0.1
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.00486

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00508
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	<0.0005
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	<0.001
14	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	<0.003
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	3.1
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	270
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as HCO3)	mg/L	330
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CO3)	mg/L	<1
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as OH)	mg/L	<1
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	270
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	<0.001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	0.0032
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	0.0451
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Anion Sum	meq/L	16.7
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	<0.0001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	<0.0001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	0.0001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	<0.0001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.0904
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.0978
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	0.013
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	0.016
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.25
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.0000417
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.0000402
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	172
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	182
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cation - Anion Balance	%	92.8
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cation Sum	meq/L	15.5
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	2.96
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	0.00014
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00026
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	<0.0001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	1330
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity, Field	uS/cm	895
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	<0.0002
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	<0.5
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	%	80.6
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	10.64
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	DMS ₂ O - Dimethylselenoxide	mg/L	<0.00001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.113
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	764
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ion balance (APHA)	%	3.73
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	<0.01
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	<0.00005
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0564
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0646
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	81.2
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	87.8
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00025
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.00044
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.0000005
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.000612
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.000822
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	<0.0005
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	<0.0005
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	33.6
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	<0.005
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	361
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	<0.001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	7.64
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.06
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.003
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	2.39
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	2.55
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Se(IV) - Selenite	mg/L	0.000078
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Se(VI) - Selenate	mg/L	0.0952
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	SeCN - Selenocyanate	mg/L	0.00002
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.1125
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.112
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium Unknown	mg/L	<0.00001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenosulphate	mg/L	<0.00001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	SeMe - Selenomethionine	mg/L	<0.00001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	2.28
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	2.53
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	3.86
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	4.25
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Specific Conductivity	uS/cm	1520
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.197
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.208
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	422
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphur (S)-Dissolved	mg/L	126
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphur (S)-Total	mg/L	153
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	3.6
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	<0.0003
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	980
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	<0.05
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	<0.5
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	<1
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	<0.1

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.00453
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00451
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	<0.0005
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	<0.001
17	2	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	<0.003
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	6.6
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	283
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	283
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	<0.001
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	<0.003
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	<0.005
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	<0.0001
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	<0.0001
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	<0.0001
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.0927
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.0894
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	0.015
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	0.015
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.25
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.0000468
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.0000418
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	176
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	192
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	3.5
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	0.00015
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00017
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	<0.0001
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	1340
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	<0.0002
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	<0.5
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	%	88.1
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	11.21
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.111
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	794
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	<0.01
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	<0.00005
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0572
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0622
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	86.1
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	83.2
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00057
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.00058
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.0000005
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.00465
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.000621
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	<0.0005
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	<0.0005
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	36.5
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	<0.005
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	432
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP, Field	mV	191.4
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	0.0018
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	6.51
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.07
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.0042
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	2.44
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	2.45
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.126
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.115
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	2.28
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	2.34
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	4.33
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	4.25
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.203
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.205
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	420
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	4.9
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	<0.0003
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	1030
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	0.193
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	<0.5
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	<1
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Field	NTU	0.07
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	0.1
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.00454
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.0048
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	<0.0005
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	<0.001
3	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	<0.003
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	6
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	287
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as HCO3)	mg/L	350
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CO3)	mg/L	<1
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as OH)	mg/L	<1
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	287
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	<0.001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	0.0039
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	0.0057

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Anion Sum	meq/L	17.3
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	<0.0001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	<0.0001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	<0.0001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.0942
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.0895
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	0.015
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	0.015
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.25
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.000042
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.0000417
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	175
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	187
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cation - Anion Balance	%	91.3
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cation Sum	meq/L	15.8
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	3.03
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	0.00016
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00017
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	<0.0001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	1360
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity, Field	uS/cm	799
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	<0.0002
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	<0.5
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	%	87.9
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	11.13
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	DMSeO - Dimethylselenoxide	mg/L	<0.00001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.117
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	780
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ion balance (APHA)	%	4.53
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	<0.01
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	<0.00005
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0617
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0664
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	83.4
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	77
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00066
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.00068
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.000005
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.00061
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.000649
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	<0.0005
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	<0.0005
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	35.7
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	<0.005
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	497
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	0.0016
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	7.73
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.04
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.0032
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	2.58
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	2.42
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Se(IV) - Selenite	mg/L	0.000085
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Se(VI) - Selenate	mg/L	0.11
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	SeCN - Selenocyanate	mg/L	<0.00001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.110333333
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.110333333
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium Unknown	mg/L	<0.00001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenosulphate	mg/L	<0.00001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	SeMe - Selenomethionine	mg/L	<0.00001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	2.36
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	2.53
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	4.35
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	4.02
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Specific Conductivity	uS/cm	1287
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.2
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.214
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	430
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphur (S)-Dissolved	mg/L	148
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphur (S)-Total	mg/L	157
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	5.2
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	<0.0003
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	1050
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	<0.05
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	<0.5
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	<1
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	<0.1
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.00495
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00495
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	<0.0005
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	<0.001
15	3	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	<0.003
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	<2
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	285
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	285
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	0.0011
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	0.0056
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	<0.005
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	<0.0001
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	0.00013

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	0.00016
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.0894
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.1
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	0.015
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	0.016
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.25
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.0000403
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.000046
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	162
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	188
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	5.86
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	0.00016
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00023
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	<0.0001
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	1350
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	<0.0002
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	<0.5
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	%	80.4
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	10.83
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.136
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	718
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	0.014
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	<0.00005
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0675
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0644
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	76.1
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	83.7
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00048
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.00088
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.000005
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.000653
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.000737
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	0.00054
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	<0.0005
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	33.4
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	<0.005
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	430
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP, Field	mV	343.6
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	<0.001
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	7.76
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.13
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.0058
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	2.65
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	2.7
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.106
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.116
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	2.14
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	2.3
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	4.93
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	5.12
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.199
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.205
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	434
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	2.8
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	<0.0003
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	1200
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	<0.05
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	<0.5
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	1.7
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	0.11
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.00485
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00505
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	<0.0005
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	0.0011
14	4	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	<0.003
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	2
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	195
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	195
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	0.0028
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	0.0872
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	<0.005
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	0.00018
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	0.00019
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	0.00011
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	0.00016
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.0671
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.0772
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	0.01
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	0.011
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.25
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.0000805
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.000132
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	122
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	126
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	3.68
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	0.00012
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00026

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	0.00013
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	0.00026
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	1020
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	0.00023
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	1.32
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	10.96
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.159
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	550
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	0.15
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	0.000124
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0436
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0431
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	59.6
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	58.9
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00342
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.0132
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.000005
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.0016
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.00185
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	0.00444
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	0.00534
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	22.2
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	0.0066
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	254
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP, Field	mV	134.6
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	<0.001
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	8.06
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.15
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.0175
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	2
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	2.07
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.0856
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.0788
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	1.76
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	2.15
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	2.87
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	2.93
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.152
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.159
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	325
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	5
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	0.00001
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	0.00104
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	753
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	<0.05
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	2.39
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	13.4
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Field	NTU	9.25
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	1.7
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.00359
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00373
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	0.00054
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	0.0032
4	5	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	0.0064
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	<2
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	177
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	177
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	0.0031
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	0.0257
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	0.0069
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	0.00013
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	0.00014
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	0.00014
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.0501
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.0536
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	<0.01
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	<0.01
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.05
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.0000375
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.0000574
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	89.9
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	89.3
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	1.69
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	<0.0001
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00014
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	<0.0001
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	725
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	0.00038
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	1.69
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	11.02
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.159
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	398
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	0.059
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	0.000061
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0305
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0311
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	42.2
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	42
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00097

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.00558
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.000005
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.0013
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.00136
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	0.00161
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	0.00194
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	11.1
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	0.0025
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	250
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP, Field	mV	124.3
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	<0.001
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	7.79
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.16
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	<0.002
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	1.4
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	1.49
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.0496
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.0499
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	1.55
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	1.59
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	2.19
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	2.29
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.119
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.114
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	174
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	5.8
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	0.00044
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	501
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	0.468
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	1.82
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	17.8
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	1.21
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.00229
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00255
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	0.00069
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	0.0013
3	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	0.0042
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	<2
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	172
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as HCO3)	mg/L	210
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CO3)	mg/L	<1
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as OH)	mg/L	<1
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	172
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	0.0024
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	0.0733
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	0.1
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Anion Sum	meq/L	6.52
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	0.00015
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	0.00016
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	0.00016
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.038
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.0392
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	<0.01
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	<0.01
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.05
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.0000633
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.0000811
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	75.4
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	73.9
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cation - Anion Balance	%	99.1
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cation Sum	meq/L	6.46
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	1.1
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	<0.0001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00026
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	0.0001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	549
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity, Field	uS/cm	414.9
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	0.00021
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	1.34
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	%	84.4
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	10.62
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	DMSeO - Dimethylselenoxide	mg/L	<0.00001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.159
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	317
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ion balance (APHA)	%	0.462
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	0.116
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	0.000088
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0266
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.026
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	31.3
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	31.7
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00096
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.00677
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.000005
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.0013
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.00129
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	0.00247
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	0.00298

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	9.66
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	0.0129
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	367
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	<0.001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	7.62
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.01
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.02
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	1.36
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	1.37
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Se(IV) - Selenite	mg/L	0.000078
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Se(VI) - Selenate	mg/L	0.0379
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	SeCN - Selenocyanate	mg/L	<0.00001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.03595
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.0357
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium Unknown	mg/L	<0.00001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenosulphate	mg/L	<0.00001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	SeMe - Selenomethionine	mg/L	<0.00001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	1.56
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	1.78
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	1.77
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	1.75
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Specific Conductivity	uS/cm	661
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.089
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.0925
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	113
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphur (S)-Dissolved	mg/L	43.5
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphur (S)-Total	mg/L	43.3
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	5.5
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	0.00092
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	388
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	1.19
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	1.38
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	9
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	1.64
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.00194
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.002
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	0.00059
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	0.0026
29	6	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	0.0035
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	<2
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	171
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	171
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	0.0024
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	0.0955
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	<0.005
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	0.00013
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	0.00014
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	0.0002
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.0538
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.0546
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	<0.01
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	<0.01
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.05
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.000041
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.0000764
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	87
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	92.1
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	1.52
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	<0.0001
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00028
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	0.00018
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	695
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	0.00021
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	0.91
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	11.62
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.138
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	380
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	0.16
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	0.000114
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0359
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0307
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	39.6
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	38.5
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00139
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.0117
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.000005
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.00117
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.00111
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	0.00169
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	0.00229
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	12
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	0.0018
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	256
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP, Field	mV	202.6
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	<0.001
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	8
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.11
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.0221
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	1.48
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	1.28
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.0448

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.0433
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	1.71
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	1.92
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	2.13
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	2.13
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.116
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.105
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	160
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	5.4
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	<0.0021
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	432
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	0.26
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	1.39
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	13.9
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Field	NTU	0.658
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	1.64
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.00224
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00225
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	0.00067
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	0.0025
7	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	0.0037
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	<2
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	211
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	211
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	0.0016
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	0.0122
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	<0.005
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	0.00016
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	0.00016
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	<0.0001
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.0546
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.055
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	0.01
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	0.011
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.05
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.0000555
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.0000609
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	91.4
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	96.6
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	1.38
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	<0.0001
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00015
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	<0.0001
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	748
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	<0.0002
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	0.55
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	%	92.2
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	11.62
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.192
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	397
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	0.022
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	<0.00005
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0364
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0372
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	41
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	41.2
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00143
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.00266
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.000005
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.00132
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.00136
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	0.00216
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	0.00235
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	14
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	0.0027
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	390
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP, Field	mV	202.6
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	<0.001
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	8
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.16
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.0054
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	1.65
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	1.7
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.0631
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.0605
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	1.67
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	1.78
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	2.2
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	2.36
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.116
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.123
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	182
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	5.4
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	<0.0003

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	575
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	0.319
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	0.58
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	2.4
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	0.68
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.00266
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00273
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	<0.0005
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	0.0022
19	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	<0.003
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	<2
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	194
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	18.6
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	213
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	<0.001
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	0.0064
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	<0.005
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	0.00015
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	0.00016
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	<0.0001
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.0611
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.0593
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	0.012
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	0.012
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.05
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.0000559
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.0000591
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	105
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	105
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	1.47
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	0.0001
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00011
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	<0.0001
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	822
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	<0.0002
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	0.79
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	10.26
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.186
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	464
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	<0.01
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	<0.00005
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0493
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0448
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	49
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	49.1
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.0013
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.00208
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.000005
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.00134
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.00136
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	0.0021
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	0.00224
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	16.1
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	0.0042
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	368
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP, Field	mV	-37.4
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	<0.001
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	8.01
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.47
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.0036
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	1.94
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	1.94
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.0729
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.0697
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	1.78
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	1.88
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	2.7
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	2.67
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.12
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.12
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	212
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	8.2
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	<0.0003
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	629
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	0.069
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	0.57
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	<1
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	0.14
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.0029
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00305
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	<0.0005
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	0.0018
26	7	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	<0.003
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	3.7
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	262
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	262
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	<0.001
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	0.0067
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	<0.005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	0.00011
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	0.00012
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	<0.0001
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.068
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.0704
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	0.014
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	0.015
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.05
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.0000368
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.0000348
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	108
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	117
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	2.91
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	0.00012
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00011
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	<0.0001
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	879
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	<0.0002
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	<0.5
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	9.62
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.17
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	486
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	0.01
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	<0.00005
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0486
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.051
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	52.5
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	57.7
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00079
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.00143
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.000005
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.0012
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.00125
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	0.00071
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	0.00098
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	19.8
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	0.0047
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	380
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP, Field	mV	136.9
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	<0.001
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	7.89
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.02
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.004
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	2.07
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	2.29
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.0945
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.0704
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	2.02
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	2.05
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	3.2
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	3.5
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.126
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.129
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	239
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	7.3
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	<0.0003
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	718
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	0.15
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	<0.5
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	<1
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Field	NTU	0.59
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	0.22
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.00319
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00329
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	<0.0005
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	0.0011
11	8	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	<0.003
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	2.1
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	279
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as HCO3)	mg/L	341
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CO3)	mg/L	<1
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as OH)	mg/L	<1
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	279
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	<0.001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	0.0042
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	<0.005
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Anion Sum	meq/L	13.6
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	0.00012
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	0.0001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	0.00015
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.0971
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.0913
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	0.02
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	0.018
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.25
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.0000362

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.0000372
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	154
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	138
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cation - Anion Balance	%	100
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cation Sum	meq/L	13.6
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	4.33
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	0.0001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00013
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	<0.0001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	1090
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity, Field	uS/cm	1026
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	0.00023
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	<0.5
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	%	77
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	9.7
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	DMSeO - Dimethylselenoxide	mg/L	<0.00001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.159
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	666
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ion balance (APHA)	%	<0.01
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	<0.01
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	<0.00005
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0669
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0555
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	68.3
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	68.3
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00038
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.00049
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.000005
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.000882
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.000778
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	<0.0005
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	<0.0005
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	23.5
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	<0.005
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	296
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	<0.001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	8.94
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.07
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.0024
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	2.69
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	2.65
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Se(IV) - Selenite	mg/L	0.000091
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Se(VI) - Selenate	mg/L	0.0868
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	SeCN - Selenocyanate	mg/L	<0.00001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.10935
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.084266667
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium Unknown	mg/L	<0.00001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenosulphate	mg/L	<0.00001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	SeMe - Selenomethionine	mg/L	<0.00001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	2.76
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	2.12
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	4.32
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	4.31
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Specific Conductivity	uS/cm	1603
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.176
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.16
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	298
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphur (S)-Dissolved	mg/L	124
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphur (S)-Total	mg/L	103
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	6.533333333
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	<0.0003
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	832
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	1.54
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	<0.5
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	<1
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	0.12
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.00418
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00367
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	<0.0005
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	<0.001
18	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	<0.003
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	<2
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	299
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	299
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	0.0043
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	0.0057
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	<0.005
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	0.00012
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	0.0001
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	<0.0001
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.111
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.0877
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	0.02
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	0.019
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.25
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.0000366
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.0000424
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	141
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	143

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	7.82
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	0.00014
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00018
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	<0.0001
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	1090
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	<0.0002
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	<0.5
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	%	79.1
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	9.5
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.166
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	676
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	<0.01
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	<0.00005
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0604
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0623
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	78.6
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	60.5
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00096
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.00095
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.000005
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.000957
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.000785
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	<0.0005
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	0.00095
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	23.8
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	<0.005
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	292
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP, Field	mV	195.1
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	<0.001
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	7.8
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.24
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.0049
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	2.58
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	2.6
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.108
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.0807
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	2.55
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	2.36
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	5.04
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	4.31
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.194
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.16
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	306
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	7.2
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	<0.0003
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	847
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	<0.05
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	<0.5
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	<1
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	0.28
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.0046
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00387
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	0.00053
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	<0.001
26	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	<0.003
29	9	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP, Field	mV	173.8
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	5
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	248
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	18.6
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	267
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	<0.001
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	<0.003
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	0.0084
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	<0.0001
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	0.0001
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	<0.0001
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.11
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.125
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	0.02
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	0.018
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.25
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.000049
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.0000388
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	171
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	156
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	13.3
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	0.00017
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00015
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	<0.0001
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	1140
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	<0.0002
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	<0.5
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	%	77.1
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	9.2
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.133
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	760
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	<0.01
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	<0.00005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0697
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0692
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	81
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	72.4
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.0004
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.00044
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.000005
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.00078
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.000723
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	<0.0005
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	<0.0005
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	23
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	<0.005
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	28.3
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP, Field	mV	226.9
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	<0.001
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	7.67
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.43
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.0033
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	2.96
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	2.68
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.0993
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.0791
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	2.58
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	2.57
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	7.27
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	6.65
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.187
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.171
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	356
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	7.6
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	<0.0003
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	856
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	0.396
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	<0.5
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	<1
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	<0.1
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.00462
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00394
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	<0.0005
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	<0.001
24	10	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	<0.003
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	<2
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	278
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	278
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	<0.001
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	0.0032
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	<0.005
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	<0.0001
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	<0.0001
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	0.00024
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.102
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.0955
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	0.019
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	0.018
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.25
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.0000489
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.0000366
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	161
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	182
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	15
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	0.00012
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00014
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	<0.0001
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	1280
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	0.00046
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	<0.5
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	10.22
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.158
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	739
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	<0.01
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	<0.00005
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0696
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0706
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	81.9
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	89.2
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00027
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.00056
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.000005
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.000734
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.00073
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	<0.0005
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	<0.0005
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	24.3
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	0.0345
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	309
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP, Field	mV	190
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	0.001
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	7.99
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.28

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.0062
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	2.8
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	2.97
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.137
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.091
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	2.6
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	2.62
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	8.01
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	8.37
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.19
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.194
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	399
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	4.4
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	<0.0003
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	980
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	<0.05
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	<0.5
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	1.3
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	0.13
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.00413
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00492
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	0.0005
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	<0.001
21	11	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	<0.003
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	3.7
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	266
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as HCO3)	mg/L	324
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CO3)	mg/L	<1
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as OH)	mg/L	<1
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	266
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	<0.001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	0.0038
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	<0.005
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Anion Sum	meq/L	16.8
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	<0.0001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	<0.0001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	0.0001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.0858
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.1
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	0.013
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	0.016
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.25
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.0000374
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.0000443
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	164
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	192
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cation - Anion Balance	%	86.3
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cation Sum	meq/L	14.5
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	16.9
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	0.00013
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00017
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	<0.0001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	1320
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity, Field	uS/cm	964
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	<0.0002
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	<0.5
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	%	82.8
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	10.36
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	DMS ₂ SeO - Dimethylselenoxide	mg/L	<0.00001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.154
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	706
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ion balance (APHA)	%	-7.35
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	<0.01
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	<0.00005
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.0638
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0684
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	72
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	88.4
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00039
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.00064
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.000005
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.000651
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.000839
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	<0.0005
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	<0.0005
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	23
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	0.0051
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	420
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	<0.001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	7.55
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.08
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.0054
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	2.37
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	2.74
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Se(IV) - Selenite	mg/L	0.000117
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Se(VI) - Selenate	mg/L	0.0844
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	SeCN - Selenocyanate	mg/L	<0.00001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.08993333
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.0916

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium Unknown	mg/L	<0.00001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenosulphate	mg/L	<0.00001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	SeMe - Selenomethionine	mg/L	<0.00001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	2.34
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	2.54
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	7.01
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	8.62
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Specific Conductivity	uS/cm	1531
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.193
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.205
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	450
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphur (S)-Dissolved	mg/L	154
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphur (S)-Total	mg/L	158
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	5.6
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	<0.0003
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	1000
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	1.08
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	<0.5
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	4.2
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	0.18
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.00459
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00484
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	<0.0005
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	<0.001
7	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	<0.003
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Acidity (as CaCO3)	mg/L	<2
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Bicarbonate (as CaCO3)	mg/L	267
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Carbonate (as CaCO3)	mg/L	9.4
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Alkalinity, Total (as CaCO3)	mg/L	276
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Dissolved	mg/L	<0.001
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Aluminum (Al)-Total	mg/L	0.0057
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Ammonia, Total (as N)	mg/L	<0.005
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Dissolved	mg/L	<0.0001
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Antimony (Sb)-Total	mg/L	<0.0001
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Dissolved	mg/L	<0.0001
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Arsenic (As)-Total	mg/L	0.00012
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Dissolved	mg/L	0.115
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Barium (Ba)-Total	mg/L	0.101
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Dissolved	mg/L	<0.00002
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Beryllium (Be)-Total	mg/L	<0.00002
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Dissolved	mg/L	<0.00005
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bismuth (Bi)-Total	mg/L	<0.00005
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Dissolved	mg/L	0.016
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Boron (B)-Total	mg/L	0.016
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Bromide (Br)	mg/L	<0.25
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Dissolved	mg/L	0.0000551
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cadmium (Cd)-Total	mg/L	0.0000556
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Dissolved	mg/L	175
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Calcium (Ca)-Total	mg/L	194
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chloride (Cl)	mg/L	18
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Dissolved	mg/L	0.00014
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Chromium (Cr)-Total	mg/L	0.00014
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Dissolved	mg/L	<0.0001
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Cobalt (Co)-Total	mg/L	<0.0001
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Conductivity	uS/cm	1360
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Dissolved	mg/L	<0.0002
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Copper (Cu)-Total	mg/L	<0.0005
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Organic Carbon	mg/L	<0.5
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	%	76.4
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Dissolved Oxygen, Field	mg/L	9.61
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Fluoride	mg/L	0.15
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Hardness - Dissolved (as CaCO3)	mg/L	799
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Dissolved	mg/L	<0.01
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Iron (Fe)-Total	mg/L	<0.01
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Dissolved	mg/L	<0.00005
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lead (Pb)-Total	mg/L	<0.00005
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Dissolved	mg/L	0.071
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Lithium (Li)-Total	mg/L	0.0682
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Dissolved	mg/L	87.9
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Magnesium (Mg)-Total	mg/L	94
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Dissolved	mg/L	0.00033
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Manganese (Mn)-Total	mg/L	0.001
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Dissolved	mg/L	<0.000005
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Mercury (Hg)-Total	mg/L	<0.000005
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Dissolved	mg/L	0.000747
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Molybdenum (Mo)-Total	mg/L	0.000756
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Dissolved	mg/L	<0.0005
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nickel (Ni)-Total	mg/L	<0.0005
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrate (as N)	mg/L	23.4
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Nitrite (as N)	mg/L	<0.005
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP	mV	377
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	ORP, Field	mV	173.8
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Orthophosphate	mg/L	<0.001
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Field	pH	7.64
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	pH, Lab	pH	8.35
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Phosphorus (P)-Total	mg/L	0.0042
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Dissolved	mg/L	3.24
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Potassium (K)-Total	mg/L	3.2
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Dissolved	mg/L	0.111
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Selenium (Se)-Total	mg/L	0.0913
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Dissolved	mg/L	2.7
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silicon (Si)-Total	mg/L	2.54
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Dissolved	mg/L	<0.00001
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Silver (Ag)-Total	mg/L	<0.00001
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Dissolved	mg/L	8.94
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sodium (Na)-Total	mg/L	9.02
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Dissolved	mg/L	0.22
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Strontium (Sr)-Total	mg/L	0.218
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Sulphate	mg/L	478
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Temperature, Field	deg c	5.4
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Dissolved	mg/L	<0.00001
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Thallium (Tl)-Total	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Dissolved	mg/L	<0.0001
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Tin (Sn)-Total	mg/L	<0.0001
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Dissolved	mg/L	<0.0003
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Titanium (Ti)-Total	mg/L	<0.0003
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Dissolved Solids	mg/L	1070
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Kjeldahl Nitrogen	mg/L	<0.05
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Organic Carbon	mg/L	<0.5
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Total Suspended Solids	mg/L	<1
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Turbidity, Lab	NTU	0.41
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Dissolved	mg/L	0.0053
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Uranium (U)-Total	mg/L	0.00494
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Dissolved	mg/L	<0.0005
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Vanadium (V)-Total	mg/L	<0.0005
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Dissolved	mg/L	<0.001
12	12	2022	FR_FRRD (RG_FRUPO)	FR_FRRD	Zinc (Zn)-Total	mg/L	<0.003
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	8.7
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	259
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	259
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	0.0013
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	0.0033
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	0.0059
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	<0.0001
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	0.00011
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	<0.0001
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0774
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.0815
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	0.012
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	0.013
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.25
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.0000325
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.000039
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	163
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	171
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	2.21
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	0.0001
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.00011
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	<0.0001
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	1220
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	<0.0002
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	<0.0005
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	0.66
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.109
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	710
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	<0.01
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	<0.00005
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.0473
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0512
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	73.6
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	81.3
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.00034
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.00102
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.0000005
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.00111
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.00112
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	0.00068
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	0.00076
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrate (as N)	mg/L	26
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrite (as N)	mg/L	<0.005
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	445
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Orthophosphate	mg/L	0.0024
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	7.86
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.0043
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	1.83
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	2
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.115
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.104
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	2.32
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	2.54
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	2.98
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	3.26
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.195
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.206
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	393
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	<0.00001
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	<0.0003
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Dissolved Solids	mg/L	932
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	<0.05
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	0.61
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Suspended Solids	mg/L	<1
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Lab	NTU	0.35
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00373
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00396
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	<0.0005
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	0.0013
17	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	<0.003
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	4.7
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	262
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as HCO3)	mg/L	320
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CO3)	mg/L	<1
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as OH)	mg/L	<1
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	262

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	<0.001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	0.0051
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	<0.005
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Anion Sum	meq/L	15.6
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	0.0001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	<0.0001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	0.0001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0919
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.0929
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	0.012
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	0.012
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.25
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.0000322
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.000034
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	150
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	159
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cation - Anion Difference	%	6.12
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cation - Anion Ratio	%	88.5
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cation Sum	meq/L	13.8
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	2.1
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	0.0001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.00014
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	<0.0001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	<0.0001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	1220
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity, Field	uS/cm	865
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	<0.0002
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	<0.0005
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	<0.5
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	%	74.6
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	mg/L	10.21
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	DMSeO - Dimethylselenoxide	mg/L	<0.00001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.141
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	682
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	0.011
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	<0.00005
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.0476
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0476
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	74.8
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	76
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.00046
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.00094
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.000005
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.00113
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.00112
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	0.00082
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	0.00088
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrate (as N)	mg/L	26.6
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrite (as N)	mg/L	<0.005
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	350
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Orthophosphate	mg/L	0.0018
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Field	pH	7.75
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	8.06
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.0042
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	1.98
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	1.98
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Se(IV) - Selenite	mg/L	0.000064
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Se(VI) - Selenate	mg/L	0.0921
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	SeCN - Selenocyanate	mg/L	<0.00001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.105333333
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.101
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium Unknown	mg/L	<0.00001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenosulphate	mg/L	<0.00001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	SeMe - Selenomethionine	mg/L	<0.00001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	2.54
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	2.22
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	3.17
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	3.15
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Specific Conductivity	uS/cm	1535
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.19
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.191
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	404
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphur (S)-Dissolved	mg/L	141
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphur (S)-Total	mg/L	133
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Temperature, Field	deg c	2.2
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	<0.00001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	<0.0003
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Dissolved Solids	mg/L	901
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	0.155
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	<0.5
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Suspended Solids	mg/L	2
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Lab	NTU	0.21
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00429
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00435
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	<0.0005
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	<0.001
19	1	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	<0.003
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	4.2
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	265
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	265
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	0.001
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	0.0079

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	<0.005
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	0.00012
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	0.00012
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	<0.0001
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0887
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.0959
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	0.012
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	0.012
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.25
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.0000341
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.0000437
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	173
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	176
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	3.32
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	0.00011
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.00015
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	<0.0001
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	<0.0001
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	1240
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity, Field	uS/cm	1286
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	<0.0002
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	<0.0005
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	<0.5
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	%	79.4
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	mg/L	10.42
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.129
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	770
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	0.013
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	<0.00005
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.0528
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0499
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	82
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	80.7
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.00083
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.00154
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.0000005
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.00136
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.00137
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	0.00102
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	0.00125
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrate (as N)	mg/L	27.4
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrite (as N)	mg/L	<0.005
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	448
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP, Field	mV	272.7
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Orthophosphate	mg/L	<0.001
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Field	pH	7.85
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	8.24
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.0034
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	2.02
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	2.09
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.104
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.112
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	2.33
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	2.58
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	3.38
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	3.49
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.211
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.214
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	427
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Temperature, Field	deg c	3.8
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	<0.00001
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	<0.0003
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Dissolved Solids	mg/L	998
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	0.134
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	<0.5
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Suspended Solids	mg/L	1.8
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Lab	NTU	0.28
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00437
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00406
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	<0.0005
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	0.0011
14	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	<0.003
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	5.3
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	266
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as HCO3)	mg/L	324
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CO3)	mg/L	<1
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as OH)	mg/L	<1
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	266
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	<0.001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	<0.003
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	<0.005
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Anion Sum	meq/L	16.6
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	0.00011
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	0.00012
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	<0.0001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0928
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.0929
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	0.011
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	0.012

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.25
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.0000414
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.0000434
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	165
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	167
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cation - Anion Balance	%	91
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cation Sum	meq/L	15.1
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	2.99
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	0.00013
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.00012
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	<0.0001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	1280
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity, Field	uS/cm	880
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	<0.0002
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	<0.0005
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	0.7
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	%	79.5
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	mg/L	10.44
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	DMSeO - Dimethylselenoxide	mg/L	<0.00001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.106
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	747
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	ion balance (APHA)	%	4.73
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	<0.01
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	<0.00005
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.0537
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0551
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	81.4
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	82.3
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.00078
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.00086
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.000005
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.00127
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.0021
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	0.00112
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	0.00118
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	414
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Field	pH	7.66
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	8
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.0028
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	2.29
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	2.32
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Se(IV) - Selenite	mg/L	0.000143
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Se(VI) - Selenate	mg/L	0.108
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	SeCN - Selenocyanate	mg/L	<0.00001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.111
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.107
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium Unknown	mg/L	<0.00001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenosulphate	mg/L	<0.00001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	SeMe - Selenomethionine	mg/L	<0.00001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	2.19
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	2.38
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	3.3
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	3.41
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Specific Conductivity	uS/cm	1483
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.204
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.206
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	445
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphur (S)-Dissolved	mg/L	151
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphur (S)-Total	mg/L	160
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Temperature, Field	deg c	3.7
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	<0.00001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	<0.0003
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	0.329
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	0.7
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00439
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00433
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	<0.0005
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	0.0016
16	2	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	<0.003
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	5.3
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	266
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	266
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	<0.001
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	<0.003
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	<0.005
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	0.00011
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	0.00012
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	<0.0001
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0928
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.0929
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	0.011
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	0.012
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.25
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.0000414
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.0000434
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	165
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	167
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	2.99
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	0.00013
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.00012
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	<0.0001
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	1280
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	<0.0002
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	<0.0005
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	0.7
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	mg/L	10.44
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.106
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	747
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	<0.01
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	<0.00005
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.0537
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0551
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	81.4
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	82.3
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.00078
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.00086
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.000005
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.00127
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.0021
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	0.00112
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	0.00118
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	414
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Field	pH	7.66
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	8
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.0028
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	2.29
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	2.32
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.111
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.107
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	2.19
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	2.38
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	3.3
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	3.41
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.204
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.206
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	445
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Temperature, Field	deg c	3.7
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	<0.00001
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	<0.0003
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	0.329
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	0.7
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00439
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00433
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	<0.0005
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	0.0016
7	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	<0.003
8	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	%	86
8	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	mg/L	12.2
8	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP, Field	mV	145.5
8	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Field	pH	8.39
8	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Temperature, Field	deg c	1
8	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Field	NTU	0.32
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	3.5
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	274
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	274
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	<0.001
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	0.0072
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	<0.005
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	<0.0001
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	0.00011
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	<0.0001
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0908
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.104
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	<0.01
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	0.013
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.25
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.0000265
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.000038
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	167
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	193
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	3.18
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	0.00011
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.00017
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	<0.0001
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	<0.0001
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	1320
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	<0.0002
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	<0.0005
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	<0.5
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	<0.1
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	762
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	<0.01
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	<0.00005
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.0388
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0587
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	83.9
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	103
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.00094
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.00137
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.000005
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.00114

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.00145
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	0.00087
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	0.00122
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrate (as N)	mg/L	28.3
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrite (as N)	mg/L	<0.005
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	486
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Orthophosphate	mg/L	<0.001
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	7.91
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.0028
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	1.97
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	2.36
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.0973
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.117
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	1.98
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	2.55
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	3.32
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	4.05
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.194
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.238
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	456
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	<0.00001
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	<0.0003
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Dissolved Solids	mg/L	1000
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	0.261
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	<0.5
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Suspended Solids	mg/L	<1
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Lab	NTU	0.21
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00396
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00449
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	<0.0005
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	0.0016
14	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	<0.003
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	5.7
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	252
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as HCO3)	mg/L	308
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CO3)	mg/L	<1
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as OH)	mg/L	<1
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	252
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	0.0014
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	0.0176
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	0.0276
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Anion Sum	meq/L	16.7
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	0.00012
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	0.00012
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	0.00011
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.09
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.0854
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	0.011
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	0.012
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.25
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.0000382
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.0000376
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	167
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	173
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cation - Anion Balance	%	91.6
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cation Sum	meq/L	15.3
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	3.52
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	0.0001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.00012
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	<0.0001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	1320
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity, Field	uS/cm	738
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	<0.0002
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	<0.0005
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	<0.5
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	%	80.9
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	mg/L	10.67
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	DMSeO - Dimethylselenoxide	mg/L	<0.00001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.115
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	755
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	ion balance (APHA)	%	4.38
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	0.02
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	<0.00005
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.0531
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0515
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	82.2
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	75.6
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.00114
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.0015
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.0000005
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.0014
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.00141
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	0.00114
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	0.00102
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrate (as N)	mg/L	28.4
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrite (as N)	mg/L	<0.005
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	486
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Orthophosphate	mg/L	0.0015
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Field	pH	7.65
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	7.99
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.0038

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	2.18
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	2.01
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Se(IV) - Selenite	mg/L	0.000078
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Se(VI) - Selenate	mg/L	0.0995
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	SeCN - Selenocyanate	mg/L	<0.00001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.1023
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.09935
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium Unknown	mg/L	<0.00001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenosulphate	mg/L	<0.00001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	SeMe - Selenomethionine	mg/L	<0.00001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	2.37
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	2.42
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	3.7
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	3.33
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Specific Conductivity	uS/cm	1249
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.202
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.208
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	458
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphur (S)-Dissolved	mg/L	161
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphur (S)-Total	mg/L	162
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Temperature, Field	deg c	3.6
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	<0.00001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	<0.0003
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Dissolved Solids	mg/L	1060
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	0.364
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	<0.5
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Suspended Solids	mg/L	9.7
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Lab	NTU	1.64
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00451
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00436
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	<0.0005
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	0.001
16	3	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	0.0071
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	<2
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	237
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	237
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	0.0016
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	0.0261
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	0.0104
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	0.00039
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	0.00042
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	0.0001
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	0.00015
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0924
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.0936
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	0.012
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	0.014
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.25
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.0000956
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.000116
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	160
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	165
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	3.84
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	<0.0001
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.0002
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	0.00025
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	0.00028
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	1270
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	0.00028
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	<0.0005
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	0.71
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	%	79.1
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	mg/L	11.02
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.157
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	711
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	0.046
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	<0.00005
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.0646
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0674
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	75.6
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	84.9
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.00408
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.00597
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.0000005
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.00508
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.00311
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	0.00706
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	0.00796
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrate (as N)	mg/L	27.1
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrite (as N)	mg/L	0.0213
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	468
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP, Field	mV	145.7
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Orthophosphate	mg/L	<0.001
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Field	pH	7.89
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	8.16
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.0057
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	2.42
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	2.55
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.106
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.115
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	2.02
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	2.3
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	3.5

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	3.75
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.223
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.23
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	439
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Temperature, Field	deg c	1.6
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	<0.00001
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	0.00051
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Dissolved Solids	mg/L	959
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	0.441
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	0.9
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Suspended Solids	mg/L	4.8
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Lab	NTU	1.28
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00452
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00536
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	<0.0005
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	0.0044
12	4	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	0.0054
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	2.2
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	194
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	194
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	0.0024
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	0.214
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	<0.005
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	0.00018
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	0.00022
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	0.00025
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0654
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.0892
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	<0.01
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	0.011
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromine (Br)	mg/L	<0.25
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.0000924
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.000172
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	118
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	125
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	2.41
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	<0.0001
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.0004
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	0.00014
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	0.00038
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	972
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	0.00032
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	0.00074
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	1.63
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	mg/L	10.87
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.152
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	540
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	0.311
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	0.000248
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.038
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0408
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	59.7
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	60.8
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.0035
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.0191
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.000005
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.00179
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.00196
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	0.00528
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	0.00708
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrate (as N)	mg/L	19.9
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrite (as N)	mg/L	0.0115
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	259
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP, Field	mV	120.7
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Orthophosphate	mg/L	<0.001
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Field	pH	7.99
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	8.14
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.0239
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	1.78
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	2.06
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.0837
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.0803
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	1.84
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	2.5
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	2.41
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	2.61
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.154
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.169
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	308
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Temperature, Field	deg c	3.8
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	0.000016
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	0.00196
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Dissolved Solids	mg/L	672
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	<0.05
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	2.82
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Suspended Solids	mg/L	31.4
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Field	NTU	9.26
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Lab	NTU	3.47
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00323
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00358

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	0.00104
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	0.004
4	5	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	0.0096
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	2.1
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	156
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	156
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	0.0024
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	0.201
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	<0.005
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	0.00012
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	0.00015
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	0.00031
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0436
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.0567
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	0.000023
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	<0.01
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	<0.01
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.05
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.0000355
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.000134
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	69.2
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	72.7
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	1.16
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	<0.0001
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.00044
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	0.00038
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	612
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	<0.0002
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	0.00078
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	1.63
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	mg/L	10.56
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.148
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	300
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	0.408
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	0.000332
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.0267
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0216
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	30.9
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	34.1
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.003
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.0289
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.000005
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.00119
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.00121
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	0.00168
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	0.00341
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrate (as N)	mg/L	8.8
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrite (as N)	mg/L	0.0017
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	408
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP, Field	mV	217.2
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Orthophosphate	mg/L	<0.001
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Field	pH	7.96
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	8.25
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.0557
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	1.18
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	1.29
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.0356
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.0351
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	1.78
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	2.05
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	1.82
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	1.7
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.0947
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.103
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	126
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Temperature, Field	deg c	4.9
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	0.000013
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	0.00176
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Dissolved Solids	mg/L	356
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	0.353
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	2.82
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Suspended Solids	mg/L	39.2
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Field	NTU	14.98
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Lab	NTU	9.41
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00183
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00191
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	0.00111
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	0.0018
6	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	0.0072
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	<2
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	187
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as HCO3)	mg/L	228
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CO3)	mg/L	<1
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as OH)	mg/L	<1
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	187
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	0.0029
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	0.081
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	0.0709
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Anion Sum	meq/L	7.06
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	0.00016
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	0.00017

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	0.00015
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0377
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.0409
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	<0.01
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	<0.01
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.05
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.0000826
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.000097
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	68.6
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	72.2
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cation - Anion Balance	%	87.4
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cation Sum	meq/L	6.17
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	1.01
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	<0.0001
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.00023
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	<0.0001
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	0.00013
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	584
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity, Field	uS/cm	438.6
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	0.00027
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	<0.0005
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	1
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	%	82.9
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	mg/L	10.35
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	DMS ₂ O - Dimethylselenoxide	mg/L	<0.00001
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.16
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO ₃)	mg/L	303
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	ion balance (APHA)	%	6.73
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	0.128
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	0.000141
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.026
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0258
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	32
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	32.7
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.00111
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.0104
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.000005
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.00138
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.00135
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	0.00259
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	0.00336
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrate (as N)	mg/L	9.61
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrite (as N)	mg/L	0.0016
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	401
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Orthophosphate	mg/L	0.0032
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Field	pH	7.58
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	8.21
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.0307
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	1.3
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	1.3
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Se(IV) - Selenite	mg/L	0.000081
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Se(VI) - Selenate	mg/L	0.0357
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	SeCN - Selenocyanate	mg/L	<0.00001
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.0348
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.03475
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium Unknown	mg/L	<0.00001
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenosulphate	mg/L	<0.00001
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	SeMe - Selenomethionine	mg/L	<0.00001
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	1.67
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	1.82
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	1.76
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	1.91
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Specific Conductivity	uS/cm	693
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.0927
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.099
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	125
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphur (S)-Dissolved	mg/L	42.7
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphur (S)-Total	mg/L	44.3
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Temperature, Field	deg c	5.8
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	<0.00001
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	0.00107
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Dissolved Solids	mg/L	382
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	0.914
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	1.41
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Suspended Solids	mg/L	15.6
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Lab	NTU	3.75
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00206
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00207
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	0.00052
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	0.0032
28	6	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	0.0044
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO ₃)	mg/L	<2
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO ₃)	mg/L	255
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO ₃)	mg/L	<1
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO ₃)	mg/L	<1
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO ₃)	mg/L	255
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	<0.001
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	0.0174
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	<0.005
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	0.00017
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	0.00016
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	0.00012
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0528

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.0558
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	<0.01
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	0.01
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.05
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.0000658
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.0000644
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	94.9
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	89.7
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	1.22
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	<0.0001
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.00017
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	<0.0001
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	<0.0001
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	766
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	0.00025
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	<0.0005
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	0.69
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.174
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	421
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	0.025
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	<0.00005
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.0358
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0355
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	44.8
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	44.3
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.00158
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.00294
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.000005
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.00152
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.00151
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	0.00275
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	0.00285
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrate (as N)	mg/L	12.2
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrite (as N)	mg/L	0.0043
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	296
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Orthophosphate	mg/L	0.0026
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	7.05
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.005
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	1.64
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	1.53
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.0675
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.0563
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	1.7
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	1.68
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	2.2
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	2.01
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.122
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.114
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	190
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	<0.00001
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	0.00067
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	<0.0003
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Dissolved Solids	mg/L	554
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	0.183
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	0.77
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Suspended Solids	mg/L	2.5
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Lab	NTU	0.57
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00273
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00277
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	<0.0005
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	0.0024
20	7	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	<0.003
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	2.2
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	230
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	230
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	<0.001
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	0.0064
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	<0.005
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	0.00016
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	0.00017
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	<0.0001
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0658
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.0726
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	0.012
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	0.013
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.25
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.0000504
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.0000455
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	112
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	129
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	3.79
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	0.00011
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.00014
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	<0.0001
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	<0.0001
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	916
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	<0.0002
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	<0.0005
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	<0.5
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	mg/L	8.97
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.18

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	502
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	0.013
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	<0.00005
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.0438
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0489
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	54.1
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	62
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.00145
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.00235
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.000005
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.00229
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.00263
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	0.00224
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	0.00271
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrate (as N)	mg/L	17.5
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrite (as N)	mg/L	<0.005
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	369
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP, Field	mV	130.2
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Orthophosphate	mg/L	0.0014
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Field	pH	7.88
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	8.02
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.0054
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	1.81
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	2.06
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.0818
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.0635
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	2.06
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	2.28
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	2.94
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	3.34
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.145
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.158
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	291
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Temperature, Field	deg c	8.6
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	<0.00001
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	<0.0003
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Dissolved Solids	mg/L	726
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	0.108
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	<0.5
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Suspended Solids	mg/L	<1
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Field	NTU	0.82
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Lab	NTU	0.22
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00331
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00356
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	<0.0005
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	0.002
11	8	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	<0.003
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	<2
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	233
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	233
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	<0.001
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	0.0081
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	<0.005
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	0.00017
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	0.00017
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	0.00015
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0846
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.0806
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	0.012
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	0.013
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.25
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.0000608
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.0000569
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	134
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	137
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	3.5
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	0.00012
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.00013
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	<0.0001
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	1090
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	0.00026
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	<0.0005
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	<0.5
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	mg/L	9.47
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.181
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	619
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	<0.01
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	<0.00005
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.0547
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0513
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	69
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	64.4
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.0009
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.00139
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.000005
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.00211
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.00214
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	0.00312
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	0.00308
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrate (as N)	mg/L	20.7

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrite (as N)	mg/L	0.0174
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	314
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP, Field	mV	114.4
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Orthophosphate	mg/L	<0.001
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Field	pH	7.81
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	8.07
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.0035
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	2.13
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	1.97
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.084
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.0849
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	2.26
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	2.34
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	3.55
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	3.08
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.176
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.168
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	336
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Temperature, Field	deg c	8.9
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	<0.00001
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	<0.0003
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Dissolved Solids	mg/L	802
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	0.409
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	0.54
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Suspended Solids	mg/L	1.6
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Field	NTU	-2.36
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Lab	NTU	0.58
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00399
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.0035
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	<0.0025
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	0.0028
8	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	<0.003
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	2.6
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	294
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as HCO3)	mg/L	358
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CO3)	mg/L	<1
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as OH)	mg/L	<1
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	294
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	0.001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	0.0052
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	<0.005
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Anion Sum	meq/L	14.8
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	0.00016
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	0.00014
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	0.00014
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0884
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.0848
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	0.015
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	0.012
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.25
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.0000372
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.0000397
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	156
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	140
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cation - Anion Balance	%	93.9
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cation Sum	meq/L	13.9
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	4.51
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	0.00012
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.00019
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	<0.0001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	<0.0001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	1120
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity, Field	uS/cm	612
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	<0.0002
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	<0.0005
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	<0.5
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	%	76.5
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	mg/L	9.82666667
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	DMSeO - Dimethylselenoxide	mg/L	<0.00001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.164
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	684
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	ion balance (APHA)	%	3.14
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	<0.01
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	<0.00005
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.0585
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0496
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	71.6
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	72.5
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.00098
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.00128
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.000005
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.0026
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.00218
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	0.0022
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	0.00217
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrate (as N)	mg/L	21
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrite (as N)	mg/L	0.0057
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	292
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Orthophosphate	mg/L	<0.001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Field	pH	7.87666667
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	8.05
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.0027

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	2.15
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	2.19
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Se(IV) - Selenite	mg/L	0.000127
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Se(VI) - Selenate	mg/L	0.0755
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	SeCN - Selenocyanate	mg/L	<0.00001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.0919
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.07565
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium Unknown	mg/L	<0.00001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenosulphate	mg/L	<0.00001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	SeMe - Selenomethionine	mg/L	<0.00001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	2.75
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	2.18
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	3.69
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	3.73
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Specific Conductivity	uS/cm	951
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.196
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.175
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	349
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphur (S)-Dissolved	mg/L	114
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphur (S)-Total	mg/L	124
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Temperature, Field	deg c	6.733333333
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	<0.00001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	<0.0003
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Dissolved Solids	mg/L	866
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	1.5
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	<0.5
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Suspended Solids	mg/L	2.6
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Lab	NTU	0.24
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00395
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00358
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	<0.0005
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	0.0015
18	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	<0.003
29	9	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP, Field	mV	214.6
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	<2
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	235
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	20.2
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	255
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	<0.001
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	0.0035
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	0.0083
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	0.00012
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	0.00014
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	<0.0001
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0902
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.104
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	0.013
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	0.012
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.25
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.000036
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.0000328
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	170
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	151
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	5.4
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	0.00012
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.00012
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	<0.0001
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	<0.0001
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	1120
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	<0.0002
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	<0.0005
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	<0.5
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	%	69.3
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	mg/L	8.76
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.143
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	760
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	<0.01
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	<0.00005
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.0621
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0596
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	81.6
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	72.4
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.00089
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.00108
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.000005
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.00243
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.00217
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	0.00187
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	0.00176
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrate (as N)	mg/L	23.2
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrite (as N)	mg/L	<0.005
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	279
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP, Field	mV	215.3
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Orthophosphate	mg/L	<0.001
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Field	pH	8
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	8.49
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.0025
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	2.24
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	2.01
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.0986
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.0769
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	2.25
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	2.23
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	4.55
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	4.06
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.202
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.18
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	369
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Temperature, Field	deg c	5.2
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	<0.00001
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	<0.0003
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Dissolved Solids	mg/L	896
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	0.395
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	<0.5
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Suspended Solids	mg/L	<1
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Lab	NTU	<0.1
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.0043
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00383
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	<0.0005
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	<0.001
24	10	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	<0.003
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	<2
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	251
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	251
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	<0.001
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	0.0046
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	<0.005
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	<0.0001
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	<0.0001
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	0.00018
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0915
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.0831
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	0.013
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	0.011
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.25
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.000035
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.000026
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	144
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	163
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	5.98
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	0.00024
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.00018
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	<0.0001
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	<0.0001
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	1170
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	<0.0002
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	<0.0005
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	<0.5
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	mg/L	9.55
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.138
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	663
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	<0.01
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	<0.00005
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.0496
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0492
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	73.7
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	84
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.00034
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.001
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.000005
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.000965
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.000977
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	<0.0005
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	<0.0005
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrate (as N)	mg/L	23.4
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrite (as N)	mg/L	0.0065
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	310
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP, Field	mV	143.7
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Orthophosphate	mg/L	<0.001
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Field	pH	7.91
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	8.25
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.0049
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	2.02
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	2.09
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.135
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.0905
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	2.41
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	2.48
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	3.8
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	3.99
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.18
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.184
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	358
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Temperature, Field	deg c	4.4
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	<0.00001
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	<0.0003
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Dissolved Solids	mg/L	908
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	<0.05
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	<0.5
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Suspended Solids	mg/L	2.6
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Lab	NTU	0.33
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00341
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00417

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	<0.0005
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	<0.001
21	11	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	<0.003
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	4.1
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	242
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as HCO3)	mg/L	295
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CO3)	mg/L	<1
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as OH)	mg/L	<1
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	242
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	<0.001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	0.0041
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	<0.005
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Anion Sum	meq/L	14.8
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	<0.0001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	0.0001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	0.00011
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0771
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.0883
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	<0.01
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	0.011
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.25
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.0000234
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.0000275
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	134
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	171
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cation - Anion Balance	%	84.4
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cation Sum	meq/L	12.5
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	6.91
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	0.00012
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.00014
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	<0.0001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	1190
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity, Field	uS/cm	837
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	<0.0002
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	<0.0005
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	<0.5
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	%	75.7
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	mg/L	9.76
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	DMSeO - Dimethylselenoxide	mg/L	<0.00001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.148
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	615
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	ion balance (APHA)	%	-8.42
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	<0.01
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	<0.00005
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.0421
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0483
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	68.1
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	77.8
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.00023
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.00051
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.000005
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.000755
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.000948
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	<0.0005
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	<0.0005
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrate (as N)	mg/L	24
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrite (as N)	mg/L	<0.005
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	443
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Orthophosphate	mg/L	<0.001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Field	pH	7.46
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	7.98
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.002
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	1.75
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	1.94
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Se(IV) - Selenite	mg/L	0.000053
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Se(VI) - Selenate	mg/L	0.0851
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	SeCN - Selenocyanate	mg/L	<0.00001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.08905
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.095766667
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium Unknown	mg/L	<0.00001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenosulphate	mg/L	<0.00001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	SeMe - Selenomethionine	mg/L	<0.00001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	2.15
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	2.43
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	3.3
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	3.94
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Specific Conductivity	uS/cm	1379
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.166
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.201
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	385
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphur (S)-Dissolved	mg/L	132
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphur (S)-Total	mg/L	139
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Temperature, Field	deg c	4.4
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	<0.00001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	<0.0003
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Dissolved Solids	mg/L	903
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	1.33
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	<0.5
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Suspended Solids	mg/L	1.7
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Lab	NTU	0.23
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00351

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00398
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	<0.0005
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	<0.001
7	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	<0.003
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Acidity (as CaCO3)	mg/L	2.3
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Bicarbonate (as CaCO3)	mg/L	241
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Carbonate (as CaCO3)	mg/L	7
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Alkalinity, Total (as CaCO3)	mg/L	248
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Dissolved	mg/L	<0.001
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Aluminum (Al)-Total	mg/L	0.006
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Ammonia, Total (as N)	mg/L	<0.005
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Dissolved	mg/L	<0.0001
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Antimony (Sb)-Total	mg/L	<0.0001
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Dissolved	mg/L	<0.0001
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Arsenic (As)-Total	mg/L	<0.0001
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Dissolved	mg/L	0.0971
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Barium (Ba)-Total	mg/L	0.0882
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Dissolved	mg/L	<0.00002
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Beryllium (Be)-Total	mg/L	<0.00002
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Dissolved	mg/L	<0.00005
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bismuth (Bi)-Total	mg/L	<0.00005
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Dissolved	mg/L	0.01
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Boron (B)-Total	mg/L	0.01
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Bromide (Br)	mg/L	<0.25
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Dissolved	mg/L	0.0000329
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cadmium (Cd)-Total	mg/L	0.0000351
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Dissolved	mg/L	151
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Calcium (Ca)-Total	mg/L	169
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chloride (Cl)	mg/L	7.17
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Dissolved	mg/L	<0.0001
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Chromium (Cr)-Total	mg/L	0.00014
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Dissolved	mg/L	<0.0001
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Cobalt (Co)-Total	mg/L	<0.0001
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Conductivity	uS/cm	1220
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Dissolved	mg/L	<0.0002
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Copper (Cu)-Total	mg/L	<0.0005
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Organic Carbon	mg/L	<0.5
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	%	75.8
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Dissolved Oxygen, Field	mg/L	9.72
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Fluoride	mg/L	0.143
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Hardness - Dissolved (as CaCO3)	mg/L	690
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Dissolved	mg/L	<0.01
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Iron (Fe)-Total	mg/L	<0.01
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Dissolved	mg/L	<0.00005
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lead (Pb)-Total	mg/L	<0.00005
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Dissolved	mg/L	0.0497
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Lithium (Li)-Total	mg/L	0.0471
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Dissolved	mg/L	76.1
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Magnesium (Mg)-Total	mg/L	83
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Dissolved	mg/L	0.00021
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Manganese (Mn)-Total	mg/L	0.00073
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Dissolved	mg/L	<0.000005
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Mercury (Hg)-Total	mg/L	<0.000005
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Dissolved	mg/L	0.000902
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Molybdenum (Mo)-Total	mg/L	0.000961
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Dissolved	mg/L	<0.0005
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nickel (Ni)-Total	mg/L	0.00054
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrate (as N)	mg/L	24.6
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Nitrite (as N)	mg/L	<0.005
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP	mV	397
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	ORP, Field	mV	214.6
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Orthophosphate	mg/L	<0.001
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Field	pH	7.62
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	pH, Lab	pH	8.32
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Phosphorus (P)-Total	mg/L	0.0026
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Dissolved	mg/L	2.12
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Potassium (K)-Total	mg/L	2.14
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Dissolved	mg/L	0.112
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Selenium (Se)-Total	mg/L	0.0944
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Dissolved	mg/L	2.67
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silicon (Si)-Total	mg/L	2.44
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Dissolved	mg/L	<0.00001
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Silver (Ag)-Total	mg/L	<0.00001
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Dissolved	mg/L	4.05
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sodium (Na)-Total	mg/L	4.02
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Dissolved	mg/L	0.203
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Strontium (Sr)-Total	mg/L	0.204
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Sulphate	mg/L	406
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Temperature, Field	deg c	4.7
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Dissolved	mg/L	<0.00001
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Thallium (Tl)-Total	mg/L	<0.00001
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Dissolved	mg/L	<0.0001
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Tin (Sn)-Total	mg/L	<0.0001
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Dissolved	mg/L	<0.0003
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Titanium (Ti)-Total	mg/L	<0.0003
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Dissolved Solids	mg/L	989
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Kjeldahl Nitrogen	mg/L	<0.05
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Organic Carbon	mg/L	<0.5
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Total Suspended Solids	mg/L	<1
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Turbidity, Lab	NTU	0.26
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Dissolved	mg/L	0.00401
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Uranium (U)-Total	mg/L	0.00387
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Dissolved	mg/L	<0.0005
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Vanadium (V)-Total	mg/L	<0.0005
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Dissolved	mg/L	<0.001
12	12	2022	GH_PC2 (RG_FODPO)	GH_PC2	Zinc (Zn)-Total	mg/L	<0.003
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	4.2
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	258
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	258
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0116
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0635
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	<0.0001
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00011
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00012
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.102

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.104
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.012
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.014
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000307
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000554
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	153
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	164
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	2.4
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00011
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00021
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity	uS/cm	1130
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity, Field	uS/cm	1300
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.74
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	78.4
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	11.4
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	0.141
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	674
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.015
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.054
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	0.00014
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0477
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0498
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	70.8
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	73.4
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00817
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00925
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.0000005
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00106
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.000797
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00064
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00071
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	24.32275
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0081
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP	mV	445
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	167.5
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	8.07
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Lab	pH	7.88
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0033
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2.04
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.1
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.118
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0964
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.55
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.69
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.18
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.34
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.189
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.195
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	365
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	-0.1
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	0.00038
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	920
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.552
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Organic Carbon	mg/L	1.08
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Suspended Solids	mg/L	5.4
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.6
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00381
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00426
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0016
6	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	0.0096
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	263
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	263
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0011
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0033
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.007
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	<0.0001
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00011
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	0.00013
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	<0.0001
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0954
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0999
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.012
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.013
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000322
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000395
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	143
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	154
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	1.95
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00027
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	<0.0001
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity	uS/cm	1170
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	<0.5
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	81.1
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	11.16
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	<0.1
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	659
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.018
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0472
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0488
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	73.4
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	72
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00521
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00567
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.0000005
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.000739
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00082
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.0006
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00062
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	25.1
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.005
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP	mV	445
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	167.1
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	7.95
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Lab	pH	8.19
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0028
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.98
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.03
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.101
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0986
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.42
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.54
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.32
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.48
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.179
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.195
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	334
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	2
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	874
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	<0.05
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Organic Carbon	mg/L	<0.5
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Suspended Solids	mg/L	<1
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.15
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00383
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00433
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	<0.001
11	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	4.7
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	269
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	269
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0017
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0072
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.007
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	<0.0001
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00011
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00011
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0929
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.102
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.013
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.013
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.000033
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000382
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	157
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	151
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	2.2
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	<0.0001
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00028
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity	uS/cm	1200
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity, Field	uS/cm	1263
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	<0.5
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	51.9
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	7.04
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	0.109
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	701
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.011
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.03
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0496
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0483
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	75.1
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	75.7
17	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00448

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00479
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.0000005
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.000852
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.000863
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00065
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00069
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	26.9
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0134
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	438
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	283.1
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	6.82
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.03
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0038
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.93
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.12
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.109
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.102
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.5
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.55
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.27
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.39
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.194
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.192
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	382
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	2.5
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	885
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.343
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	<0.5
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	1.3
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.13
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00386
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00409
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.001
17	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	2.5
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	258
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as HCO3)	mg/L	314
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CO3)	mg/L	<1
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as OH)	mg/L	<1
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	258
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	<0.003
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.107
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Anion Sum	meq/L	15.3
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	<0.0001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	<0.0001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	<0.0001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.107
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.105
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.013
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.014
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000363
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000394
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	154
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	162
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cation - Anion Difference	%	5.15
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cation - Anion Ratio	%	90.2
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cation Sum	meq/L	13.8
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	2.1
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00013
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00021
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1210
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity, Field	uS/cm	846
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.52
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	82.2
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	11.38
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	DMSeO - Dimethylselenoxide	mg/L	<0.00001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.13
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	682
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.012
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.02
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0463
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0466
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	72.3
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	72.9
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00492
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00491
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.0000005
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.000867
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00093
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00062
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00063

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	27.2
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.005
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	342
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	0.0011
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.01
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.2
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0023
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.96
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Se(IV) - Selenite	mg/L	0.000107
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Se(VI) - Selenate	mg/L	0.0914
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	SeCN - Selenocyanate	mg/L	<0.00001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.106333333
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.09715
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium Unknown	mg/L	<0.00001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenosulphate	mg/L	<0.00001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	SeMe - Selenomethionine	mg/L	<0.00001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.57
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.34
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.28
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.28
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Specific Conductivity	uS/cm	1520
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.191
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.197
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	389
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphur (S)-Dissolved	mg/L	134
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphur (S)-Total	mg/L	130
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	1.8
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	883
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	<0.05
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.68
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	<1
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	<0.1
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00411
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00437
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.001
20	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<10
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	260
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	260
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	<0.003
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0183
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	<0.0001
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00012
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	<0.0001
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.103
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0982
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.011
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.012
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000367
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000368
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	161
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	159
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	2.5
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00029
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00015
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1210
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity, Field	uS/cm	1293
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	<0.5
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	78.7
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	11.12
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	<0.1
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	711
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.013
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.017
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.045
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0458
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	75.1
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	72.2
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00552
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00546
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.0000005
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.000966
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.000946
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00074
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.0007
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	25.42465
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.005
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	392
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	172.8
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	0.0013
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.05
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.19
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0026
27	1	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.88
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.105
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.1
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.46
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.45
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.29
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.12
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.2
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.205
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	354
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	1.1
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	936
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.373
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Organic Carbon	mg/L	<0.5
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Suspended Solids	mg/L	1.6
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.4
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00374
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00369
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.001
27	1	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	2.5
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	277
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	277
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.004
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	<0.0001
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	<0.0001
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	<0.0001
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.109
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.106
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.013
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.012
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000332
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000423
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	164
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	174
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	2.45
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.0001
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00014
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity	uS/cm	1210
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity, Field	uS/cm	1293
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	<0.5
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	76.4
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.99
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	<0.1
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	727
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.01
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.021
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0492
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0446
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	77.1
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	76.4
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00635
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00665
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.0000005
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00097
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00101
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00076
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00077
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	26
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0068
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP	mV	470
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	165.6
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Orthophosphate	mg/L	0.0014
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	10.48
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Lab	pH	8.08
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0045
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.96
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.06
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.104
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.103
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.4
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.57
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.36
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.54
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.2
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.224
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	382
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	0.4
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
1	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
1	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
1	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
1	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	764
1	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	<0.05
1	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.52
1	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	<1
1	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.17
1	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00392
1	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00383
1	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
1	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
1	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0014
1	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	263
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	263
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.014
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0236
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	<0.0001
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	<0.0001
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00011
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.105
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.103
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.012
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.012
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000397
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000455
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	154
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	158
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	3.21
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00013
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00016
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1230
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	<0.5
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	75.7
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.38
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.193
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	691
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.043
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0462
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0443
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	74.4
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	76.3
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00562
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00667
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.0000005
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.000996
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.000925
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00086
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00095
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	25.5
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0067
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	433
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	103.3
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.04
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.23
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0104
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.87
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.92
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0982
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.101
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.42
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.54
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.13
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.45
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.205
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.211
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	382
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	2.1
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	978
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.417
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.57
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	4.7
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Field	NTU	0.11
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.4
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00385
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00408
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0011
9	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	257
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	6.6
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	264
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0014
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	<0.003
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	<0.0001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00016
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	<0.0001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.104
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.102
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.012
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.012
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000361
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000348
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	162
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	163
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	3.12
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00011
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00012
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1210
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity, Field	uS/cm	1313
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	<0.5
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	79.7
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.91
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	DMSeO - Dimethylselenoxide	mg/L	<0.00001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.125
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	723
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.013
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.018
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.048
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.045
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	77.4
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	78.4
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00551
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00566
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.000975
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00102
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.0008
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00092
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	28.3
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.005
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	376
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	137.9
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	7.29
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.33
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.002
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.91
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.89
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Se(IV) - Selenite	mg/L	0.000163
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Se(VI) - Selenate	mg/L	0.102
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	SeCN - Selenocyanate	mg/L	<0.00001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.09725
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0923
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium Unknown	mg/L	<0.00001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenosulphate	mg/L	<0.00001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	SeMe - Selenomethionine	mg/L	<0.00001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.35
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.43
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.34
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.33
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.204
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.211
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	402
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	2.2
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	895
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	<0.05
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.51
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	1
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.15
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00406
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00423
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0066
15	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	243
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	8
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	251
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	<0.003
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	<0.0001
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	<0.0001
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.103
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.101
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.012
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.012
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000368
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000418
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	176
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	161
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	3.3
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00016
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00084
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1260
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	0.00054
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.6
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.134
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	793
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.023
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0483
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.05
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	85.9
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	77.9
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00545
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00549
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00128
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00107
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00084
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00096
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	27.2
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0069
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	230
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.31
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0021
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	32.8
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.12
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.104
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.104
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.43
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.54
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.57
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.46
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.219
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.209
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	404
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	2.4
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	0.0001
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	989
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.286
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.66
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	<1
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.2
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00398
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00402
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	<0.001
16	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	7.5
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	267
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as HCO3)	mg/L	325
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CO3)	mg/L	<1
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as OH)	mg/L	<1
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	267
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.014
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Anion Sum	meq/L	15.6
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.0001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.0001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	<0.0001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.106
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.112
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.012
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.012
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000381
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000532
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	170
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	180
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cation - Anion Difference	%	1.63
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cation - Anion Ratio	%	96.8
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cation Sum	meq/L	15.1
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	2.8
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00013

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00015
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	0.00012
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	0.00014
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1240
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity, Field	uS/cm	782
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	1.15
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	82.7
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	11
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	DMSeO - Dimethylselenoxide	mg/L	<0.00001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.102
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	744
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.096
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.238
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0426
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0498
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	77.6
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	91.6
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.0367
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.0398
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00106
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00107
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00084
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00119
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	26.4
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.005
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	326
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	7.92
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.22
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0057
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2.01
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.13
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Se(IV) - Selenite	mg/L	0.000146
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Se(VI) - Selenate	mg/L	0.102
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	SeCN - Selenocyanate	mg/L	<0.00001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.1049
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.101733333
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium Unknown	mg/L	<0.00001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenosulphate	mg/L	<0.00001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	SeMe - Selenomethionine	mg/L	<0.00001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.46
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.64
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.39
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.75
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Specific Conductivity	uS/cm	1337
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.212
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.224
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	401
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphur (S)-Dissolved	mg/L	133
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphur (S)-Total	mg/L	156
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	3.3
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	990
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	<0.05
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	1.01
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	7.8
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	2.83
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00418
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00418
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0012
18	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	2.2
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	277
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	3.6
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	281
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0011
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0054
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	<0.0001
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	<0.0001
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	<0.0001
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.111
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.112
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.012
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.012
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000355
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000277
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	171
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	177
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	2.8
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00014
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00021
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1290
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity, Field	uS/cm	1388
22	2	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.63
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	78.4
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	11.43
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	0.104
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	753
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.019
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0489
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0482
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	79.2
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	79.5
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00628
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00668
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.0000005
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00076
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.000783
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00066
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00071
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	29.6
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.005
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP	mV	460
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	171.8
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	7.97
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Lab	pH	8.29
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0023
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2.01
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.95
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.11
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.121
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.59
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.67
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.77
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.39
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.215
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.208
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	440
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	-0.7
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	1070
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.378
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Organic Carbon	mg/L	<0.5
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Suspended Solids	mg/L	<1
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.19
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00418
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00403
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0015
22	2	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	4.2
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	258
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	258
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0114
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0067
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	<0.0001
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	<0.0001
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	<0.0001
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.102
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.128
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.01
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.013
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000311
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000397
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	156
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	191
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	2.69
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00012
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00013
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity	uS/cm	1230
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	<0.5
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	71.6
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	9.85
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	0.106
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	702
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.012
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.03
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0409
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0505
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	75.8
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	86.9
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00646
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00731
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	3	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.0000005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.000775
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.000762
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00065
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00065
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	27.3
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0093
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	412
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	154.7
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.05
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.29
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0042
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.84
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.92
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0971
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.105
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.31
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.46
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.29
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.73
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.204
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.21
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	399
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	2.1
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	886
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.439
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	<0.5
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	9.2
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Field	NTU	0.28
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.7
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00361
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00366
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.002
1	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
2	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	9.85
2	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	25.53726
2	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	154.7
2	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.05
2	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	2.1
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	254
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	254
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0018
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0062
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0208
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	<0.0001
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00011
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	<0.0001
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.108
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.105
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.01
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.012
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.00004
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000388
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	169
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	168
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	3.7
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00011
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00016
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1250
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity, Field	uS/cm at 25 C	1353
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.00039
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.57
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	80.1
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	11.49
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.162
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	730
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.015
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.026
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0489
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0486
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	74.7
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	75.4
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00556
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00631
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.0000005
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00102
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00112
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00085
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00075
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	28
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.005
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	462
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	152.6
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.37
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.19

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0061
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.91
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.98
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.1
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.102
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.12
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.45
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.4
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.62
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.202
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.22
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	416
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	0.5
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	0.00048
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	966
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	<0.05
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.61
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	1.8
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.1
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00404
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00435
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0082
8	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	2.5
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	262
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	262
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0021
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0048
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	<0.0001
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.0001
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	<0.0001
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.1
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.114
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	<0.01
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.012
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000362
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.000039
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	137
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	173
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	3.59
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00017
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00017
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	0.0001
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1260
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity, Field	uS/cm at 25 C	891
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	<0.5
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	78.6
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.73
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.1
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	637
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.012
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.023
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0372
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0506
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	71.7
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	85
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00565
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00649
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00102
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00108
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00078
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00097
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	28.5
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.005
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	426
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	147.9
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.12
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.04
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0043
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.87
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.1
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.099
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.106
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.06
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.4
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.95
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	4.05
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.18
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.226
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	422
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	2.4
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	957
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	<0.05
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	<0.5
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	<1
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.22
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00341
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00422
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0367
15	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	0.0157
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	4.4
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	255
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as HCO3)	mg/L	312
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CO3)	mg/L	<1
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as OH)	mg/L	<1
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	255
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0291
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Anion Sum	meq/L	16.1
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	<0.0001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	<0.0001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00012
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0945
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.1
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.011
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.011
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.000036
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000459
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	180
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	172
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cation - Anion Balance	%	97.5
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cation Sum	meq/L	15.7
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	3.72
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.0001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00018
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1260
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity, Field	uS/cm	674
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.71
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	80.5
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	11.23
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	DMS _{Se} O - Dimethylselenoxide	mg/L	<0.00001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.145
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	778
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ion balance (APHA)	%	1.26
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.069
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0463
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0468
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	79.8
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	83
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00558
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00781
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00095
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00103
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00072
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00101
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	28.4
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0057
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	493
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	7.69
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.21
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0055
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.92
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.91
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Se(IV) - Selenite	mg/L	0.000118
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Se(VI) - Selenate	mg/L	0.0972
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	SeCN - Selenocyanate	mg/L	<0.00001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0994
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.094733333
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium Unknown	mg/L	<0.00001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenosulphate	mg/L	<0.00001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	SeMe - Selenomethionine	mg/L	<0.00001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.28
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.29
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.33
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.55
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Specific Conductivity	uS/cm	1222
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.22
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.218
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	428
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphur (S)-Dissolved	mg/L	144
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphur (S)-Total	mg/L	140
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	1.5
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	0.00052
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	976
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	<0.05
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.64
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	<1
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.61
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00399
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.0042
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	<0.001
17	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	3
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	248
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	248
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0077
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00012
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00014
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00017
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0993
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.103
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.01
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.01
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000386
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000406
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	160
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	164
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	4.14
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	<0.0001
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00015
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1260
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	0.00059
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	<0.5
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	77
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.38
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.14
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	715
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.032
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0484
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0486
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	76.7
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	77.4
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00596
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00663
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.0000005
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00151
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00147
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00132
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00142
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	27.68445
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.007
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	478
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	182.8
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.07
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.03
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0034
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.93
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.08
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.101
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.101
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.26
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.21
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.43
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.57
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.2
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.211
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	430
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	2.8
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	0.00018
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	999
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.372
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.71
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	2.1
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Field	NTU	3.76
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.71
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00403
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00415
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0013
23	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	3

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	240
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	240
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0036
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0515
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0345
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00026
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00028
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	0.00012
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00014
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.102
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.109
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.012
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.013
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000475
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000612
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	161
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	172
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	5.015
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	<0.0001
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00023
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	0.00012
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	0.00014
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1200
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.00021
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.00005
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.9
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	77.3
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.65
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.14
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	703
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.07
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	0.000058
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0486
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.049
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	73.2
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	80.7
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00787
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00993
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	0.0000067
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00212
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00215
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00274
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00305
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	24.9761
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.01725
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	471
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	170.1
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.12
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.14
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0075
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2.1
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.25
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0994
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0965
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.41
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.62
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	4.08
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	4.33
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.198
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.212
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	407
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	2.1
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	0.00382
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0012
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	884
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.22
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	1.09
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	2.4
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Field	NTU	2.55
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	4.3
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00368
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00404
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0018
30	3	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	5
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	248
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	248
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0037
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0357
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.014
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00027
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00029
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	0.00013
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00015
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.104
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.107
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.011
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.011
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.000567
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.000634
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	148
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	148
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	4
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	<0.0001
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00023
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	0.00014
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	0.00017
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1160
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.00023
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	0.00052
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	1.22
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	75.8
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.17
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.1
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	649
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.074
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	0.000065
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0459
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0483
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	67.9
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	72
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00716
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00914
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	0.0000107
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00216
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.0021
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00309
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00347
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	23.8
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0191
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	346
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	144.1
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	0.0014
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.14
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.07
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0074
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.96
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.25
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0916
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0937
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.2
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.53
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.73
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.82
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.196
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.196
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	334
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	2.9
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0006
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	874
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.271
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	1.34
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	2.7
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	6.15
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00398
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.0039
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.002
1	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	0.0034
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	258
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	258
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0028
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0247
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0074
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00026
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00029
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00015
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.102
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.101
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	<0.01
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.012
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.000544
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.000646
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	152
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	155
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	4.86
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	<0.0001
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00015
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	0.00017
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	0.00019
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1210
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	1.55
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	78.4
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.61

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.146
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	693
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.048
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0497
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0536
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	76.2
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	78.5
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00751
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.0084
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00208
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00236
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00379
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00393
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	27.1
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0258
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	478
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	179.4
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.11
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.23
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0041
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2.1
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.32
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0925
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.098
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.05
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.43
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.8
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.9
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.194
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.21
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	408
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	2.9
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0009
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	932
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.254
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	1.26
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	1.9
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	1.56
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.0038
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00406
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0019
5	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
6	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	25.01175
6	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.02056
6	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	179.4
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	3.2
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	249
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	249
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0013
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0253
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00031
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00032
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00012
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0994
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0965
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.012
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.014
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000656
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000907
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	153
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	167
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	5.27
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	<0.0001
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00017
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	0.00016
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	0.00018
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1200
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.97
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	78.2
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	11.04
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.148
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	688
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.05
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0568
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0615
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	74.2
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	78.7
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00887
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00988
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
12	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00234

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00517
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00467
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00501
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	26.175295
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.02356
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP	mV	466
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	249.3
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	8.09
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Lab	pH	8.07
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0039
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2.22
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.46
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.105
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.112
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.14
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.38
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.63
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	4.07
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.21
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.229
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	372
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	1.1
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	0.00047
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	965
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.176
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.94
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Suspended Solids	mg/L	3.3
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Lab	NTU	1.63
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00426
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00463
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0031
12	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	0.0037
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	248
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	5.2
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	253
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0011
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0079
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0428
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00017
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00017
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00011
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.092
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0962
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.012
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.012
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000687
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000727
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	158
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	160
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	3.36
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	<0.0001
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00011
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity	uS/cm	1260
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.85
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	82.2
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	11.02
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	0.116
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	702
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.011
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.035
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0575
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0569
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	74.7
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	79.8
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00874
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00913
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00156
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00145
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00367
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00406
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	29.5
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.005
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP	mV	246
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	170.3
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	8.15
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Lab	pH	8.31
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0033
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2.23
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.09
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.107
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.109
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	1.98
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.07
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.52
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.51
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.201
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.215
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	402
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	3
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	1020
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	<0.05
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.83
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Suspended Solids	mg/L	<1
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.44
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.0044
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00454
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0031
20	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
22	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	9.96
22	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	29.075
22	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	47.7
22	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	8.12
22	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.105
22	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	3.5
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	3.3
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	215
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	215
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0033
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0402
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00017
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.0002
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00016
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0786
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0809
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.01
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.011
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000795
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.000108
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	131
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	141
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	3.72
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.0001
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00016
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	0.00022
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	0.00025
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity	uS/cm	1020
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.00028
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	1.67
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.9
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	0.146
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	588
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.063
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.045
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0483
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	63.4
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	73.2
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.01
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.0111
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.0018
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00187
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.0048
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00557
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	22.85
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0062
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP	mV	503
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	196.7
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	8.04
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Lab	pH	8.17
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0055
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.09
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0892
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.094
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	1.97
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.25
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.28
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.68
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.159
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.172
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	343
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	3.7
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
28	4	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	0.00088

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
28	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	797
28	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.336
28	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	1.79
28	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	3.5
28	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Field	NTU	14.79
28	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	1.83
28	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00349
28	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00392
28	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
28	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
28	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0039
28	4	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	0.0052
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	208
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	208
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0022
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0978
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00017
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00018
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	0.00011
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00019
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0705
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0738
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	<0.01
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.01
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000711
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000949
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	121
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	119
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	3.01
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	<0.0001
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00023
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	0.00012
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	0.0002
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	941
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.00026
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	0.00052
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	1.82
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	11.19
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.148
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	546
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.153
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	0.000094
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0402
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0401
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	59.2
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	55.3
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.0072
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.0126
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00179
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00171
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.0041
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00462
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	18.97833
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.005
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	493
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	130.2
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.15
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.16
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0154
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.7
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.8
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.071
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0738
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	1.92
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.17
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	2.67
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	2.69
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.148
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.142
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	285
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	4.4
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	0.00001
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	0.00137
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	694
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	<0.05
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	2.25
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	7
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Field	NTU	5.13
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	2.74
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00299
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00301
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	0.00063
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0027
5	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	0.0049
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	2.2
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	209
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	209
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0019

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0361
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00018
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00018
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00011
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0684
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0645
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	<0.01
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	<0.01
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000728
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000829
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	121
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	116
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	3.2
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00016
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00012
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	0.00012
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	0.00012
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	956
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.00038
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	1.84
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	9.95
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.149
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	555
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.054
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0432
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0426
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	61.4
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	53.4
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00566
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00696
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00194
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00187
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00445
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.0044
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	20.631895
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.014
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	341
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	98.7
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.21
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.15
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0081
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.97
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.75
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0754
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0725
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	1.82
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	1.88
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	2.87
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	2.83
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.146
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.139
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	309
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	3.7
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	0.00102
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	784
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.425
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	2.22
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	3.4
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Field	NTU	7.31
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	1.52
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00324
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00313
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0034
10	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	0.0038
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	2.9
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	195
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	195
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.002
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0463
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00017
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00017
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	<0.0001
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.065
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.066
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	<0.01
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.01
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.000063
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000787
17	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	114

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	116
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	3.01
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00015
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00017
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity	uS/cm	902
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.0004
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	0.00083
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	1.31
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	85.3
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.97
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	0.143
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	490
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.017
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.065
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0384
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0405
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	50
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	53.8
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00428
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00745
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00185
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00178
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00358
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00389
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	17.791405
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.005
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP	mV	381
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	177.4
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	7.98
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Lab	pH	8.12
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0099
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.63
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.68
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0697
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0685
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	1.44
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	1.6
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	2.56
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	2.76
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.148
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.14
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	298
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	4.6
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	0.00014
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	0.00131
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	534
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	<0.05
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Organic Carbon	mg/L	1.46
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Suspended Solids	mg/L	4.8
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Lab	NTU	2.06
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00288
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00305
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0028
17	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	0.0057
23	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	17.9399
23	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.015
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	210
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	210
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0014
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.011
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00017
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00018
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	<0.0001
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0756
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.068
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.01
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.011
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.05
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000646
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000716
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	132
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	127
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	3.18
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	<0.0001
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00012
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity	uS/cm	970
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.00023
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	1.16
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	91.3
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.89
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	0.154
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	575
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.013
24	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.026

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.043
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0461
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	59.6
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	61.5
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.0053
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00549
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00203
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00192
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00323
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00338
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	19.1
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0056
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	294
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	209
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.1
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.28
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0051
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.82
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.89
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0718
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0771
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	1.34
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	1.47
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	2.92
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.16
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.152
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.156
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	291
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	7.6
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	688
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	<0.05
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	1.3
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	2.4
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.63
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.0034
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00342
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0024
24	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	0.0034
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	196
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	196
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.002
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0817
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00014
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00016
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00015
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0557
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.06
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	<0.01
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	<0.01
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.05
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000399
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000643
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	87.8
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	83.2
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	1.7
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.0001
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.0003
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	0.00012
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	710
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.00022
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	1.88
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	81
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.79
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.137
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	378
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.125
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	0.000102
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.032
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0267
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	38.5
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	39.7
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00314
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.0099
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00141
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00146
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00196
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00231
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	11.264555
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0065
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	316
31	5	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	146.1

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	7.99
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Lab	pH	8.15
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0125
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.42
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.41
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0444
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0469
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	1.76
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	1.93
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	2.18
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	2.11
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.115
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.127
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	168
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	3.4
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	0.00188
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	466
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.402
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Organic Carbon	mg/L	1.79
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Suspended Solids	mg/L	10.9
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Lab	NTU	3.73
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00221
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00229
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	0.00054
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0023
31	5	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	0.0058
4	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	16.3
4	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	173.4
4	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	7.26
4	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	4.6
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	158
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	158
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0028
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.206
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00012
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00016
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00026
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0502
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0569
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	<0.01
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Total	mg/L	<0.01
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.05
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000261
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.00011
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	69.4
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	79
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	1.24
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00042
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	0.0003
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity	uS/cm	575
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.00023
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	0.00077
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	1.59
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.52
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	DMSeO - Dimethylselenoxide	mg/L	<0.00001
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	0.146
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	304
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.39
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	0.000269
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0226
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0235
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	31.7
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	33.9
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00486
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.0244
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.0011
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.0012
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00154
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00298
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	9.09
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0014
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP	mV	241
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	127.8
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	7.98
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Lab	pH	8.08
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0305
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.2
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.26
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Se(IV) - Selenite	mg/L	0.000079
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Se(VI) - Selenate	mg/L	0.0298
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	SeCN - Selenocyanate	mg/L	<0.00001
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.03095
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0314
7	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium Unknown	mg/L	<0.00001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenosulphate	mg/L	<0.00001
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	SeMe - Selenomethionine	mg/L	<0.00001
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	1.78
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.04
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	1.74
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	1.69
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.0987
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.106
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	135
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	4.4
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	0.000013
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	0.00162
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	377
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.614
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	1.99
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	34.5
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Field	NTU	11.8
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	7.44
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00173
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00186
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	0.00109
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0023
7	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	0.0066
9	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.38
9	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	9.72635
9	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.015
9	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	136.5
9	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.06
9	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	8.1
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	2
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	167
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	167
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0021
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.218
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0067
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00014
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00016
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00029
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0445
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0542
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	<0.01
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	<0.01
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.05
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000518
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.000135
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	72.3
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	79.2
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	0.87
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	<0.0001
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00051
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	0.00031
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	585
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.00021
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	0.00087
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	1.89
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.8
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.131
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	324
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.409
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	0.00038
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0276
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0284
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	34.9
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	34.4
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00368
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.0287
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00117
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00114
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00238
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00399
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	11.39822
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0024
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	355
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	161.3
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	0.004
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	7.97
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.11
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0241
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.25
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.35
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.043
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0483
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	1.75
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.19
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	1.81
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	1.81
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.0931
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.1
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	137
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	2.3

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	0.000014
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	0.00205
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	398
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.553
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	3.3
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	21.3
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Field	NTU	8.76
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	5.07
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00201
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00216
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	0.00114
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0026
14	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	0.0121
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	160
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	7.6
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	167
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0056
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.226
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0086
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00017
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00019
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	0.00015
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00033
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0489
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0491
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	0.000037
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	<0.01
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	<0.01
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.05
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000485
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.000153
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	68.2
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	74.3
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	1.03
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.0001
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00048
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	0.00038
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	581
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.00052
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	0.00093
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	4.28
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	81
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.14
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.13
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	281
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.53
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	0.000487
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0204
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0261
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	26.9
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	31.4
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.0178
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.038
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00122
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00122
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.0026
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00478
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	9.60372
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0022
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	368
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	221.7
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	0.0034
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	7.83
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.31
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0314
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.21
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.31
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0304
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0406
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.15
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	1.97
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	1.54
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	1.75
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.0849
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.1
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	115
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	4.7
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	0.000016
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	0.00181
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	426
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.362
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	4.07
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	20.5
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	8.05
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00152
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00217
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	0.00114
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0021
21	6	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	0.0079

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	175
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	175
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0041
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0814
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00015
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00019
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00016
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0407
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0413
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	<0.01
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Total	mg/L	<0.01
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.05
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000599
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.000087
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	69.6
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	70.8
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	0.98
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00021
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	0.00012
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity	uS/cm	598
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.00241
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	0.00082
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	1
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	80.5
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.14
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	0.145
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	304
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.134
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	0.000059
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	0.000142
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0259
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0253
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	31.6
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	31.6
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00269
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.0104
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00133
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00134
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00242
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00304
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	9.213305
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0028
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP	mV	321
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	247.6
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	7.81
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Lab	pH	8.34
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0249
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.29
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.24
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0352
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0353
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	1.69
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	1.8
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	1.84
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	1.82
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.0925
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.0966
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	115
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	5.5
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	0.0016
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	416
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.475
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Organic Carbon	mg/L	1.42
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Suspended Solids	mg/L	18.3
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Lab	NTU	6.27
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00198
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00198
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	0.00061
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0034
28	6	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	0.0079
2	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	10.8
2	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0446
3	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	11.19206
3	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.015
5	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
5	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	159
5	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	2.8
5	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	162
5	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0026
5	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.124
5	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0052
5	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00013
5	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00014
5	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00019
5	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0415
5	7	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0449

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	<0.01
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	<0.01
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.05
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000452
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000852
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	70.6
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	67.4
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	1.15
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00011
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.0003
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	0.00015
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	564
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.00022
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	0.00051
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	1.21
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	9.95
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.136
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	314
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.201
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	0.000183
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0264
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0247
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	33.4
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	28.2
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00239
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.0117
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00131
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00115
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00216
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00257
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	6.915455
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0011
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	354
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	174.5
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	7.9
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.25
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0229
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.26
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.18
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0363
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0329
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	1.7
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.02
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	1.77
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	1.73
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.094
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.0877
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	125
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	5.5
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	0.0011
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	412
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.395
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	2.1
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	18
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Field	NTU	15.46
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	10.4
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00186
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00177
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	0.00066
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0018
5	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	0.0045
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	195
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	195
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0043
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0176
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00015
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00016
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00013
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0505
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0503
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	<0.01
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	<0.01
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.05
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000429
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000485
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	79.1
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	81.2
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	1.54
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	<0.0001
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	<0.0001
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	648
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.00021

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.97
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	9.76
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.192
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	344
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.035
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0315
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0254
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	35.6
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	38.3
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.0124
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.017
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00153
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00141
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00189
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00209
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	10.06844
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0058
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	349
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	174.3
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	0.0014
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.05
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	7.57
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0189
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.45
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.39
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0454
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0428
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	1.66
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	1.78
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	1.96
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	2.05
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.104
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.101
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	157
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	8.8
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	0.00035
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	0.00038
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	462
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.071
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	1.61
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	3.5
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Field	NTU	2.26
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.51
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00225
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00221
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.002
13	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
22	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.64
22	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	12.982635
22	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.015
22	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	277.6
22	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.12
22	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0535
22	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	8.8
22	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Field	NTU	0.719
23	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	8.46
23	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	13.46035
23	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.015
23	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	262.5
23	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.52
23	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0603
23	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	8.5
23	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Field	NTU	1.26
24	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.15
24	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	13.639185
24	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.015
24	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	163.3
24	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	7.98
24	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0611
24	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	8
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	178
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	20
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	198
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.008
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00016
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00016
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.0001
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0608
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0593
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.011
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.011
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.05
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000567
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000618
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	104
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	102
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	1.37
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00011

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00012
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	802
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	<0.5
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.185
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	456
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.016
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0404
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0378
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	47.8
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	47.1
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00419
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00479
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00141
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00142
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00253
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00277
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	14.2
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0047
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	349
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.49
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0041
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.72
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.7
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0664
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0626
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	1.66
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	1.72
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	2.33
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	2.28
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.125
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.123
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	215
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	577
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.46
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	<0.5
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	1.1
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.29
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00274
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00285
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0026
25	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
26	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.35
26	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	-75.7
26	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.3
26	7	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	8.1
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	233
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	11.4
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	245
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0084
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0121
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.014
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00015
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00015
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00012
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0803
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0856
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.013
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.016
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.05
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000365
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000468
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	125
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	137
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	3.55
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00013
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00015
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	993
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.79
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	8.69
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.13
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	570
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.02
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.041
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0493
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0467
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	62.5
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	66.9
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.0129

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.0141
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00197
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00198
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00185
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.0019
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	19.007045
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.005
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	377
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	141.8
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.35
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0152
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2.03
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.12
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0825
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0794
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.38
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.31
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.14
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.33
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.162
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.164
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	281
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	8.4
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	743
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.289
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.88
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	5.1
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Field	NTU	12.05
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.93
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00348
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00372
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0018
16	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	221
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	221
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	221
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0013
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0085
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0246
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00015
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00015
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00021
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0808
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0834
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.013
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.014
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.05
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000451
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000486
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	125
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	128
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	3.56
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00016
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.000335
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	995
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.0008
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	0.0008
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.81
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	80
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	8.29
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.168
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	565
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.011
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.032
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	0.000256
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	0.000327
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0483
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0494
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	61.5
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	63.3
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.0128
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.0141
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00176
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00195
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.002
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00219
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	19.4
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0058
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	386
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	163
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	0.0011
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	7.89
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.06
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0051
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.97
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.12
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0855
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.08

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.09
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.49
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.27
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.145
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.161
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	287
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	13.6
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	766
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.246
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.7
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	1.9
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.41
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00342
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.0036
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0028
17	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	0.0038
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	249
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	3.6
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	252
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0037
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0372
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0145
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00014
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00015
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00014
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0824
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0838
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.013
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.013
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000374
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.000057
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	125
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	140
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	4.03
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00012
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00021
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	0.00011
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	985
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.5
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	84
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	8.98
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.162
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	571
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.098
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	0.000099
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0488
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0483
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	62.8
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	68.1
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00966
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.0159
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00186
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00184
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00159
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00211
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	20.2
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0079
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	312
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	153
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	7.93
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.31
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0222
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2.03
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.13
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0926
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0734
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.3
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.37
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	0.00001
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.19
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.44
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.159
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.166
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	308
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	12.2
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	0.00053
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	764
23	8	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.146

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
23	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.8
23	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Suspended Solids	mg/L	39.9
23	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Field	NTU	2.25
23	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Lab	NTU	6.19
23	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00334
23	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.0035
23	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
23	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
23	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0012
23	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
24	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	9.47
24	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	20.499915
24	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.015
24	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	267.2
24	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	8.08
24	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0808
24	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	9.2
28	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	15.964
28	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.015
28	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0616
29	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	16.6
29	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0698
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	232
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	232
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.0029
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	<0.0165
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00016
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00018
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00022
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0858
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0814
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.013
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.013
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000448
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000476
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	128
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	129
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	3.72
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00011
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00028
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity	uS/cm	971
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.00033
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.57
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	83.9
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	9.12
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	0.16
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	577
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.021
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0508
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0498
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	62.6
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	64.1
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00357
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00416
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00195
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00187
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00179
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00185
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	17.7
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0054
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP	mV	304
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	107.8
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	7.93
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Lab	pH	8.28
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0061
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.89
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.91
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0778
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0685
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.33
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.41
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.26
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.34
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.166
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.164
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	287
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	11.5
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	716
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	<0.05
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.51
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Suspended Solids	mg/L	1.4
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Field	NTU	0.66
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.5
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00329

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00325
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.003
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0031
30	8	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	234
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	3.4
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	237
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0082
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00015
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00015
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00021
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0988
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0869
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.014
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.014
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000576
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000561
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	148
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	136
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	2.99
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00015
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	<0.0001
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity	uS/cm	1050
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	<0.5
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	85.8
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	9.58
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	0.166
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	650
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.017
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0552
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0488
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	68.2
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	64.8
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00351
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00403
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00153
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00147
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00248
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00259
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	21.48107
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.005
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP	mV	315
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	158
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	7.96
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Lab	pH	8.28
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0031
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2.02
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.93
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0975
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0878
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.14
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.2
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.38
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.06
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.177
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.164
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	330
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	10.3
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	835
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.308
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.51
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Suspended Solids	mg/L	<1
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Field	NTU	2.3
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.29
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00381
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00357
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.001
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0019
6	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
9	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
9	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	241
9	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as HCO3)	mg/L	294
9	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
9	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CO3)	mg/L	<1
9	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
9	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as OH)	mg/L	<1
9	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	241
9	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
9	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0049
9	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
9	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Anion Sum	meq/L	13.3

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00015
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00014
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.0001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0857
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0972
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.012
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.012
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000349
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000465
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	134
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	136
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cation - Anion Balance	%	91
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cation Sum	meq/L	12.1
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	4.37
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	<0.0001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00011
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1040
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity, Field	uS/cm	696
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.00022
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.51
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	75.8
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	22.958
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	DMSeO - Dimethylselenoxide	mg/L	<0.00001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.157
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	595
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ion balance (APHA)	%	4.72
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.012
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0479
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0544
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	63.3
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	68.3
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00333
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.0033
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	MeSe(IV) - Methylseleninic Acid	mg/L	0.000014
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00188
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00181
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00157
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00174
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	20.8
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0088
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	338
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.135
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.25
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0036
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2.06
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.99
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Se(IV) - Selenite	mg/L	0.000175
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Se(VI) - Selenate	mg/L	0.075
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	SeCN - Selenocyanate	mg/L	<0.00001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0921
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0762
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium Unknown	mg/L	<0.00001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenosulphate	mg/L	<0.00001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	SeMe - Selenomethionine	mg/L	<0.00001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.36
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.16
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.79
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.81
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Specific Conductivity	uS/cm	1035
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.182
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.172
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	330
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphur (S)-Dissolved	mg/L	110
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphur (S)-Total	mg/L	109
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	7.92
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	846
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.935
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.54
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	1.3
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.22
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00404
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00364
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	<0.001
9	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
13	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	3.75
13	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	245
13	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
13	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
13	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	245
13	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.003
13	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0082
13	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0052
13	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.000135
13	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.000125
13	9	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00018
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.1051
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.09675
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.014
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.0145
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000412
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.00004115
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	143
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	145
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	4.175
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.000125
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.000145
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity	uS/cm	1060
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	0.000275
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.58
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	78.8
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	9.255
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	0.153
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	648
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.014
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0558
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0512
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	70.7
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	73.75
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00477
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00522
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	0.00000535
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00195
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00188
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.001625
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00169
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	21.75
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.00775
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP	mV	325.5
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	159.45
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	7.87
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Lab	pH	8.105
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.00275
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2.135
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.18
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0975
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.079
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.245
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.28
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.92
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.83
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.175
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.175
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	326
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	9.35
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	837.5
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.2435
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.56
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Suspended Solids	mg/L	<1
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Field	NTU	-1.395
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.4
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00375
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00371
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	0.00055
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0012
13	9	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	262
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	4.6
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	266
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	0.001
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0063
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0129
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00012
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00012
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	0.0001
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.0001
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0911
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0952
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.014
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.014
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000357
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000341
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	160
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	132
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	6.23447
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.0001
11	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00014

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1080
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	<0.5
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	80.2
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	9.97
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.135
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	683
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness (as CaCO3)	mg/L	541.6675
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.019
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.03
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0564
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0477
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	68.9
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	67.7
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.0129
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00834
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00129
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.0011
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00088
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00085
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	22.13204
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0076
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	291
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	160.3
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	0.0014
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	7.96
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.35
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.005
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.98
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.06
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.116
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.086
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.34
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.32
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.8
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	4
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.186
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.164
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	356
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	5.9
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	828
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	<0.05
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	<0.5
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	1.8
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.23
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00384
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00316
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	<0.001
11	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	4
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	267
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	267
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0041
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0058
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00012
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00012
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	0.00011
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.0001
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.105
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0933
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.014
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.016
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000348
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000321
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	168
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	179
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	7.58
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00012
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00015
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1100
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.54
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	81
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.01
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.154
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	737
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.017
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0556
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0634
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	77.2

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	81.4
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00878
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00893
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.0014
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00139
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00107
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00114
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	23
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0073
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	291
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	123
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	7.97
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	7.99
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	<0.002
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2.27
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.29
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.119
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0874
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.53
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.66
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.98
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	4.77
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.201
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.209
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	355
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	6.2
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	854
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	1.09
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	<0.5
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	16.4
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	2.25
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00338
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00392
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	<0.001
18	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	2.2
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	246
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	13.8
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	260
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0174
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00012
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00012
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00011
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.108
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.122
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.014
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.013
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000436
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000412
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	164
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	152
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	7.09
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00012
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00013
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1110
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	<0.5
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	83.5
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.78
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.155
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	740
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.046
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0558
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0542
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	80.4
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	70.3
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00478
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.0055
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00153
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00141
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00127
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00122
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	23.6
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.005
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	317
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	162.7
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.09
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.39
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0101
25	10	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2.23

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.04
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0996
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0783
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.34
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.39
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	4.75
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	4.38
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.189
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.18
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	372
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	4.4
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	870
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	<0.05
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Organic Carbon	mg/L	<0.5
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Suspended Solids	mg/L	7.2
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.85
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00392
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00354
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	<0.001
25	10	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	230
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	230
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0097
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00012
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.00012
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00014
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0959
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.092
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.012
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.012
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000418
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000367
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	145
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	151
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	6.31
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00012
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00015
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity	uS/cm	1170
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	<0.5
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	81.3
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.35
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	0.143
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	686
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.01
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.027
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0519
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0491
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	78.8
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	79
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00611
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.0072
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.00131
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00122
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00192
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.0022
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	23.5909
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.007
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP	mV	341
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	142.8
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	8.14
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Lab	pH	8.22
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0047
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2.1
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	2.14
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.124
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0914
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.28
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.28
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	4.1
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	4.41
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.186
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.174
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	378
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	5
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	934
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.732
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Organic Carbon	mg/L	<0.5
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Suspended Solids	mg/L	1.7
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.46
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00379
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00381
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.0013
1	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
2	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	9
2	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	23.8
2	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	201.1
2	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	7.93
2	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0883
2	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	2.8
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	220
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	12.6
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	232
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0096
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0053
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	<0.0001
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	<0.0001
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	<0.0001
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0952
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0928
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.014
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.013
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000324
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000336
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	151
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	143
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	7.13
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00014
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00012
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity	uS/cm	1150
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	<0.5
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.92
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	0.144
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	688
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.012
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.025
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0449
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0462
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	75.4
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	72.9
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00573
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00675
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.000878
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.000806
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.00068
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00064
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	23.2
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.005
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP	mV	297
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	7.82
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Lab	pH	8.39
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0039
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.76
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.74
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.11
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0893
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.58
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.23
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	4.16
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.79
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.171
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.179
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	364
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	1.2
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	901
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	1.21
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Organic Carbon	mg/L	<0.5
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Suspended Solids	mg/L	1.7
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.21
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00363
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00339
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	<0.001
7	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	231

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as HCO3)	mg/L	268
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	6.8
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Carbonate (as CO3)	mg/L	7.6
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Hydroxide (as OH)	mg/L	<1
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	237
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0128
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	0.0101
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Anion Sum	meq/L	14.1
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	<0.0001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	0.000105
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	<0.0001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0974
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0903
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.014
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.0125
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000316
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.00003655
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	148.5
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	146.5
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cation - Anion Balance	%	99.3
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cation Sum	meq/L	14
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chloride (Cl)	mg/L	7.055
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.000125
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00012
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity	uS/cm	1150
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Conductivity, Field	uS/cm	774
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	0.56
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	78.6
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	11.025
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	DMSeO - Dimethylselenoxide	mg/L	<0.00001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Fluoride	mg/L	0.1425
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	657
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ion balance (APHA)	%	-0.36
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	0.0115
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.0395
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0448
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0454
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	69.4
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	68.85
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.006745
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.008775
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.000886
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.000809
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	0.000745
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00076
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	23.61075
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.00655
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP	mV	288
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	160.3
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	7.885
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Lab	pH	8.335
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.00405
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.925
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.8
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Se(IV) - Selenite	mg/L	0.000099
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Se(VI) - Selenate	mg/L	0.0718
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	SeCN - Selenocyanate	mg/L	<0.00001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.0919
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.08826667
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium Unknown	mg/L	<0.00001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenosulphate	mg/L	<0.00001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	SeMe - Selenomethionine	mg/L	<0.00001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.565
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.335
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	4.205
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	3.89
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Specific Conductivity	uS/cm	1419
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.1815
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.179
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphate	mg/L	366
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphur (S)-Dissolved	mg/L	139
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Sulphur (S)-Total	mg/L	114
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	1.3
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	893
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	0.63
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Organic Carbon	mg/L	0.53
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Total Suspended Solids	mg/L	18.15
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Turbidity, Lab	NTU	1.54
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00359
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00346
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	0.00105
8	11	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
16	11	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	4.77
16	11	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	24
16	11	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	309.9
16	11	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.2
16	11	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0852
16	11	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	0
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	236
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as HCO3)	mg/L	288
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CO3)	mg/L	<1
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as OH)	mg/L	<1
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	236
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	0.0033
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Anion Sum	meq/L	14.6
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	<0.0001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	<0.0001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	0.00011
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0887
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.104
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	<0.01
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.011
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000322
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000272
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	137
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	178
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cation - Anion Balance	%	84.9
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cation Sum	meq/L	12.4
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	8.07
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	<0.0001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00015
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1190
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity, Field	uS/cm	741
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	<0.5
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	87.9
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	11.7
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	DMSO - Dimethylselenoxide	mg/L	<0.00001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.139
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	610
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ion balance (APHA)	%	-8.15
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.016
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0425
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.0486
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	65.2
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	80
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00771
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00931
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.000657
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.00084
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	<0.0005
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00061
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	23.7
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	0.0058
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	428
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	7.95
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.17
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0023
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	1.68
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.99
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Se(IV) - Selenite	mg/L	0.000127
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Se(VI) - Selenate	mg/L	0.0839
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	SeCN - Selenocyanate	mg/L	<0.00001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.092633333
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0892
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium Unknown	mg/L	<0.00001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenosulphate	mg/L	<0.00001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	SeMe - Selenomethionine	mg/L	<0.00001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.23
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.56
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	3.7
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	4.69
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Specific Conductivity	uS/cm	1322
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.171
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.205
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	385
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphur (S)-Dissolved	mg/L	135
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphur (S)-Total	mg/L	137
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	2
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	927
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	1.19
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	<0.5
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	1

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.17
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00349
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00393
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	<0.001
8	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
12	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	11.21
12	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.04
12	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	2.3
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Acidity (as CaCO3)	mg/L	<2
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Bicarbonate (as CaCO3)	mg/L	240
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Carbonate (as CaCO3)	mg/L	10.4
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Alkalinity, Total (as CaCO3)	mg/L	250
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Dissolved	mg/L	<0.001
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Aluminum (Al)-Total	mg/L	<0.003
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Ammonia, Total (as N)	mg/L	<0.005
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Dissolved	mg/L	0.00012
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Antimony (Sb)-Total	mg/L	<0.0001
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Dissolved	mg/L	<0.0001
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Arsenic (As)-Total	mg/L	<0.0001
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Dissolved	mg/L	0.0976
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Barium (Ba)-Total	mg/L	0.0944
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Dissolved	mg/L	<0.00002
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Beryllium (Be)-Total	mg/L	<0.00002
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Dissolved	mg/L	<0.00005
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bismuth (Bi)-Total	mg/L	<0.00005
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Dissolved	mg/L	0.014
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Boron (B)-Total	mg/L	0.012
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Bromide (Br)	mg/L	<0.25
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Dissolved	mg/L	0.0000376
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cadmium (Cd)-Total	mg/L	0.0000312
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Dissolved	mg/L	192
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Calcium (Ca)-Total	mg/L	149
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chloride (Cl)	mg/L	9.29
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Dissolved	mg/L	0.00011
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Chromium (Cr)-Total	mg/L	0.00014
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Dissolved	mg/L	<0.0001
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Cobalt (Co)-Total	mg/L	<0.0001
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Conductivity	uS/cm	1030
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Dissolved	mg/L	<0.0002
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Copper (Cu)-Total	mg/L	<0.0005
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Organic Carbon	mg/L	<0.5
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	%	76.7
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	10.67
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Fluoride	mg/L	0.145
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Hardness - Dissolved (as CaCO3)	mg/L	794
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Dissolved	mg/L	<0.01
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Iron (Fe)-Total	mg/L	0.011
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Dissolved	mg/L	<0.00005
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lead (Pb)-Total	mg/L	<0.00005
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Dissolved	mg/L	0.0539
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Lithium (Li)-Total	mg/L	0.049
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Dissolved	mg/L	76.3
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Magnesium (Mg)-Total	mg/L	72.6
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Dissolved	mg/L	0.00462
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Manganese (Mn)-Total	mg/L	0.00484
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Dissolved	mg/L	<0.000005
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Mercury (Hg)-Total	mg/L	<0.000005
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Dissolved	mg/L	0.000936
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Molybdenum (Mo)-Total	mg/L	0.000798
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Dissolved	mg/L	<0.0005
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nickel (Ni)-Total	mg/L	0.00052
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	23.8
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.005
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP	mV	435
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	151.9
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Orthophosphate	mg/L	<0.001
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.11
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Lab	pH	8.37
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Phosphorus (P)-Total	mg/L	0.0022
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Dissolved	mg/L	2.04
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Potassium (K)-Total	mg/L	1.96
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Dissolved	mg/L	0.114
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0922
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Dissolved	mg/L	2.5
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silicon (Si)-Total	mg/L	2.45
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Dissolved	mg/L	<0.00001
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Silver (Ag)-Total	mg/L	<0.00001
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Dissolved	mg/L	4.79
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sodium (Na)-Total	mg/L	4.75
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Dissolved	mg/L	0.214
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Strontium (Sr)-Total	mg/L	0.181
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Sulphate	mg/L	404
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	1.6
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Dissolved	mg/L	<0.00001
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Thallium (Tl)-Total	mg/L	<0.00001
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Dissolved	mg/L	<0.0001
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Tin (Sn)-Total	mg/L	<0.0001
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Dissolved	mg/L	<0.0003
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Titanium (Ti)-Total	mg/L	<0.0003
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Dissolved Solids	mg/L	482
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Kjeldahl Nitrogen	mg/L	<0.05
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Organic Carbon	mg/L	<0.5
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Total Suspended Solids	mg/L	<1
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Turbidity, Lab	NTU	0.21
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Dissolved	mg/L	0.00466
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Uranium (U)-Total	mg/L	0.00379
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Dissolved	mg/L	<0.0005
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Vanadium (V)-Total	mg/L	<0.0005
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Dissolved	mg/L	<0.001
16	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Zinc (Zn)-Total	mg/L	<0.003
21	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	8.83
21	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrate (as N)	mg/L	23.25862
21	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Nitrite (as N)	mg/L	<0.015
21	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	144.6
21	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	pH, Field	pH	8.08
21	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Temperature, Field	deg c	-0.1
22	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	ORP, Field	mV	215.3
23	12	2022	FR_FRABCH (RG FO22)	FR_FRABCH	Dissolved Oxygen, Field	mg/L	11.34

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
23	12	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Nitrate (as N)	mg/L	23.1
23	12	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	ORP, Field	mV	136.4
23	12	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	pH, Field	pH	8.32
23	12	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Selenium (Se)-Total	mg/L	0.0896
23	12	2022	FR_FRABCH (RG_FO22)	FR_FRABCH	Temperature, Field	deg c	0
21	1	2022	RG_FOUEW	RG_FOUEW	Acidity (as CaCO3)	mg/L	2
21	1	2022	RG_FOUEW	RG_FOUEW	Alkalinity, Bicarbonate (as CaCO3)	mg/L	213
21	1	2022	RG_FOUEW	RG_FOUEW	Alkalinity, Bicarbonate (as HCO3)	mg/L	260
21	1	2022	RG_FOUEW	RG_FOUEW	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
21	1	2022	RG_FOUEW	RG_FOUEW	Alkalinity, Carbonate (as CO3)	mg/L	<1
21	1	2022	RG_FOUEW	RG_FOUEW	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
21	1	2022	RG_FOUEW	RG_FOUEW	Alkalinity, Hydroxide (as OH)	mg/L	<1
21	1	2022	RG_FOUEW	RG_FOUEW	Alkalinity, Total (as CaCO3)	mg/L	213
21	1	2022	RG_FOUEW	RG_FOUEW	Aluminum (Al)-Dissolved	mg/L	<0.001
21	1	2022	RG_FOUEW	RG_FOUEW	Aluminum (Al)-Total	mg/L	0.0332
21	1	2022	RG_FOUEW	RG_FOUEW	Ammonia, Total (as N)	mg/L	<0.005
21	1	2022	RG_FOUEW	RG_FOUEW	Anion Sum	meq/L	13.5
21	1	2022	RG_FOUEW	RG_FOUEW	Antimony (Sb)-Dissolved	mg/L	<0.0001
21	1	2022	RG_FOUEW	RG_FOUEW	Antimony (Sb)-Total	mg/L	<0.0001
21	1	2022	RG_FOUEW	RG_FOUEW	Arsenic (As)-Dissolved	mg/L	<0.0001
21	1	2022	RG_FOUEW	RG_FOUEW	Arsenic (As)-Total	mg/L	0.00012
21	1	2022	RG_FOUEW	RG_FOUEW	Barium (Ba)-Dissolved	mg/L	0.107
21	1	2022	RG_FOUEW	RG_FOUEW	Barium (Ba)-Total	mg/L	0.107
21	1	2022	RG_FOUEW	RG_FOUEW	Beryllium (Be)-Dissolved	mg/L	<0.00002
21	1	2022	RG_FOUEW	RG_FOUEW	Beryllium (Be)-Total	mg/L	<0.00002
21	1	2022	RG_FOUEW	RG_FOUEW	Bismuth (Bi)-Dissolved	mg/L	<0.00005
21	1	2022	RG_FOUEW	RG_FOUEW	Bismuth (Bi)-Total	mg/L	<0.00005
21	1	2022	RG_FOUEW	RG_FOUEW	Boron (B)-Dissolved	mg/L	0.012
21	1	2022	RG_FOUEW	RG_FOUEW	Boron (B)-Total	mg/L	0.012
21	1	2022	RG_FOUEW	RG_FOUEW	Bromide (Br)	mg/L	<0.25
21	1	2022	RG_FOUEW	RG_FOUEW	Cadmium (Cd)-Dissolved	mg/L	0.0000333
21	1	2022	RG_FOUEW	RG_FOUEW	Cadmium (Cd)-Total	mg/L	0.0000478
21	1	2022	RG_FOUEW	RG_FOUEW	Calcium (Ca)-Dissolved	mg/L	155
21	1	2022	RG_FOUEW	RG_FOUEW	Calcium (Ca)-Total	mg/L	152
21	1	2022	RG_FOUEW	RG_FOUEW	Cation - Anion Difference	%	0.746
21	1	2022	RG_FOUEW	RG_FOUEW	Cation - Anion Ratio	%	98.5
21	1	2022	RG_FOUEW	RG_FOUEW	Cation Sum	meq/L	13.3
21	1	2022	RG_FOUEW	RG_FOUEW	Chloride (Cl)	mg/L	1.99
21	1	2022	RG_FOUEW	RG_FOUEW	Chromium (Cr)-Dissolved	mg/L	0.00011
21	1	2022	RG_FOUEW	RG_FOUEW	Chromium (Cr)-Total	mg/L	0.00021
21	1	2022	RG_FOUEW	RG_FOUEW	Cobalt (Co)-Dissolved	mg/L	<0.0001
21	1	2022	RG_FOUEW	RG_FOUEW	Cobalt (Co)-Total	mg/L	0.0001
21	1	2022	RG_FOUEW	RG_FOUEW	Conductivity	uS/cm	1150
21	1	2022	RG_FOUEW	RG_FOUEW	Conductivity, Field	uS/cm	708
21	1	2022	RG_FOUEW	RG_FOUEW	Copper (Cu)-Dissolved	mg/L	<0.0002
21	1	2022	RG_FOUEW	RG_FOUEW	Copper (Cu)-Total	mg/L	0.0016
21	1	2022	RG_FOUEW	RG_FOUEW	Dissolved Organic Carbon	mg/L	0.73
21	1	2022	RG_FOUEW	RG_FOUEW	Dissolved Oxygen, Field	%	82.1
21	1	2022	RG_FOUEW	RG_FOUEW	Dissolved Oxygen, Field	mg/L	11.48
21	1	2022	RG_FOUEW	RG_FOUEW	DMSeO - Dimethylselenoxide	mg/L	<0.00001
21	1	2022	RG_FOUEW	RG_FOUEW	Fluoride	mg/L	0.102
21	1	2022	RG_FOUEW	RG_FOUEW	Hardness - Dissolved (as CaCO3)	mg/L	657
21	1	2022	RG_FOUEW	RG_FOUEW	Iron (Fe)-Dissolved	mg/L	<0.01
21	1	2022	RG_FOUEW	RG_FOUEW	Iron (Fe)-Total	mg/L	0.088
21	1	2022	RG_FOUEW	RG_FOUEW	Lead (Pb)-Dissolved	mg/L	<0.00005
21	1	2022	RG_FOUEW	RG_FOUEW	Lead (Pb)-Total	mg/L	0.000126
21	1	2022	RG_FOUEW	RG_FOUEW	Lithium (Li)-Dissolved	mg/L	0.0412
21	1	2022	RG_FOUEW	RG_FOUEW	Lithium (Li)-Total	mg/L	0.0418
21	1	2022	RG_FOUEW	RG_FOUEW	Magnesium (Mg)-Dissolved	mg/L	65.6
21	1	2022	RG_FOUEW	RG_FOUEW	Magnesium (Mg)-Total	mg/L	66.1
21	1	2022	RG_FOUEW	RG_FOUEW	Manganese (Mn)-Dissolved	mg/L	0.00424
21	1	2022	RG_FOUEW	RG_FOUEW	Manganese (Mn)-Total	mg/L	0.00822
21	1	2022	RG_FOUEW	RG_FOUEW	Mercury (Hg)-Dissolved	mg/L	<0.000005
21	1	2022	RG_FOUEW	RG_FOUEW	Mercury (Hg)-Total	mg/L	<0.0000005
21	1	2022	RG_FOUEW	RG_FOUEW	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
21	1	2022	RG_FOUEW	RG_FOUEW	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
21	1	2022	RG_FOUEW	RG_FOUEW	Molybdenum (Mo)-Dissolved	mg/L	0.000832
21	1	2022	RG_FOUEW	RG_FOUEW	Molybdenum (Mo)-Total	mg/L	0.000795
21	1	2022	RG_FOUEW	RG_FOUEW	Nickel (Ni)-Dissolved	mg/L	<0.0005
21	1	2022	RG_FOUEW	RG_FOUEW	Nickel (Ni)-Total	mg/L	0.0009
21	1	2022	RG_FOUEW	RG_FOUEW	Nitrate (as N)	mg/L	25
21	1	2022	RG_FOUEW	RG_FOUEW	Nitrite (as N)	mg/L	<0.005
21	1	2022	RG_FOUEW	RG_FOUEW	ORP	mV	460
21	1	2022	RG_FOUEW	RG_FOUEW	Orthophosphate	mg/L	<0.001
21	1	2022	RG_FOUEW	RG_FOUEW	pH, Field	pH	8.15
21	1	2022	RG_FOUEW	RG_FOUEW	pH, Lab	pH	8.24
21	1	2022	RG_FOUEW	RG_FOUEW	Phosphorus (P)-Total	mg/L	0.0022
21	1	2022	RG_FOUEW	RG_FOUEW	Potassium (K)-Dissolved	mg/L	1.9
21	1	2022	RG_FOUEW	RG_FOUEW	Potassium (K)-Total	mg/L	1.81
21	1	2022	RG_FOUEW	RG_FOUEW	Se(IV) - Selenite	mg/L	0.000185
21	1	2022	RG_FOUEW	RG_FOUEW	Se(VI) - Selenate	mg/L	0.0827
21	1	2022	RG_FOUEW	RG_FOUEW	SeCN - Selenocyanate	mg/L	<0.00001
21	1	2022	RG_FOUEW	RG_FOUEW	Selenium (Se)-Dissolved	mg/L	0.0994
21	1	2022	RG_FOUEW	RG_FOUEW	Selenium (Se)-Total	mg/L	0.0931
21	1	2022	RG_FOUEW	RG_FOUEW	Selenium Unknown	mg/L	<0.00001
21	1	2022	RG_FOUEW	RG_FOUEW	Selenosulphate	mg/L	<0.00001
21	1	2022	RG_FOUEW	RG_FOUEW	SeMe - Selenomethionine	mg/L	<0.00001
21	1	2022	RG_FOUEW	RG_FOUEW	Silicon (Si)-Dissolved	mg/L	2.58
21	1	2022	RG_FOUEW	RG_FOUEW	Silicon (Si)-Total	mg/L	2.4
21	1	2022	RG_FOUEW	RG_FOUEW	Silver (Ag)-Dissolved	mg/L	<0.00001
21	1	2022	RG_FOUEW	RG_FOUEW	Silver (Ag)-Total	mg/L	<0.00001
21	1	2022	RG_FOUEW	RG_FOUEW	Sodium (Na)-Dissolved	mg/L	3.17
21	1	2022	RG_FOUEW	RG_FOUEW	Sodium (Na)-Total	mg/L	3.22
21	1	2022	RG_FOUEW	RG_FOUEW	Specific Conductivity	uS/cm	1290
21	1	2022	RG_FOUEW	RG_FOUEW	Strontium (Sr)-Dissolved	mg/L	0.187
21	1	2022	RG_FOUEW	RG_FOUEW	Strontium (Sr)-Total	mg/L	0.185
21	1	2022	RG_FOUEW	RG_FOUEW	Sulphate	mg/L	354
21	1	2022	RG_FOUEW	RG_FOUEW	Sulphur (S)-Dissolved	mg/L	132
21	1	2022	RG_FOUEW	RG_FOUEW	Sulphur (S)-Total	mg/L	118
21	1	2022	RG_FOUEW	RG_FOUEW	Temperature, Field	deg c	1.4
21	1	2022	RG_FOUEW	RG_FOUEW	Thallium (Tl)-Dissolved	mg/L	<0.00001
21	1	2022	RG_FOUEW	RG_FOUEW	Thallium (Tl)-Total	mg/L	<0.00001
21	1	2022	RG_FOUEW	RG_FOUEW	Tin (Sn)-Dissolved	mg/L	<0.0001
21	1	2022	RG_FOUEW	RG_FOUEW	Tin (Sn)-Total	mg/L	<0.0001
21	1	2022	RG_FOUEW	RG_FOUEW	Titanium (Ti)-Dissolved	mg/L	<0.0003
21	1	2022	RG_FOUEW	RG_FOUEW	Titanium (Ti)-Total	mg/L	0.00037
21	1	2022	RG_FOUEW	RG_FOUEW	Total Dissolved Solids	mg/L	859
21	1	2022	RG_FOUEW	RG_FOUEW	Total Kjeldahl Nitrogen	mg/L	<0.05
21	1	2022	RG_FOUEW	RG_FOUEW	Total Organic Carbon	mg/L	0.65
21	1	2022	RG_FOUEW	RG_FOUEW	Total Suspended Solids	mg/L	1.3
21	1	2022	RG_FOUEW	RG_FOUEW	Turbidity, Lab	NTU	0.26

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
21	1	2022	RG_FOU EW	RG_FOU EW	Uranium (U)-Dissolved	mg/L	0.00345
21	1	2022	RG_FOU EW	RG_FOU EW	Uranium (U)-Total	mg/L	0.00368
21	1	2022	RG_FOU EW	RG_FOU EW	Vanadium (V)-Dissolved	mg/L	<0.0005
21	1	2022	RG_FOU EW	RG_FOU EW	Vanadium (V)-Total	mg/L	<0.0005
21	1	2022	RG_FOU EW	RG_FOU EW	Zinc (Zn)-Dissolved	mg/L	0.0012
21	1	2022	RG_FOU EW	RG_FOU EW	Zinc (Zn)-Total	mg/L	<0.003
17	2	2022	RG_FOU EW	RG_FOU EW	Acidity (as CaCO3)	mg/L	<2
17	2	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Bicarbonate (as CaCO3)	mg/L	259
17	2	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Bicarbonate (as HCO3)	mg/L	316
17	2	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	2	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Carbonate (as CO3)	mg/L	<1
17	2	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	2	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Hydroxide (as OH)	mg/L	<1
17	2	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Total (as CaCO3)	mg/L	259
17	2	2022	RG_FOU EW	RG_FOU EW	Aluminum (Al)-Dissolved	mg/L	<0.001
17	2	2022	RG_FOU EW	RG_FOU EW	Aluminum (Al)-Total	mg/L	<0.003
17	2	2022	RG_FOU EW	RG_FOU EW	Ammonia, Total (as N)	mg/L	0.009
17	2	2022	RG_FOU EW	RG_FOU EW	Anion Sum	meq/L	15.4
17	2	2022	RG_FOU EW	RG_FOU EW	Antimony (Sb)-Dissolved	mg/L	<0.0001
17	2	2022	RG_FOU EW	RG_FOU EW	Antimony (Sb)-Total	mg/L	0.0001
17	2	2022	RG_FOU EW	RG_FOU EW	Arsenic (As)-Dissolved	mg/L	0.00011
17	2	2022	RG_FOU EW	RG_FOU EW	Arsenic (As)-Total	mg/L	<0.0001
17	2	2022	RG_FOU EW	RG_FOU EW	Barium (Ba)-Dissolved	mg/L	0.0986
17	2	2022	RG_FOU EW	RG_FOU EW	Barium (Ba)-Total	mg/L	0.118
17	2	2022	RG_FOU EW	RG_FOU EW	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	2	2022	RG_FOU EW	RG_FOU EW	Beryllium (Be)-Total	mg/L	<0.00002
17	2	2022	RG_FOU EW	RG_FOU EW	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	2	2022	RG_FOU EW	RG_FOU EW	Bismuth (Bi)-Total	mg/L	<0.00005
17	2	2022	RG_FOU EW	RG_FOU EW	Boron (B)-Dissolved	mg/L	0.01
17	2	2022	RG_FOU EW	RG_FOU EW	Boron (B)-Total	mg/L	0.012
17	2	2022	RG_FOU EW	RG_FOU EW	Bromide (Br)	mg/L	<0.25
17	2	2022	RG_FOU EW	RG_FOU EW	Cadmium (Cd)-Dissolved	mg/L	0.0000281
17	2	2022	RG_FOU EW	RG_FOU EW	Cadmium (Cd)-Total	mg/L	0.0000361
17	2	2022	RG_FOU EW	RG_FOU EW	Calcium (Ca)-Dissolved	mg/L	160
17	2	2022	RG_FOU EW	RG_FOU EW	Calcium (Ca)-Total	mg/L	164
17	2	2022	RG_FOU EW	RG_FOU EW	Cation - Anion Balance	%	92.2
17	2	2022	RG_FOU EW	RG_FOU EW	Cation Sum	meq/L	14.2
17	2	2022	RG_FOU EW	RG_FOU EW	Chloride (Cl)	mg/L	3.44
17	2	2022	RG_FOU EW	RG_FOU EW	Chromium (Cr)-Dissolved	mg/L	0.00011
17	2	2022	RG_FOU EW	RG_FOU EW	Chromium (Cr)-Total	mg/L	0.00018
17	2	2022	RG_FOU EW	RG_FOU EW	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	2	2022	RG_FOU EW	RG_FOU EW	Cobalt (Co)-Total	mg/L	<0.0001
17	2	2022	RG_FOU EW	RG_FOU EW	Conductivity	uS/cm	1200
17	2	2022	RG_FOU EW	RG_FOU EW	Conductivity, Field	uS/cm	769
17	2	2022	RG_FOU EW	RG_FOU EW	Copper (Cu)-Dissolved	mg/L	<0.0002
17	2	2022	RG_FOU EW	RG_FOU EW	Copper (Cu)-Total	mg/L	<0.0005
17	2	2022	RG_FOU EW	RG_FOU EW	Dissolved Organic Carbon	mg/L	<0.5
17	2	2022	RG_FOU EW	RG_FOU EW	Dissolved Oxygen, Field	%	82.1
17	2	2022	RG_FOU EW	RG_FOU EW	Dissolved Oxygen, Field	mg/L	11.52
17	2	2022	RG_FOU EW	RG_FOU EW	DMSeO - Dimethylselenoxide	mg/L	<0.00001
17	2	2022	RG_FOU EW	RG_FOU EW	Fluoride	mg/L	0.112
17	2	2022	RG_FOU EW	RG_FOU EW	Hardness - Dissolved (as CaCO3)	mg/L	702
17	2	2022	RG_FOU EW	RG_FOU EW	ion balance (APHA)	%	4.05
17	2	2022	RG_FOU EW	RG_FOU EW	Iron (Fe)-Dissolved	mg/L	<0.01
17	2	2022	RG_FOU EW	RG_FOU EW	Iron (Fe)-Total	mg/L	0.014
17	2	2022	RG_FOU EW	RG_FOU EW	Lead (Pb)-Dissolved	mg/L	<0.00005
17	2	2022	RG_FOU EW	RG_FOU EW	Lead (Pb)-Total	mg/L	<0.00005
17	2	2022	RG_FOU EW	RG_FOU EW	Lithium (Li)-Dissolved	mg/L	0.042
17	2	2022	RG_FOU EW	RG_FOU EW	Lithium (Li)-Total	mg/L	0.0473
17	2	2022	RG_FOU EW	RG_FOU EW	Magnesium (Mg)-Dissolved	mg/L	73.5
17	2	2022	RG_FOU EW	RG_FOU EW	Magnesium (Mg)-Total	mg/L	82.8
17	2	2022	RG_FOU EW	RG_FOU EW	Manganese (Mn)-Dissolved	mg/L	0.00396
17	2	2022	RG_FOU EW	RG_FOU EW	Manganese (Mn)-Total	mg/L	0.00455
17	2	2022	RG_FOU EW	RG_FOU EW	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	2	2022	RG_FOU EW	RG_FOU EW	Mercury (Hg)-Total	mg/L	<0.0000005
17	2	2022	RG_FOU EW	RG_FOU EW	MeSe(IV) - Methylseleninic Acid	mg/L	0.000014
17	2	2022	RG_FOU EW	RG_FOU EW	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
17	2	2022	RG_FOU EW	RG_FOU EW	Molybdenum (Mo)-Dissolved	mg/L	0.000849
17	2	2022	RG_FOU EW	RG_FOU EW	Molybdenum (Mo)-Total	mg/L	0.000912
17	2	2022	RG_FOU EW	RG_FOU EW	Nickel (Ni)-Dissolved	mg/L	0.00075
17	2	2022	RG_FOU EW	RG_FOU EW	Nickel (Ni)-Total	mg/L	0.00091
17	2	2022	RG_FOU EW	RG_FOU EW	Nitrate (as N)	mg/L	26.6
17	2	2022	RG_FOU EW	RG_FOU EW	Nitrite (as N)	mg/L	<0.005
17	2	2022	RG_FOU EW	RG_FOU EW	ORP	mV	471
17	2	2022	RG_FOU EW	RG_FOU EW	Orthophosphate	mg/L	<0.001
17	2	2022	RG_FOU EW	RG_FOU EW	pH, Field	pH	8.04
17	2	2022	RG_FOU EW	RG_FOU EW	pH, Lab	pH	8.22
17	2	2022	RG_FOU EW	RG_FOU EW	Phosphorus (P)-Total	mg/L	0.0026
17	2	2022	RG_FOU EW	RG_FOU EW	Potassium (K)-Dissolved	mg/L	1.87
17	2	2022	RG_FOU EW	RG_FOU EW	Potassium (K)-Total	mg/L	1.99
17	2	2022	RG_FOU EW	RG_FOU EW	Se(IV) - Selenite	mg/L	0.00026
17	2	2022	RG_FOU EW	RG_FOU EW	Se(VI) - Selenate	mg/L	0.115
17	2	2022	RG_FOU EW	RG_FOU EW	SeCN - Selenocyanate	mg/L	<0.00001
17	2	2022	RG_FOU EW	RG_FOU EW	Selenium (Se)-Dissolved	mg/L	0.09815
17	2	2022	RG_FOU EW	RG_FOU EW	Selenium (Se)-Total	mg/L	0.09865
17	2	2022	RG_FOU EW	RG_FOU EW	Selenium Unknown	mg/L	<0.00001
17	2	2022	RG_FOU EW	RG_FOU EW	Selenosulphate	mg/L	<0.00001
17	2	2022	RG_FOU EW	RG_FOU EW	SeMe - Selenomethionine	mg/L	<0.00001
17	2	2022	RG_FOU EW	RG_FOU EW	Silicon (Si)-Dissolved	mg/L	2.36
17	2	2022	RG_FOU EW	RG_FOU EW	Silicon (Si)-Total	mg/L	2.54
17	2	2022	RG_FOU EW	RG_FOU EW	Silver (Ag)-Dissolved	mg/L	<0.00001
17	2	2022	RG_FOU EW	RG_FOU EW	Silver (Ag)-Total	mg/L	<0.00001
17	2	2022	RG_FOU EW	RG_FOU EW	Sodium (Na)-Dissolved	mg/L	3.28
17	2	2022	RG_FOU EW	RG_FOU EW	Sodium (Na)-Total	mg/L	3.6
17	2	2022	RG_FOU EW	RG_FOU EW	Specific Conductivity	uS/cm	1404
17	2	2022	RG_FOU EW	RG_FOU EW	Strontium (Sr)-Dissolved	mg/L	0.2
17	2	2022	RG_FOU EW	RG_FOU EW	Strontium (Sr)-Total	mg/L	0.212
17	2	2022	RG_FOU EW	RG_FOU EW	Sulphate	mg/L	394
17	2	2022	RG_FOU EW	RG_FOU EW	Sulphur (S)-Dissolved	mg/L	123
17	2	2022	RG_FOU EW	RG_FOU EW	Sulphur (S)-Total	mg/L	142
17	2	2022	RG_FOU EW	RG_FOU EW	Temperature, Field	deg c	1.3
17	2	2022	RG_FOU EW	RG_FOU EW	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	2	2022	RG_FOU EW	RG_FOU EW	Thallium (Tl)-Total	mg/L	<0.00001
17	2	2022	RG_FOU EW	RG_FOU EW	Tin (Sn)-Dissolved	mg/L	<0.0001
17	2	2022	RG_FOU EW	RG_FOU EW	Tin (Sn)-Total	mg/L	<0.0001
17	2	2022	RG_FOU EW	RG_FOU EW	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	2	2022	RG_FOU EW	RG_FOU EW	Titanium (Ti)-Total	mg/L	<0.0003
17	2	2022	RG_FOU EW	RG_FOU EW	Total Dissolved Solids	mg/L	848
17	2	2022	RG_FOU EW	RG_FOU EW	Total Kjeldahl Nitrogen	mg/L	0.188
17	2	2022	RG_FOU EW	RG_FOU EW	Total Organic Carbon	mg/L	<0.5
17	2	2022	RG_FOU EW	RG_FOU EW	Total Suspended Solids	mg/L	<1

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	2	2022	RG_FOU EW	RG_FOU EW	Turbidity, Lab	NTU	0.1
17	2	2022	RG_FOU EW	RG_FOU EW	Uranium (U)-Dissolved	mg/L	0.00374
17	2	2022	RG_FOU EW	RG_FOU EW	Uranium (U)-Total	mg/L	0.00375
17	2	2022	RG_FOU EW	RG_FOU EW	Vanadium (V)-Dissolved	mg/L	<0.0005
17	2	2022	RG_FOU EW	RG_FOU EW	Vanadium (V)-Total	mg/L	<0.0005
17	2	2022	RG_FOU EW	RG_FOU EW	Zinc (Zn)-Dissolved	mg/L	<0.001
17	2	2022	RG_FOU EW	RG_FOU EW	Zinc (Zn)-Total	mg/L	<0.003
17	3	2022	RG_FOU EW	RG_FOU EW	Acidity (as CaCO3)	mg/L	<2
17	3	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Bicarbonate (as CaCO3)	mg/L	255
17	3	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Bicarbonate (as HCO3)	mg/L	311
17	3	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
17	3	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Carbonate (as CO3)	mg/L	<1
17	3	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
17	3	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Hydroxide (as OH)	mg/L	<1
17	3	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Total (as CaCO3)	mg/L	255
17	3	2022	RG_FOU EW	RG_FOU EW	Aluminum (Al)-Dissolved	mg/L	0.0011
17	3	2022	RG_FOU EW	RG_FOU EW	Aluminum (Al)-Total	mg/L	0.0033
17	3	2022	RG_FOU EW	RG_FOU EW	Ammonia, Total (as N)	mg/L	0.0174
17	3	2022	RG_FOU EW	RG_FOU EW	Anion Sum	meq/L	16.2
17	3	2022	RG_FOU EW	RG_FOU EW	Antimony (Sb)-Dissolved	mg/L	<0.0001
17	3	2022	RG_FOU EW	RG_FOU EW	Antimony (Sb)-Total	mg/L	0.0001
17	3	2022	RG_FOU EW	RG_FOU EW	Arsenic (As)-Dissolved	mg/L	<0.0001
17	3	2022	RG_FOU EW	RG_FOU EW	Arsenic (As)-Total	mg/L	<0.0001
17	3	2022	RG_FOU EW	RG_FOU EW	Barium (Ba)-Dissolved	mg/L	0.0953
17	3	2022	RG_FOU EW	RG_FOU EW	Barium (Ba)-Total	mg/L	0.1
17	3	2022	RG_FOU EW	RG_FOU EW	Beryllium (Be)-Dissolved	mg/L	<0.00002
17	3	2022	RG_FOU EW	RG_FOU EW	Beryllium (Be)-Total	mg/L	<0.00002
17	3	2022	RG_FOU EW	RG_FOU EW	Bismuth (Bi)-Dissolved	mg/L	<0.00005
17	3	2022	RG_FOU EW	RG_FOU EW	Bismuth (Bi)-Total	mg/L	<0.00005
17	3	2022	RG_FOU EW	RG_FOU EW	Boron (B)-Dissolved	mg/L	0.01
17	3	2022	RG_FOU EW	RG_FOU EW	Boron (B)-Total	mg/L	0.012
17	3	2022	RG_FOU EW	RG_FOU EW	Bromide (Br)	mg/L	<0.25
17	3	2022	RG_FOU EW	RG_FOU EW	Cadmium (Cd)-Dissolved	mg/L	0.0000212
17	3	2022	RG_FOU EW	RG_FOU EW	Cadmium (Cd)-Total	mg/L	0.0000305
17	3	2022	RG_FOU EW	RG_FOU EW	Calcium (Ca)-Dissolved	mg/L	177
17	3	2022	RG_FOU EW	RG_FOU EW	Calcium (Ca)-Total	mg/L	167
17	3	2022	RG_FOU EW	RG_FOU EW	Cation - Anion Balance	%	95.1
17	3	2022	RG_FOU EW	RG_FOU EW	Cation Sum	meq/L	15.4
17	3	2022	RG_FOU EW	RG_FOU EW	Chloride (Cl)	mg/L	3.79
17	3	2022	RG_FOU EW	RG_FOU EW	Chromium (Cr)-Dissolved	mg/L	<0.0001
17	3	2022	RG_FOU EW	RG_FOU EW	Chromium (Cr)-Total	mg/L	0.0003
17	3	2022	RG_FOU EW	RG_FOU EW	Cobalt (Co)-Dissolved	mg/L	<0.0001
17	3	2022	RG_FOU EW	RG_FOU EW	Cobalt (Co)-Total	mg/L	<0.0001
17	3	2022	RG_FOU EW	RG_FOU EW	Conductivity	uS/cm	1260
17	3	2022	RG_FOU EW	RG_FOU EW	Conductivity, Field	uS/cm	666
17	3	2022	RG_FOU EW	RG_FOU EW	Copper (Cu)-Dissolved	mg/L	<0.0002
17	3	2022	RG_FOU EW	RG_FOU EW	Copper (Cu)-Total	mg/L	<0.0005
17	3	2022	RG_FOU EW	RG_FOU EW	Dissolved Organic Carbon	mg/L	0.88
17	3	2022	RG_FOU EW	RG_FOU EW	Dissolved Oxygen, Field	%	81.5
17	3	2022	RG_FOU EW	RG_FOU EW	Dissolved Oxygen, Field	mg/L	11.38
17	3	2022	RG_FOU EW	RG_FOU EW	DMSeO - Dimethylselenoxide	mg/L	<0.00001
17	3	2022	RG_FOU EW	RG_FOU EW	Fluoride	mg/L	0.147
17	3	2022	RG_FOU EW	RG_FOU EW	Hardness - Dissolved (as CaCO3)	mg/L	759
17	3	2022	RG_FOU EW	RG_FOU EW	ion balance (APHA)	%	2.53
17	3	2022	RG_FOU EW	RG_FOU EW	Iron (Fe)-Dissolved	mg/L	<0.01
17	3	2022	RG_FOU EW	RG_FOU EW	Iron (Fe)-Total	mg/L	0.02
17	3	2022	RG_FOU EW	RG_FOU EW	Lead (Pb)-Dissolved	mg/L	<0.00005
17	3	2022	RG_FOU EW	RG_FOU EW	Lead (Pb)-Total	mg/L	<0.00005
17	3	2022	RG_FOU EW	RG_FOU EW	Lithium (Li)-Dissolved	mg/L	0.0447
17	3	2022	RG_FOU EW	RG_FOU EW	Lithium (Li)-Total	mg/L	0.0483
17	3	2022	RG_FOU EW	RG_FOU EW	Magnesium (Mg)-Dissolved	mg/L	77.1
17	3	2022	RG_FOU EW	RG_FOU EW	Magnesium (Mg)-Total	mg/L	82.8
17	3	2022	RG_FOU EW	RG_FOU EW	Manganese (Mn)-Dissolved	mg/L	0.00426
17	3	2022	RG_FOU EW	RG_FOU EW	Manganese (Mn)-Total	mg/L	0.00497
17	3	2022	RG_FOU EW	RG_FOU EW	Mercury (Hg)-Dissolved	mg/L	<0.000005
17	3	2022	RG_FOU EW	RG_FOU EW	Mercury (Hg)-Total	mg/L	<0.0000005
17	3	2022	RG_FOU EW	RG_FOU EW	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
17	3	2022	RG_FOU EW	RG_FOU EW	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
17	3	2022	RG_FOU EW	RG_FOU EW	Molybdenum (Mo)-Dissolved	mg/L	0.00104
17	3	2022	RG_FOU EW	RG_FOU EW	Molybdenum (Mo)-Total	mg/L	0.000979
17	3	2022	RG_FOU EW	RG_FOU EW	Nickel (Ni)-Dissolved	mg/L	0.00068
17	3	2022	RG_FOU EW	RG_FOU EW	Nickel (Ni)-Total	mg/L	0.00091
17	3	2022	RG_FOU EW	RG_FOU EW	Nitrate (as N)	mg/L	28.2
17	3	2022	RG_FOU EW	RG_FOU EW	Nitrite (as N)	mg/L	0.0073
17	3	2022	RG_FOU EW	RG_FOU EW	ORP	mV	457
17	3	2022	RG_FOU EW	RG_FOU EW	Orthophosphate	mg/L	<0.001
17	3	2022	RG_FOU EW	RG_FOU EW	pH, Field	pH	8.09
17	3	2022	RG_FOU EW	RG_FOU EW	pH, Lab	pH	8.27
17	3	2022	RG_FOU EW	RG_FOU EW	Phosphorus (P)-Total	mg/L	0.0021
17	3	2022	RG_FOU EW	RG_FOU EW	Potassium (K)-Dissolved	mg/L	1.88
17	3	2022	RG_FOU EW	RG_FOU EW	Potassium (K)-Total	mg/L	1.97
17	3	2022	RG_FOU EW	RG_FOU EW	Se(IV) - Selenite	mg/L	0.000191
17	3	2022	RG_FOU EW	RG_FOU EW	Se(VI) - Selenate	mg/L	0.0919
17	3	2022	RG_FOU EW	RG_FOU EW	SeCN - Selenocyanate	mg/L	<0.00001
17	3	2022	RG_FOU EW	RG_FOU EW	Selenium (Se)-Dissolved	mg/L	0.0976
17	3	2022	RG_FOU EW	RG_FOU EW	Selenium (Se)-Total	mg/L	0.09033333
17	3	2022	RG_FOU EW	RG_FOU EW	Selenium Unknown	mg/L	<0.00001
17	3	2022	RG_FOU EW	RG_FOU EW	Selenosulphate	mg/L	<0.00001
17	3	2022	RG_FOU EW	RG_FOU EW	SeMe - Selenomethionine	mg/L	<0.00001
17	3	2022	RG_FOU EW	RG_FOU EW	Silicon (Si)-Dissolved	mg/L	2.22
17	3	2022	RG_FOU EW	RG_FOU EW	Silicon (Si)-Total	mg/L	2.3
17	3	2022	RG_FOU EW	RG_FOU EW	Silver (Ag)-Dissolved	mg/L	<0.00001
17	3	2022	RG_FOU EW	RG_FOU EW	Silver (Ag)-Total	mg/L	<0.00001
17	3	2022	RG_FOU EW	RG_FOU EW	Sodium (Na)-Dissolved	mg/L	3.28
17	3	2022	RG_FOU EW	RG_FOU EW	Sodium (Na)-Total	mg/L	3.61
17	3	2022	RG_FOU EW	RG_FOU EW	Specific Conductivity	uS/cm	1208
17	3	2022	RG_FOU EW	RG_FOU EW	Strontium (Sr)-Dissolved	mg/L	0.216
17	3	2022	RG_FOU EW	RG_FOU EW	Strontium (Sr)-Total	mg/L	0.204
17	3	2022	RG_FOU EW	RG_FOU EW	Sulphate	mg/L	429
17	3	2022	RG_FOU EW	RG_FOU EW	Sulphur (S)-Dissolved	mg/L	144
17	3	2022	RG_FOU EW	RG_FOU EW	Sulphur (S)-Total	mg/L	142
17	3	2022	RG_FOU EW	RG_FOU EW	Temperature, Field	deg c	1.5
17	3	2022	RG_FOU EW	RG_FOU EW	Thallium (Tl)-Dissolved	mg/L	<0.00001
17	3	2022	RG_FOU EW	RG_FOU EW	Thallium (Tl)-Total	mg/L	<0.00001
17	3	2022	RG_FOU EW	RG_FOU EW	Tin (Sn)-Dissolved	mg/L	<0.0001
17	3	2022	RG_FOU EW	RG_FOU EW	Tin (Sn)-Total	mg/L	<0.0001
17	3	2022	RG_FOU EW	RG_FOU EW	Titanium (Ti)-Dissolved	mg/L	<0.0003
17	3	2022	RG_FOU EW	RG_FOU EW	Titanium (Ti)-Total	mg/L	<0.0003
17	3	2022	RG_FOU EW	RG_FOU EW	Total Dissolved Solids	mg/L	953
17	3	2022	RG_FOU EW	RG_FOU EW	Total Kjeldahl Nitrogen	mg/L	<0.05
17	3	2022	RG_FOU EW	RG_FOU EW	Total Organic Carbon	mg/L	<0.5

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
17	3	2022	RG_FOU EW	RG_FOU EW	Total Suspended Solids	mg/L	<1
17	3	2022	RG_FOU EW	RG_FOU EW	Turbidity, Lab	NTU	0.18
17	3	2022	RG_FOU EW	RG_FOU EW	Uranium (U)-Dissolved	mg/L	0.0039
17	3	2022	RG_FOU EW	RG_FOU EW	Uranium (U)-Total	mg/L	0.00401
17	3	2022	RG_FOU EW	RG_FOU EW	Vanadium (V)-Dissolved	mg/L	<0.0005
17	3	2022	RG_FOU EW	RG_FOU EW	Vanadium (V)-Total	mg/L	<0.0005
17	3	2022	RG_FOU EW	RG_FOU EW	Zinc (Zn)-Dissolved	mg/L	<0.001
17	3	2022	RG_FOU EW	RG_FOU EW	Zinc (Zn)-Total	mg/L	<0.003
10	9	2022	RG_FOU EW	RG_FOU EW	Conductivity, Field	uS/cm	570
10	9	2022	RG_FOU EW	RG_FOU EW	Dissolved Oxygen, Field	%	79.1
10	9	2022	RG_FOU EW	RG_FOU EW	Dissolved Oxygen, Field	mg/L	10.38
10	9	2022	RG_FOU EW	RG_FOU EW	DMSeO - Dimethylselenoxide	mg/L	<0.00001
10	9	2022	RG_FOU EW	RG_FOU EW	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
10	9	2022	RG_FOU EW	RG_FOU EW	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
10	9	2022	RG_FOU EW	RG_FOU EW	pH, Field	pH	8.196666667
10	9	2022	RG_FOU EW	RG_FOU EW	Se(IV) - Selenite	mg/L	0.000137
10	9	2022	RG_FOU EW	RG_FOU EW	Se(VI) - Selenate	mg/L	0.04885
10	9	2022	RG_FOU EW	RG_FOU EW	SeCN - Selenocyanate	mg/L	<0.00001
10	9	2022	RG_FOU EW	RG_FOU EW	Selenium Unknown	mg/L	<0.00001
10	9	2022	RG_FOU EW	RG_FOU EW	Selenosulphate	mg/L	<0.00001
10	9	2022	RG_FOU EW	RG_FOU EW	SeMe - Selenomethionine	mg/L	<0.00001
10	9	2022	RG_FOU EW	RG_FOU EW	Specific Conductivity	uS/cm	908
10	9	2022	RG_FOU EW	RG_FOU EW	Temperature, Field	deg c	5.9
18	9	2022	RG_FOU EW	RG_FOU EW	Acidity (as CaCO3)	mg/L	<2
18	9	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Bicarbonate (as CaCO3)	mg/L	241
18	9	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Bicarbonate (as HCO3)	mg/L	294
18	9	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Carbonate (as CaCO3)	mg/L	1.8
18	9	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Carbonate (as CO3)	mg/L	1.1
18	9	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
18	9	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Hydroxide (as OH)	mg/L	<1
18	9	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Total (as CaCO3)	mg/L	242
18	9	2022	RG_FOU EW	RG_FOU EW	Aluminum (Al)-Dissolved	mg/L	0.0011
18	9	2022	RG_FOU EW	RG_FOU EW	Aluminum (Al)-Total	mg/L	0.0057
18	9	2022	RG_FOU EW	RG_FOU EW	Ammonia, Total (as N)	mg/L	<0.005
18	9	2022	RG_FOU EW	RG_FOU EW	Anion Sum	meq/L	12.3
18	9	2022	RG_FOU EW	RG_FOU EW	Antimony (Sb)-Dissolved	mg/L	0.00012
18	9	2022	RG_FOU EW	RG_FOU EW	Antimony (Sb)-Total	mg/L	0.00011
18	9	2022	RG_FOU EW	RG_FOU EW	Arsenic (As)-Dissolved	mg/L	<0.0001
18	9	2022	RG_FOU EW	RG_FOU EW	Arsenic (As)-Total	mg/L	0.00014
18	9	2022	RG_FOU EW	RG_FOU EW	Barium (Ba)-Dissolved	mg/L	0.0949
18	9	2022	RG_FOU EW	RG_FOU EW	Barium (Ba)-Total	mg/L	0.0917
18	9	2022	RG_FOU EW	RG_FOU EW	Beryllium (Be)-Dissolved	mg/L	<0.00002
18	9	2022	RG_FOU EW	RG_FOU EW	Beryllium (Be)-Total	mg/L	<0.00002
18	9	2022	RG_FOU EW	RG_FOU EW	Bismuth (Bi)-Dissolved	mg/L	<0.00005
18	9	2022	RG_FOU EW	RG_FOU EW	Bismuth (Bi)-Total	mg/L	<0.00005
18	9	2022	RG_FOU EW	RG_FOU EW	Boron (B)-Dissolved	mg/L	0.014
18	9	2022	RG_FOU EW	RG_FOU EW	Boron (B)-Total	mg/L	0.012
18	9	2022	RG_FOU EW	RG_FOU EW	Bromide (Br)	mg/L	<0.25
18	9	2022	RG_FOU EW	RG_FOU EW	Cadmium (Cd)-Dissolved	mg/L	0.0000389
18	9	2022	RG_FOU EW	RG_FOU EW	Cadmium (Cd)-Total	mg/L	0.000035
18	9	2022	RG_FOU EW	RG_FOU EW	Calcium (Ca)-Dissolved	mg/L	138
18	9	2022	RG_FOU EW	RG_FOU EW	Calcium (Ca)-Total	mg/L	125
18	9	2022	RG_FOU EW	RG_FOU EW	Cation - Anion Balance	%	97.6
18	9	2022	RG_FOU EW	RG_FOU EW	Cation Sum	meq/L	12
18	9	2022	RG_FOU EW	RG_FOU EW	Chloride (Cl)	mg/L	3.8
18	9	2022	RG_FOU EW	RG_FOU EW	Chromium (Cr)-Dissolved	mg/L	0.00013
18	9	2022	RG_FOU EW	RG_FOU EW	Chromium (Cr)-Total	mg/L	0.00012
18	9	2022	RG_FOU EW	RG_FOU EW	Cobalt (Co)-Dissolved	mg/L	<0.0001
18	9	2022	RG_FOU EW	RG_FOU EW	Cobalt (Co)-Total	mg/L	<0.0001
18	9	2022	RG_FOU EW	RG_FOU EW	Conductivity	uS/cm	986
18	9	2022	RG_FOU EW	RG_FOU EW	Conductivity, Field	uS/cm	603
18	9	2022	RG_FOU EW	RG_FOU EW	Copper (Cu)-Dissolved	mg/L	0.00028
18	9	2022	RG_FOU EW	RG_FOU EW	Copper (Cu)-Total	mg/L	<0.0005
18	9	2022	RG_FOU EW	RG_FOU EW	Dissolved Organic Carbon	mg/L	0.6
18	9	2022	RG_FOU EW	RG_FOU EW	Dissolved Oxygen, Field	%	83
18	9	2022	RG_FOU EW	RG_FOU EW	Dissolved Oxygen, Field	mg/L	10.31
18	9	2022	RG_FOU EW	RG_FOU EW	DMSeO - Dimethylselenoxide	mg/L	<0.00001
18	9	2022	RG_FOU EW	RG_FOU EW	Fluoride	mg/L	0.155
18	9	2022	RG_FOU EW	RG_FOU EW	Hardness - Dissolved (as CaCO3)	mg/L	593
18	9	2022	RG_FOU EW	RG_FOU EW	ion balance (APHA)	%	1.23
18	9	2022	RG_FOU EW	RG_FOU EW	Iron (Fe)-Dissolved	mg/L	<0.01
18	9	2022	RG_FOU EW	RG_FOU EW	Iron (Fe)-Total	mg/L	0.011
18	9	2022	RG_FOU EW	RG_FOU EW	Lead (Pb)-Dissolved	mg/L	<0.00005
18	9	2022	RG_FOU EW	RG_FOU EW	Lead (Pb)-Total	mg/L	<0.00005
18	9	2022	RG_FOU EW	RG_FOU EW	Lithium (Li)-Dissolved	mg/L	0.0489
18	9	2022	RG_FOU EW	RG_FOU EW	Lithium (Li)-Total	mg/L	0.0401
18	9	2022	RG_FOU EW	RG_FOU EW	Magnesium (Mg)-Dissolved	mg/L	60.3
18	9	2022	RG_FOU EW	RG_FOU EW	Magnesium (Mg)-Total	mg/L	62.6
18	9	2022	RG_FOU EW	RG_FOU EW	Manganese (Mn)-Dissolved	mg/L	0.00319
18	9	2022	RG_FOU EW	RG_FOU EW	Manganese (Mn)-Total	mg/L	0.00339
18	9	2022	RG_FOU EW	RG_FOU EW	Mercury (Hg)-Dissolved	mg/L	<0.000005
18	9	2022	RG_FOU EW	RG_FOU EW	Mercury (Hg)-Total	mg/L	<0.000005
18	9	2022	RG_FOU EW	RG_FOU EW	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
18	9	2022	RG_FOU EW	RG_FOU EW	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
18	9	2022	RG_FOU EW	RG_FOU EW	Molybdenum (Mo)-Dissolved	mg/L	0.00147
18	9	2022	RG_FOU EW	RG_FOU EW	Molybdenum (Mo)-Total	mg/L	0.00143
18	9	2022	RG_FOU EW	RG_FOU EW	Nickel (Ni)-Dissolved	mg/L	0.00117
18	9	2022	RG_FOU EW	RG_FOU EW	Nickel (Ni)-Total	mg/L	0.00123
18	9	2022	RG_FOU EW	RG_FOU EW	Nitrate (as N)	mg/L	19
18	9	2022	RG_FOU EW	RG_FOU EW	Nitrite (as N)	mg/L	0.007
18	9	2022	RG_FOU EW	RG_FOU EW	ORP	mV	296
18	9	2022	RG_FOU EW	RG_FOU EW	Orthophosphate	mg/L	<0.001
18	9	2022	RG_FOU EW	RG_FOU EW	pH, Field	pH	8.22
18	9	2022	RG_FOU EW	RG_FOU EW	pH, Lab	pH	8.28
18	9	2022	RG_FOU EW	RG_FOU EW	Phosphorus (P)-Total	mg/L	<0.002
18	9	2022	RG_FOU EW	RG_FOU EW	Potassium (K)-Dissolved	mg/L	1.92
18	9	2022	RG_FOU EW	RG_FOU EW	Potassium (K)-Total	mg/L	1.95
18	9	2022	RG_FOU EW	RG_FOU EW	Se(IV) - Selenite	mg/L	0.000137
18	9	2022	RG_FOU EW	RG_FOU EW	Se(VI) - Selenate	mg/L	0.04885
18	9	2022	RG_FOU EW	RG_FOU EW	SeCN - Selenocyanate	mg/L	<0.00001
18	9	2022	RG_FOU EW	RG_FOU EW	Selenium (Se)-Dissolved	mg/L	0.08485
18	9	2022	RG_FOU EW	RG_FOU EW	Selenium (Se)-Total	mg/L	0.0671
18	9	2022	RG_FOU EW	RG_FOU EW	Selenium Unknown	mg/L	<0.00001
18	9	2022	RG_FOU EW	RG_FOU EW	Selenosulphate	mg/L	<0.00001
18	9	2022	RG_FOU EW	RG_FOU EW	SeMe - Selenomethionine	mg/L	<0.00001
18	9	2022	RG_FOU EW	RG_FOU EW	Silicon (Si)-Dissolved	mg/L	2.59
18	9	2022	RG_FOU EW	RG_FOU EW	Silicon (Si)-Total	mg/L	2.01
18	9	2022	RG_FOU EW	RG_FOU EW	Silver (Ag)-Dissolved	mg/L	<0.00001
18	9	2022	RG_FOU EW	RG_FOU EW	Silver (Ag)-Total	mg/L	<0.00001
18	9	2022	RG_FOU EW	RG_FOU EW	Sodium (Na)-Dissolved	mg/L	3.39
18	9	2022	RG_FOU EW	RG_FOU EW	Sodium (Na)-Total	mg/L	3.46

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
18	9	2022	RG_FOU EW	RG_FOU EW	Specific Conductivity	uS/cm	946
18	9	2022	RG_FOU EW	RG_FOU EW	Strontium (Sr)-Dissolved	mg/L	0.176
18	9	2022	RG_FOU EW	RG_FOU EW	Strontium (Sr)-Total	mg/L	0.162
18	9	2022	RG_FOU EW	RG_FOU EW	Sulphate	mg/L	286
18	9	2022	RG_FOU EW	RG_FOU EW	Sulphur (S)-Dissolved	mg/L	120
18	9	2022	RG_FOU EW	RG_FOU EW	Sulphur (S)-Total	mg/L	101
18	9	2022	RG_FOU EW	RG_FOU EW	Temperature, Field	deg c	6
18	9	2022	RG_FOU EW	RG_FOU EW	Thallium (Tl)-Dissolved	mg/L	<0.00001
18	9	2022	RG_FOU EW	RG_FOU EW	Thallium (Tl)-Total	mg/L	<0.00001
18	9	2022	RG_FOU EW	RG_FOU EW	Tin (Sn)-Dissolved	mg/L	<0.0001
18	9	2022	RG_FOU EW	RG_FOU EW	Tin (Sn)-Total	mg/L	<0.0001
18	9	2022	RG_FOU EW	RG_FOU EW	Titanium (Ti)-Dissolved	mg/L	<0.0003
18	9	2022	RG_FOU EW	RG_FOU EW	Titanium (Ti)-Total	mg/L	<0.0003
18	9	2022	RG_FOU EW	RG_FOU EW	Total Dissolved Solids	mg/L	782
18	9	2022	RG_FOU EW	RG_FOU EW	Total Kjeldahl Nitrogen	mg/L	0.601
18	9	2022	RG_FOU EW	RG_FOU EW	Total Organic Carbon	mg/L	<0.5
18	9	2022	RG_FOU EW	RG_FOU EW	Total Suspended Solids	mg/L	<1
18	9	2022	RG_FOU EW	RG_FOU EW	Turbidity, Lab	NTU	0.13
18	9	2022	RG_FOU EW	RG_FOU EW	Uranium (U)-Dissolved	mg/L	0.00339
18	9	2022	RG_FOU EW	RG_FOU EW	Uranium (U)-Total	mg/L	0.00304
18	9	2022	RG_FOU EW	RG_FOU EW	Vanadium (V)-Dissolved	mg/L	<0.0005
18	9	2022	RG_FOU EW	RG_FOU EW	Vanadium (V)-Total	mg/L	<0.0005
18	9	2022	RG_FOU EW	RG_FOU EW	Zinc (Zn)-Dissolved	mg/L	0.0014
18	9	2022	RG_FOU EW	RG_FOU EW	Zinc (Zn)-Total	mg/L	<0.003
6	12	2022	RG_FOU EW	RG_FOU EW	Acidity (as CaCO3)	mg/L	<2
6	12	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Bicarbonate (as CaCO3)	mg/L	217
6	12	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Bicarbonate (as HCO3)	mg/L	264
6	12	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Carbonate (as CaCO3)	mg/L	14.2
6	12	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Carbonate (as CO3)	mg/L	8.5
6	12	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	12	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Hydroxide (as OH)	mg/L	<1
6	12	2022	RG_FOU EW	RG_FOU EW	Alkalinity, Total (as CaCO3)	mg/L	231
6	12	2022	RG_FOU EW	RG_FOU EW	Aluminum (Al)-Dissolved	mg/L	<0.001
6	12	2022	RG_FOU EW	RG_FOU EW	Aluminum (Al)-Total	mg/L	0.0042
6	12	2022	RG_FOU EW	RG_FOU EW	Ammonia, Total (as N)	mg/L	<0.005
6	12	2022	RG_FOU EW	RG_FOU EW	Anion Sum	meq/L	13.6
6	12	2022	RG_FOU EW	RG_FOU EW	Antimony (Sb)-Dissolved	mg/L	<0.0001
6	12	2022	RG_FOU EW	RG_FOU EW	Antimony (Sb)-Total	mg/L	<0.0001
6	12	2022	RG_FOU EW	RG_FOU EW	Arsenic (As)-Dissolved	mg/L	<0.0001
6	12	2022	RG_FOU EW	RG_FOU EW	Arsenic (As)-Total	mg/L	<0.0001
6	12	2022	RG_FOU EW	RG_FOU EW	Barium (Ba)-Dissolved	mg/L	0.11
6	12	2022	RG_FOU EW	RG_FOU EW	Barium (Ba)-Total	mg/L	0.102
6	12	2022	RG_FOU EW	RG_FOU EW	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	12	2022	RG_FOU EW	RG_FOU EW	Beryllium (Be)-Total	mg/L	<0.00002
6	12	2022	RG_FOU EW	RG_FOU EW	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	12	2022	RG_FOU EW	RG_FOU EW	Bismuth (Bi)-Total	mg/L	<0.00005
6	12	2022	RG_FOU EW	RG_FOU EW	Boron (B)-Dissolved	mg/L	<0.01
6	12	2022	RG_FOU EW	RG_FOU EW	Boron (B)-Total	mg/L	<0.01
6	12	2022	RG_FOU EW	RG_FOU EW	Bromide (Br)	mg/L	<0.25
6	12	2022	RG_FOU EW	RG_FOU EW	Cadmium (Cd)-Dissolved	mg/L	0.0000332
6	12	2022	RG_FOU EW	RG_FOU EW	Cadmium (Cd)-Total	mg/L	0.000027
6	12	2022	RG_FOU EW	RG_FOU EW	Calcium (Ca)-Dissolved	mg/L	154
6	12	2022	RG_FOU EW	RG_FOU EW	Calcium (Ca)-Total	mg/L	145
6	12	2022	RG_FOU EW	RG_FOU EW	Cation - Anion Balance	%	103
6	12	2022	RG_FOU EW	RG_FOU EW	Cation Sum	meq/L	14
6	12	2022	RG_FOU EW	RG_FOU EW	Chloride (Cl)	mg/L	7.24
6	12	2022	RG_FOU EW	RG_FOU EW	Chromium (Cr)-Dissolved	mg/L	0.00014
6	12	2022	RG_FOU EW	RG_FOU EW	Chromium (Cr)-Total	mg/L	0.00015
6	12	2022	RG_FOU EW	RG_FOU EW	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	12	2022	RG_FOU EW	RG_FOU EW	Cobalt (Co)-Total	mg/L	<0.0001
6	12	2022	RG_FOU EW	RG_FOU EW	Conductivity	uS/cm	1100
6	12	2022	RG_FOU EW	RG_FOU EW	Conductivity, Field	uS/cm	690
6	12	2022	RG_FOU EW	RG_FOU EW	Copper (Cu)-Dissolved	mg/L	<0.0002
6	12	2022	RG_FOU EW	RG_FOU EW	Copper (Cu)-Total	mg/L	<0.0005
6	12	2022	RG_FOU EW	RG_FOU EW	Dissolved Organic Carbon	mg/L	<0.5
6	12	2022	RG_FOU EW	RG_FOU EW	Dissolved Oxygen, Field	%	78.4
6	12	2022	RG_FOU EW	RG_FOU EW	Dissolved Oxygen, Field	mg/L	11.33
6	12	2022	RG_FOU EW	RG_FOU EW	DMS ₂ SeO - Dimethylselenoxide	mg/L	<0.00001
6	12	2022	RG_FOU EW	RG_FOU EW	Fluoride	mg/L	0.14
6	12	2022	RG_FOU EW	RG_FOU EW	Hardness - Dissolved (as CaCO3)	mg/L	689
6	12	2022	RG_FOU EW	RG_FOU EW	ion balance (APHA)	%	1.45
6	12	2022	RG_FOU EW	RG_FOU EW	Iron (Fe)-Dissolved	mg/L	<0.01
6	12	2022	RG_FOU EW	RG_FOU EW	Iron (Fe)-Total	mg/L	0.017
6	12	2022	RG_FOU EW	RG_FOU EW	Lead (Pb)-Dissolved	mg/L	<0.00005
6	12	2022	RG_FOU EW	RG_FOU EW	Lead (Pb)-Total	mg/L	<0.00005
6	12	2022	RG_FOU EW	RG_FOU EW	Lithium (Li)-Dissolved	mg/L	0.0413
6	12	2022	RG_FOU EW	RG_FOU EW	Lithium (Li)-Total	mg/L	0.0428
6	12	2022	RG_FOU EW	RG_FOU EW	Magnesium (Mg)-Dissolved	mg/L	73.9
6	12	2022	RG_FOU EW	RG_FOU EW	Magnesium (Mg)-Total	mg/L	74.8
6	12	2022	RG_FOU EW	RG_FOU EW	Manganese (Mn)-Dissolved	mg/L	0.00352
6	12	2022	RG_FOU EW	RG_FOU EW	Manganese (Mn)-Total	mg/L	0.00492
6	12	2022	RG_FOU EW	RG_FOU EW	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	12	2022	RG_FOU EW	RG_FOU EW	Mercury (Hg)-Total	mg/L	<0.000005
6	12	2022	RG_FOU EW	RG_FOU EW	MeSe(IV) - Methylseleninic Acid	mg/L	<0.00001
6	12	2022	RG_FOU EW	RG_FOU EW	MeSe(VI) - Methaneselenonic Acid	mg/L	<0.00001
6	12	2022	RG_FOU EW	RG_FOU EW	Molybdenum (Mo)-Dissolved	mg/L	0.000724
6	12	2022	RG_FOU EW	RG_FOU EW	Molybdenum (Mo)-Total	mg/L	0.000676
6	12	2022	RG_FOU EW	RG_FOU EW	Nickel (Ni)-Dissolved	mg/L	0.00056
6	12	2022	RG_FOU EW	RG_FOU EW	Nickel (Ni)-Total	mg/L	0.00052
6	12	2022	RG_FOU EW	RG_FOU EW	Nitrate (as N)	mg/L	21.6
6	12	2022	RG_FOU EW	RG_FOU EW	Nitrite (as N)	mg/L	0.0052
6	12	2022	RG_FOU EW	RG_FOU EW	ORP	mV	414
6	12	2022	RG_FOU EW	RG_FOU EW	Orthophosphate	mg/L	0.0021
6	12	2022	RG_FOU EW	RG_FOU EW	pH, Field	pH	7.91
6	12	2022	RG_FOU EW	RG_FOU EW	pH, Lab	pH	8.36
6	12	2022	RG_FOU EW	RG_FOU EW	Phosphorus (P)-Total	mg/L	0.0039
6	12	2022	RG_FOU EW	RG_FOU EW	Potassium (K)-Dissolved	mg/L	1.88
6	12	2022	RG_FOU EW	RG_FOU EW	Potassium (K)-Total	mg/L	1.87
6	12	2022	RG_FOU EW	RG_FOU EW	Se(IV) - Selenite	mg/L	0.000156
6	12	2022	RG_FOU EW	RG_FOU EW	Se(VI) - Selenate	mg/L	0.073
6	12	2022	RG_FOU EW	RG_FOU EW	SeCN - Selenocyanate	mg/L	<0.00001
6	12	2022	RG_FOU EW	RG_FOU EW	Selenium (Se)-Dissolved	mg/L	0.0791
6	12	2022	RG_FOU EW	RG_FOU EW	Selenium (Se)-Total	mg/L	0.07385
6	12	2022	RG_FOU EW	RG_FOU EW	Selenium Unknown	mg/L	<0.00001
6	12	2022	RG_FOU EW	RG_FOU EW	Selenosulphate	mg/L	<0.00001
6	12	2022	RG_FOU EW	RG_FOU EW	SeMe - Selenomethionine	mg/L	<0.00001
6	12	2022	RG_FOU EW	RG_FOU EW	Silicon (Si)-Dissolved	mg/L	2.48
6	12	2022	RG_FOU EW	RG_FOU EW	Silicon (Si)-Total	mg/L	2.5
6	12	2022	RG_FOU EW	RG_FOU EW	Silver (Ag)-Dissolved	mg/L	<0.00001
6	12	2022	RG_FOU EW	RG_FOU EW	Silver (Ag)-Total	mg/L	<0.00001
6	12	2022	RG_FOU EW	RG_FOU EW	Sodium (Na)-Dissolved	mg/L	4.15

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	12	2022	RG_FOU EW	RG_FOU EW	Sodium (Na)-Total	mg/L	4.21
6	12	2022	RG_FOU EW	RG_FOU EW	Specific Conductivity	uS/cm	1308
6	12	2022	RG_FOU EW	RG_FOU EW	Strontium (Sr)-Dissolved	mg/L	0.184
6	12	2022	RG_FOU EW	RG_FOU EW	Strontium (Sr)-Total	mg/L	0.172
6	12	2022	RG_FOU EW	RG_FOU EW	Sulphate	mg/L	349
6	12	2022	RG_FOU EW	RG_FOU EW	Sulphur (S)-Dissolved	mg/L	122
6	12	2022	RG_FOU EW	RG_FOU EW	Sulphur (S)-Total	mg/L	121
6	12	2022	RG_FOU EW	RG_FOU EW	Temperature, Field	deg c	0.3
6	12	2022	RG_FOU EW	RG_FOU EW	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	12	2022	RG_FOU EW	RG_FOU EW	Thallium (Tl)-Total	mg/L	<0.00001
6	12	2022	RG_FOU EW	RG_FOU EW	Tin (Sn)-Dissolved	mg/L	<0.0001
6	12	2022	RG_FOU EW	RG_FOU EW	Tin (Sn)-Total	mg/L	<0.0001
6	12	2022	RG_FOU EW	RG_FOU EW	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	12	2022	RG_FOU EW	RG_FOU EW	Titanium (Ti)-Total	mg/L	<0.0003
6	12	2022	RG_FOU EW	RG_FOU EW	Total Dissolved Solids	mg/L	760
6	12	2022	RG_FOU EW	RG_FOU EW	Total Kjeldahl Nitrogen	mg/L	1.12
6	12	2022	RG_FOU EW	RG_FOU EW	Total Organic Carbon	mg/L	<0.5
6	12	2022	RG_FOU EW	RG_FOU EW	Total Suspended Solids	mg/L	1
6	12	2022	RG_FOU EW	RG_FOU EW	Turbidity, Lab	NTU	0.26
6	12	2022	RG_FOU EW	RG_FOU EW	Uranium (U)-Dissolved	mg/L	0.0036
6	12	2022	RG_FOU EW	RG_FOU EW	Uranium (U)-Total	mg/L	0.00345
6	12	2022	RG_FOU EW	RG_FOU EW	Vanadium (V)-Dissolved	mg/L	<0.0005
6	12	2022	RG_FOU EW	RG_FOU EW	Vanadium (V)-Total	mg/L	<0.0005
6	12	2022	RG_FOU EW	RG_FOU EW	Zinc (Zn)-Dissolved	mg/L	<0.001
6	12	2022	RG_FOU EW	RG_FOU EW	Zinc (Zn)-Total	mg/L	<0.003
6	1	2022	FR_FR5	FR_FR5	Acidity (as CaCO3)	mg/L	2.8
6	1	2022	FR_FR5	FR_FR5	Alkalinity, Bicarbonate (as CaCO3)	mg/L	235
6	1	2022	FR_FR5	FR_FR5	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
6	1	2022	FR_FR5	FR_FR5	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	1	2022	FR_FR5	FR_FR5	Alkalinity, Total (as CaCO3)	mg/L	235
6	1	2022	FR_FR5	FR_FR5	Aluminum (Al)-Dissolved	mg/L	<0.001
6	1	2022	FR_FR5	FR_FR5	Aluminum (Al)-Total	mg/L	0.0041
6	1	2022	FR_FR5	FR_FR5	Ammonia, Total (as N)	mg/L	0.0132
6	1	2022	FR_FR5	FR_FR5	Antimony (Sb)-Dissolved	mg/L	<0.0001
6	1	2022	FR_FR5	FR_FR5	Antimony (Sb)-Total	mg/L	<0.0001
6	1	2022	FR_FR5	FR_FR5	Arsenic (As)-Dissolved	mg/L	<0.0001
6	1	2022	FR_FR5	FR_FR5	Arsenic (As)-Total	mg/L	0.00014
6	1	2022	FR_FR5	FR_FR5	Barium (Ba)-Dissolved	mg/L	0.116
6	1	2022	FR_FR5	FR_FR5	Barium (Ba)-Total	mg/L	0.119
6	1	2022	FR_FR5	FR_FR5	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	1	2022	FR_FR5	FR_FR5	Beryllium (Be)-Total	mg/L	<0.00002
6	1	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	1	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Total	mg/L	<0.00005
6	1	2022	FR_FR5	FR_FR5	Boron (B)-Dissolved	mg/L	0.01
6	1	2022	FR_FR5	FR_FR5	Boron (B)-Total	mg/L	0.012
6	1	2022	FR_FR5	FR_FR5	Bromide (Br)	mg/L	<0.25
6	1	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Dissolved	mg/L	0.0000255
6	1	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Total	mg/L	0.0000304
6	1	2022	FR_FR5	FR_FR5	Calcium (Ca)-Dissolved	mg/L	132
6	1	2022	FR_FR5	FR_FR5	Calcium (Ca)-Total	mg/L	139
6	1	2022	FR_FR5	FR_FR5	Chloride (Cl)	mg/L	2.37
6	1	2022	FR_FR5	FR_FR5	Chromium (Cr)-Dissolved	mg/L	0.00011
6	1	2022	FR_FR5	FR_FR5	Chromium (Cr)-Total	mg/L	0.00015
6	1	2022	FR_FR5	FR_FR5	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	1	2022	FR_FR5	FR_FR5	Cobalt (Co)-Total	mg/L	<0.0001
6	1	2022	FR_FR5	FR_FR5	Conductivity	uS/cm	1010
6	1	2022	FR_FR5	FR_FR5	Conductivity, Field	uS/cm	1121
6	1	2022	FR_FR5	FR_FR5	Copper (Cu)-Dissolved	mg/L	<0.0002
6	1	2022	FR_FR5	FR_FR5	Copper (Cu)-Total	mg/L	<0.0005
6	1	2022	FR_FR5	FR_FR5	Dissolved Organic Carbon	mg/L	0.77
6	1	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	%	73.8
6	1	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	mg/L	10.75
6	1	2022	FR_FR5	FR_FR5	Fluoride	mg/L	0.123
6	1	2022	FR_FR5	FR_FR5	Hardness - Dissolved (as CaCO3)	mg/L	583
6	1	2022	FR_FR5	FR_FR5	Iron (Fe)-Dissolved	mg/L	<0.01
6	1	2022	FR_FR5	FR_FR5	Iron (Fe)-Total	mg/L	0.011
6	1	2022	FR_FR5	FR_FR5	Lead (Pb)-Dissolved	mg/L	<0.00005
6	1	2022	FR_FR5	FR_FR5	Lead (Pb)-Total	mg/L	<0.00005
6	1	2022	FR_FR5	FR_FR5	Lithium (Li)-Dissolved	mg/L	0.0377
6	1	2022	FR_FR5	FR_FR5	Lithium (Li)-Total	mg/L	0.037
6	1	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Dissolved	mg/L	61.5
6	1	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Total	mg/L	62.8
6	1	2022	FR_FR5	FR_FR5	Manganese (Mn)-Dissolved	mg/L	0.00158
6	1	2022	FR_FR5	FR_FR5	Manganese (Mn)-Total	mg/L	0.00184
6	1	2022	FR_FR5	FR_FR5	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	1	2022	FR_FR5	FR_FR5	Mercury (Hg)-Total	mg/L	<0.0000005
6	1	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Dissolved	mg/L	0.000739
6	1	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Total	mg/L	0.000736
6	1	2022	FR_FR5	FR_FR5	Nickel (Ni)-Dissolved	mg/L	0.00052
6	1	2022	FR_FR5	FR_FR5	Nickel (Ni)-Total	mg/L	0.00056
6	1	2022	FR_FR5	FR_FR5	Nitrate (as N)	mg/L	21.1
6	1	2022	FR_FR5	FR_FR5	Nitrite (as N)	mg/L	<0.005
6	1	2022	FR_FR5	FR_FR5	ORP	mV	443
6	1	2022	FR_FR5	FR_FR5	ORP, Field	mV	138
6	1	2022	FR_FR5	FR_FR5	Orthophosphate	mg/L	0.0012
6	1	2022	FR_FR5	FR_FR5	pH, Field	pH	7.99
6	1	2022	FR_FR5	FR_FR5	pH, Lab	pH	8
6	1	2022	FR_FR5	FR_FR5	Phosphorus (P)-Total	mg/L	<0.002
6	1	2022	FR_FR5	FR_FR5	Potassium (K)-Dissolved	mg/L	1.7
6	1	2022	FR_FR5	FR_FR5	Potassium (K)-Total	mg/L	1.71
6	1	2022	FR_FR5	FR_FR5	Selenium (Se)-Dissolved	mg/L	0.0908
6	1	2022	FR_FR5	FR_FR5	Selenium (Se)-Total	mg/L	0.0761
6	1	2022	FR_FR5	FR_FR5	Silicon (Si)-Dissolved	mg/L	2.58
6	1	2022	FR_FR5	FR_FR5	Silicon (Si)-Total	mg/L	2.59
6	1	2022	FR_FR5	FR_FR5	Silver (Ag)-Dissolved	mg/L	<0.00001
6	1	2022	FR_FR5	FR_FR5	Silver (Ag)-Total	mg/L	<0.00001
6	1	2022	FR_FR5	FR_FR5	Sodium (Na)-Dissolved	mg/L	3.02
6	1	2022	FR_FR5	FR_FR5	Sodium (Na)-Total	mg/L	3.17
6	1	2022	FR_FR5	FR_FR5	Strontium (Sr)-Dissolved	mg/L	0.172
6	1	2022	FR_FR5	FR_FR5	Strontium (Sr)-Total	mg/L	0.172
6	1	2022	FR_FR5	FR_FR5	Sulphate	mg/L	292
6	1	2022	FR_FR5	FR_FR5	Temperature, Field	deg c	0
6	1	2022	FR_FR5	FR_FR5	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	1	2022	FR_FR5	FR_FR5	Thallium (Tl)-Total	mg/L	<0.00001
6	1	2022	FR_FR5	FR_FR5	Tin (Sn)-Dissolved	mg/L	<0.0001
6	1	2022	FR_FR5	FR_FR5	Tin (Sn)-Total	mg/L	<0.0001
6	1	2022	FR_FR5	FR_FR5	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	1	2022	FR_FR5	FR_FR5	Titanium (Ti)-Total	mg/L	<0.0003
6	1	2022	FR_FR5	FR_FR5	Total Dissolved Solids	mg/L	693
6	1	2022	FR_FR5	FR_FR5	Total Kjeldahl Nitrogen	mg/L	0.349
6	1	2022	FR_FR5	FR_FR5	Total Organic Carbon	mg/L	<0.5

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	1	2022	FR_FR5	FR_FR5	Total Suspended Solids	mg/L	3.4
6	1	2022	FR_FR5	FR_FR5	Turbidity, Lab	NTU	0.14
6	1	2022	FR_FR5	FR_FR5	Uranium (U)-Dissolved	mg/L	0.00323
6	1	2022	FR_FR5	FR_FR5	Uranium (U)-Total	mg/L	0.00344
6	1	2022	FR_FR5	FR_FR5	Vanadium (V)-Dissolved	mg/L	<0.0005
6	1	2022	FR_FR5	FR_FR5	Vanadium (V)-Total	mg/L	0.0005
6	1	2022	FR_FR5	FR_FR5	Zinc (Zn)-Dissolved	mg/L	<0.001
6	1	2022	FR_FR5	FR_FR5	Zinc (Zn)-Total	mg/L	<0.003
9	2	2022	FR_FR5	FR_FR5	Acidity (as CaCO3)	mg/L	<2
9	2	2022	FR_FR5	FR_FR5	Alkalinity, Bicarbonate (as CaCO3)	mg/L	238
9	2	2022	FR_FR5	FR_FR5	Alkalinity, Carbonate (as CaCO3)	mg/L	3
9	2	2022	FR_FR5	FR_FR5	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
9	2	2022	FR_FR5	FR_FR5	Alkalinity, Total (as CaCO3)	mg/L	241
9	2	2022	FR_FR5	FR_FR5	Aluminum (Al)-Dissolved	mg/L	<0.001
9	2	2022	FR_FR5	FR_FR5	Aluminum (Al)-Total	mg/L	0.004
9	2	2022	FR_FR5	FR_FR5	Ammonia, Total (as N)	mg/L	<0.005
9	2	2022	FR_FR5	FR_FR5	Antimony (Sb)-Dissolved	mg/L	<0.0001
9	2	2022	FR_FR5	FR_FR5	Antimony (Sb)-Total	mg/L	<0.0001
9	2	2022	FR_FR5	FR_FR5	Arsenic (As)-Dissolved	mg/L	<0.0001
9	2	2022	FR_FR5	FR_FR5	Arsenic (As)-Total	mg/L	<0.0001
9	2	2022	FR_FR5	FR_FR5	Barium (Ba)-Dissolved	mg/L	0.111
9	2	2022	FR_FR5	FR_FR5	Barium (Ba)-Total	mg/L	0.115
9	2	2022	FR_FR5	FR_FR5	Beryllium (Be)-Dissolved	mg/L	<0.00002
9	2	2022	FR_FR5	FR_FR5	Beryllium (Be)-Total	mg/L	<0.00002
9	2	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Dissolved	mg/L	<0.00005
9	2	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Total	mg/L	<0.00005
9	2	2022	FR_FR5	FR_FR5	Boron (B)-Dissolved	mg/L	0.01
9	2	2022	FR_FR5	FR_FR5	Boron (B)-Total	mg/L	0.011
9	2	2022	FR_FR5	FR_FR5	Bromide (Br)	mg/L	<0.25
9	2	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Dissolved	mg/L	0.0000226
9	2	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Total	mg/L	0.000024
9	2	2022	FR_FR5	FR_FR5	Calcium (Ca)-Dissolved	mg/L	153
9	2	2022	FR_FR5	FR_FR5	Calcium (Ca)-Total	mg/L	141
9	2	2022	FR_FR5	FR_FR5	Chloride (Cl)	mg/L	3.04
9	2	2022	FR_FR5	FR_FR5	Chromium (Cr)-Dissolved	mg/L	0.00012
9	2	2022	FR_FR5	FR_FR5	Chromium (Cr)-Total	mg/L	0.00038
9	2	2022	FR_FR5	FR_FR5	Cobalt (Co)-Dissolved	mg/L	<0.0001
9	2	2022	FR_FR5	FR_FR5	Cobalt (Co)-Total	mg/L	<0.0001
9	2	2022	FR_FR5	FR_FR5	Conductivity	uS/cm	1080
9	2	2022	FR_FR5	FR_FR5	Copper (Cu)-Dissolved	mg/L	<0.0002
9	2	2022	FR_FR5	FR_FR5	Copper (Cu)-Total	mg/L	<0.0005
9	2	2022	FR_FR5	FR_FR5	Dissolved Organic Carbon	mg/L	<0.5
9	2	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	%	76.6
9	2	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	mg/L	11.12
9	2	2022	FR_FR5	FR_FR5	Fluoride	mg/L	0.217
9	2	2022	FR_FR5	FR_FR5	Hardness - Dissolved (as CaCO3)	mg/L	663
9	2	2022	FR_FR5	FR_FR5	Iron (Fe)-Dissolved	mg/L	<0.01
9	2	2022	FR_FR5	FR_FR5	Iron (Fe)-Total	mg/L	0.013
9	2	2022	FR_FR5	FR_FR5	Lead (Pb)-Dissolved	mg/L	<0.00005
9	2	2022	FR_FR5	FR_FR5	Lead (Pb)-Total	mg/L	<0.00005
9	2	2022	FR_FR5	FR_FR5	Lithium (Li)-Dissolved	mg/L	0.0362
9	2	2022	FR_FR5	FR_FR5	Lithium (Li)-Total	mg/L	0.0373
9	2	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Dissolved	mg/L	68.2
9	2	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Total	mg/L	63.6
9	2	2022	FR_FR5	FR_FR5	Manganese (Mn)-Dissolved	mg/L	0.00172
9	2	2022	FR_FR5	FR_FR5	Manganese (Mn)-Total	mg/L	0.00189
9	2	2022	FR_FR5	FR_FR5	Mercury (Hg)-Dissolved	mg/L	<0.000005
9	2	2022	FR_FR5	FR_FR5	Mercury (Hg)-Total	mg/L	<0.0000005
9	2	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Dissolved	mg/L	0.000849
9	2	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Total	mg/L	0.000859
9	2	2022	FR_FR5	FR_FR5	Nickel (Ni)-Dissolved	mg/L	0.00055
9	2	2022	FR_FR5	FR_FR5	Nickel (Ni)-Total	mg/L	0.00065
9	2	2022	FR_FR5	FR_FR5	Nitrate (as N)	mg/L	21.5
9	2	2022	FR_FR5	FR_FR5	Nitrite (as N)	mg/L	0.0058
9	2	2022	FR_FR5	FR_FR5	ORP	mV	473
9	2	2022	FR_FR5	FR_FR5	ORP, Field	mV	132.7
9	2	2022	FR_FR5	FR_FR5	Orthophosphate	mg/L	<0.001
9	2	2022	FR_FR5	FR_FR5	pH, Field	pH	8.21
9	2	2022	FR_FR5	FR_FR5	pH, Lab	pH	8.29
9	2	2022	FR_FR5	FR_FR5	Phosphorus (P)-Total	mg/L	0.0031
9	2	2022	FR_FR5	FR_FR5	Potassium (K)-Dissolved	mg/L	1.64
9	2	2022	FR_FR5	FR_FR5	Potassium (K)-Total	mg/L	1.63
9	2	2022	FR_FR5	FR_FR5	Selenium (Se)-Dissolved	mg/L	0.0859
9	2	2022	FR_FR5	FR_FR5	Selenium (Se)-Total	mg/L	0.0863
9	2	2022	FR_FR5	FR_FR5	Silicon (Si)-Dissolved	mg/L	2.46
9	2	2022	FR_FR5	FR_FR5	Silicon (Si)-Total	mg/L	2.57
9	2	2022	FR_FR5	FR_FR5	Silver (Ag)-Dissolved	mg/L	<0.00001
9	2	2022	FR_FR5	FR_FR5	Silver (Ag)-Total	mg/L	<0.00001
9	2	2022	FR_FR5	FR_FR5	Sodium (Na)-Dissolved	mg/L	3.13
9	2	2022	FR_FR5	FR_FR5	Sodium (Na)-Total	mg/L	3.16
9	2	2022	FR_FR5	FR_FR5	Strontium (Sr)-Dissolved	mg/L	0.192
9	2	2022	FR_FR5	FR_FR5	Strontium (Sr)-Total	mg/L	0.19
9	2	2022	FR_FR5	FR_FR5	Sulphate	mg/L	321
9	2	2022	FR_FR5	FR_FR5	Temperature, Field	deg c	0.1
9	2	2022	FR_FR5	FR_FR5	Thallium (Tl)-Dissolved	mg/L	<0.00001
9	2	2022	FR_FR5	FR_FR5	Thallium (Tl)-Total	mg/L	<0.00001
9	2	2022	FR_FR5	FR_FR5	Tin (Sn)-Dissolved	mg/L	<0.0001
9	2	2022	FR_FR5	FR_FR5	Tin (Sn)-Total	mg/L	<0.0001
9	2	2022	FR_FR5	FR_FR5	Titanium (Ti)-Dissolved	mg/L	<0.0003
9	2	2022	FR_FR5	FR_FR5	Titanium (Ti)-Total	mg/L	<0.0003
9	2	2022	FR_FR5	FR_FR5	Total Dissolved Solids	mg/L	814
9	2	2022	FR_FR5	FR_FR5	Total Kjeldahl Nitrogen	mg/L	<0.05
9	2	2022	FR_FR5	FR_FR5	Total Organic Carbon	mg/L	<0.5
9	2	2022	FR_FR5	FR_FR5	Total Suspended Solids	mg/L	1.1
9	2	2022	FR_FR5	FR_FR5	Turbidity, Field	NTU	0.15
9	2	2022	FR_FR5	FR_FR5	Turbidity, Lab	NTU	<0.1
9	2	2022	FR_FR5	FR_FR5	Uranium (U)-Dissolved	mg/L	0.00313
9	2	2022	FR_FR5	FR_FR5	Uranium (U)-Total	mg/L	0.00338
9	2	2022	FR_FR5	FR_FR5	Vanadium (V)-Dissolved	mg/L	<0.0005
9	2	2022	FR_FR5	FR_FR5	Vanadium (V)-Total	mg/L	<0.0005
9	2	2022	FR_FR5	FR_FR5	Zinc (Zn)-Dissolved	mg/L	<0.001
9	2	2022	FR_FR5	FR_FR5	Zinc (Zn)-Total	mg/L	<0.003
1	3	2022	FR_FR5	FR_FR5	Acidity (as CaCO3)	mg/L	3.2
1	3	2022	FR_FR5	FR_FR5	Alkalinity, Bicarbonate (as CaCO3)	mg/L	229
1	3	2022	FR_FR5	FR_FR5	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
1	3	2022	FR_FR5	FR_FR5	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	3	2022	FR_FR5	FR_FR5	Alkalinity, Total (as CaCO3)	mg/L	229
1	3	2022	FR_FR5	FR_FR5	Aluminum (Al)-Dissolved	mg/L	<0.001
1	3	2022	FR_FR5	FR_FR5	Aluminum (Al)-Total	mg/L	<0.003
1	3	2022	FR_FR5	FR_FR5	Ammonia, Total (as N)	mg/L	<0.005
1	3	2022	FR_FR5	FR_FR5	Antimony (Sb)-Dissolved	mg/L	<0.0001

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
1	3	2022	FR_FR5	FR_FR5	Antimony (Sb)-Total	mg/L	<0.0001
1	3	2022	FR_FR5	FR_FR5	Arsenic (As)-Dissolved	mg/L	<0.0001
1	3	2022	FR_FR5	FR_FR5	Arsenic (As)-Total	mg/L	<0.0001
1	3	2022	FR_FR5	FR_FR5	Barium (Ba)-Dissolved	mg/L	0.115
1	3	2022	FR_FR5	FR_FR5	Barium (Ba)-Total	mg/L	0.117
1	3	2022	FR_FR5	FR_FR5	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	3	2022	FR_FR5	FR_FR5	Beryllium (Be)-Total	mg/L	<0.00002
1	3	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	3	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Total	mg/L	<0.00005
1	3	2022	FR_FR5	FR_FR5	Boron (B)-Dissolved	mg/L	<0.01
1	3	2022	FR_FR5	FR_FR5	Boron (B)-Total	mg/L	0.011
1	3	2022	FR_FR5	FR_FR5	Bromide (Br)	mg/L	<0.25
1	3	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Dissolved	mg/L	0.0000218
1	3	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Total	mg/L	0.000022
1	3	2022	FR_FR5	FR_FR5	Calcium (Ca)-Dissolved	mg/L	142
1	3	2022	FR_FR5	FR_FR5	Calcium (Ca)-Total	mg/L	132
1	3	2022	FR_FR5	FR_FR5	Chloride (Cl)	mg/L	3.04
1	3	2022	FR_FR5	FR_FR5	Chromium (Cr)-Dissolved	mg/L	0.00011
1	3	2022	FR_FR5	FR_FR5	Chromium (Cr)-Total	mg/L	0.00012
1	3	2022	FR_FR5	FR_FR5	Cobalt (Co)-Dissolved	mg/L	<0.0001
1	3	2022	FR_FR5	FR_FR5	Cobalt (Co)-Total	mg/L	<0.0001
1	3	2022	FR_FR5	FR_FR5	Conductivity	uS/cm	1040
1	3	2022	FR_FR5	FR_FR5	Copper (Cu)-Dissolved	mg/L	<0.0002
1	3	2022	FR_FR5	FR_FR5	Copper (Cu)-Total	mg/L	<0.0005
1	3	2022	FR_FR5	FR_FR5	Dissolved Organic Carbon	mg/L	0.56
1	3	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	%	84.4
1	3	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	mg/L	12.24
1	3	2022	FR_FR5	FR_FR5	Fluoride	mg/L	0.125
1	3	2022	FR_FR5	FR_FR5	Hardness - Dissolved (as CaCO3)	mg/L	625
1	3	2022	FR_FR5	FR_FR5	Iron (Fe)-Dissolved	mg/L	<0.01
1	3	2022	FR_FR5	FR_FR5	Iron (Fe)-Total	mg/L	0.016
1	3	2022	FR_FR5	FR_FR5	Lead (Pb)-Dissolved	mg/L	<0.00005
1	3	2022	FR_FR5	FR_FR5	Lead (Pb)-Total	mg/L	<0.00005
1	3	2022	FR_FR5	FR_FR5	Lithium (Li)-Dissolved	mg/L	0.0345
1	3	2022	FR_FR5	FR_FR5	Lithium (Li)-Total	mg/L	0.0341
1	3	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Dissolved	mg/L	65.6
1	3	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Total	mg/L	62.4
1	3	2022	FR_FR5	FR_FR5	Manganese (Mn)-Dissolved	mg/L	0.00201
1	3	2022	FR_FR5	FR_FR5	Manganese (Mn)-Total	mg/L	0.00222
1	3	2022	FR_FR5	FR_FR5	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	3	2022	FR_FR5	FR_FR5	Mercury (Hg)-Total	mg/L	<0.0000005
1	3	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Dissolved	mg/L	0.000667
1	3	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Total	mg/L	0.00412
1	3	2022	FR_FR5	FR_FR5	Nickel (Ni)-Dissolved	mg/L	<0.0005
1	3	2022	FR_FR5	FR_FR5	Nickel (Ni)-Total	mg/L	0.00052
1	3	2022	FR_FR5	FR_FR5	Nitrate (as N)	mg/L	22
1	3	2022	FR_FR5	FR_FR5	Nitrite (as N)	mg/L	0.0079
1	3	2022	FR_FR5	FR_FR5	ORP	mV	467
1	3	2022	FR_FR5	FR_FR5	ORP, Field	mV	178.7
1	3	2022	FR_FR5	FR_FR5	Orthophosphate	mg/L	<0.001
1	3	2022	FR_FR5	FR_FR5	pH, Field	pH	6.77
1	3	2022	FR_FR5	FR_FR5	pH, Lab	pH	8.16
1	3	2022	FR_FR5	FR_FR5	Phosphorus (P)-Total	mg/L	<0.002
1	3	2022	FR_FR5	FR_FR5	Potassium (K)-Dissolved	mg/L	1.57
1	3	2022	FR_FR5	FR_FR5	Potassium (K)-Total	mg/L	1.45
1	3	2022	FR_FR5	FR_FR5	Selenium (Se)-Dissolved	mg/L	0.087
1	3	2022	FR_FR5	FR_FR5	Selenium (Se)-Total	mg/L	0.0801
1	3	2022	FR_FR5	FR_FR5	Silicon (Si)-Dissolved	mg/L	2.3
1	3	2022	FR_FR5	FR_FR5	Silicon (Si)-Total	mg/L	2.32
1	3	2022	FR_FR5	FR_FR5	Silver (Ag)-Dissolved	mg/L	<0.00001
1	3	2022	FR_FR5	FR_FR5	Silver (Ag)-Total	mg/L	<0.00001
1	3	2022	FR_FR5	FR_FR5	Sodium (Na)-Dissolved	mg/L	3.18
1	3	2022	FR_FR5	FR_FR5	Sodium (Na)-Total	mg/L	3.01
1	3	2022	FR_FR5	FR_FR5	Strontium (Sr)-Dissolved	mg/L	0.181
1	3	2022	FR_FR5	FR_FR5	Strontium (Sr)-Total	mg/L	0.177
1	3	2022	FR_FR5	FR_FR5	Sulphate	mg/L	309
1	3	2022	FR_FR5	FR_FR5	Temperature, Field	deg c	0.2
1	3	2022	FR_FR5	FR_FR5	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	3	2022	FR_FR5	FR_FR5	Thallium (Tl)-Total	mg/L	<0.00001
1	3	2022	FR_FR5	FR_FR5	Tin (Sn)-Dissolved	mg/L	<0.0001
1	3	2022	FR_FR5	FR_FR5	Tin (Sn)-Total	mg/L	<0.0001
1	3	2022	FR_FR5	FR_FR5	Titanium (Ti)-Dissolved	mg/L	<0.0003
1	3	2022	FR_FR5	FR_FR5	Titanium (Ti)-Total	mg/L	<0.0003
1	3	2022	FR_FR5	FR_FR5	Total Dissolved Solids	mg/L	788
1	3	2022	FR_FR5	FR_FR5	Total Kjeldahl Nitrogen	mg/L	<0.05
1	3	2022	FR_FR5	FR_FR5	Total Organic Carbon	mg/L	<0.5
1	3	2022	FR_FR5	FR_FR5	Total Suspended Solids	mg/L	<1
1	3	2022	FR_FR5	FR_FR5	Turbidity, Field	NTU	0.25
1	3	2022	FR_FR5	FR_FR5	Turbidity, Lab	NTU	<0.1
1	3	2022	FR_FR5	FR_FR5	Uranium (U)-Dissolved	mg/L	0.00301
1	3	2022	FR_FR5	FR_FR5	Uranium (U)-Total	mg/L	0.00296
1	3	2022	FR_FR5	FR_FR5	Vanadium (V)-Dissolved	mg/L	<0.0005
1	3	2022	FR_FR5	FR_FR5	Vanadium (V)-Total	mg/L	<0.0005
1	3	2022	FR_FR5	FR_FR5	Zinc (Zn)-Dissolved	mg/L	<0.001
1	3	2022	FR_FR5	FR_FR5	Zinc (Zn)-Total	mg/L	<0.003
2	4	2022	FR_FR5	FR_FR5	Acidity (as CaCO3)	mg/L	2
2	4	2022	FR_FR5	FR_FR5	Alkalinity, Bicarbonate (as CaCO3)	mg/L	238
2	4	2022	FR_FR5	FR_FR5	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
2	4	2022	FR_FR5	FR_FR5	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
2	4	2022	FR_FR5	FR_FR5	Alkalinity, Total (as CaCO3)	mg/L	238
2	4	2022	FR_FR5	FR_FR5	Aluminum (Al)-Dissolved	mg/L	0.0022
2	4	2022	FR_FR5	FR_FR5	Aluminum (Al)-Total	mg/L	0.0287
2	4	2022	FR_FR5	FR_FR5	Ammonia, Total (as N)	mg/L	<0.005
2	4	2022	FR_FR5	FR_FR5	Antimony (Sb)-Dissolved	mg/L	0.00021
2	4	2022	FR_FR5	FR_FR5	Antimony (Sb)-Total	mg/L	0.00024
2	4	2022	FR_FR5	FR_FR5	Arsenic (As)-Dissolved	mg/L	<0.0001
2	4	2022	FR_FR5	FR_FR5	Arsenic (As)-Total	mg/L	0.00013
2	4	2022	FR_FR5	FR_FR5	Barium (Ba)-Dissolved	mg/L	0.106
2	4	2022	FR_FR5	FR_FR5	Barium (Ba)-Total	mg/L	0.106
2	4	2022	FR_FR5	FR_FR5	Beryllium (Be)-Dissolved	mg/L	<0.00002
2	4	2022	FR_FR5	FR_FR5	Beryllium (Be)-Total	mg/L	<0.00002
2	4	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Dissolved	mg/L	<0.00005
2	4	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Total	mg/L	<0.00005
2	4	2022	FR_FR5	FR_FR5	Boron (B)-Dissolved	mg/L	<0.01
2	4	2022	FR_FR5	FR_FR5	Boron (B)-Total	mg/L	0.011
2	4	2022	FR_FR5	FR_FR5	Bromide (Br)	mg/L	<0.25
2	4	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Dissolved	mg/L	0.0000361
2	4	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Total	mg/L	0.0000387
2	4	2022	FR_FR5	FR_FR5	Calcium (Ca)-Dissolved	mg/L	136
2	4	2022	FR_FR5	FR_FR5	Calcium (Ca)-Total	mg/L	130
2	4	2022	FR_FR5	FR_FR5	Chloride (Cl)	mg/L	4.44

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
2	4	2022	FR_FR5	FR_FR5	Chromium (Cr)-Dissolved	mg/L	0.0001
2	4	2022	FR_FR5	FR_FR5	Chromium (Cr)-Total	mg/L	0.00017
2	4	2022	FR_FR5	FR_FR5	Cobalt (Co)-Dissolved	mg/L	0.0001
2	4	2022	FR_FR5	FR_FR5	Cobalt (Co)-Total	mg/L	0.00011
2	4	2022	FR_FR5	FR_FR5	Conductivity	uS/cm	1060
2	4	2022	FR_FR5	FR_FR5	Copper (Cu)-Dissolved	mg/L	<0.0002
2	4	2022	FR_FR5	FR_FR5	Copper (Cu)-Total	mg/L	<0.0005
2	4	2022	FR_FR5	FR_FR5	Dissolved Organic Carbon	mg/L	0.95
2	4	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	%	85.5
2	4	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	mg/L	11.49
2	4	2022	FR_FR5	FR_FR5	Fluoride	mg/L	0.142
2	4	2022	FR_FR5	FR_FR5	Hardness - Dissolved (as CaCO3)	mg/L	607
2	4	2022	FR_FR5	FR_FR5	Iron (Fe)-Dissolved	mg/L	<0.01
2	4	2022	FR_FR5	FR_FR5	Iron (Fe)-Total	mg/L	0.047
2	4	2022	FR_FR5	FR_FR5	Lead (Pb)-Dissolved	mg/L	<0.00005
2	4	2022	FR_FR5	FR_FR5	Lead (Pb)-Total	mg/L	<0.00005
2	4	2022	FR_FR5	FR_FR5	Lithium (Li)-Dissolved	mg/L	0.0394
2	4	2022	FR_FR5	FR_FR5	Lithium (Li)-Total	mg/L	0.0413
2	4	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Dissolved	mg/L	65
2	4	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Total	mg/L	57
2	4	2022	FR_FR5	FR_FR5	Manganese (Mn)-Dissolved	mg/L	0.00369
2	4	2022	FR_FR5	FR_FR5	Manganese (Mn)-Total	mg/L	0.005
2	4	2022	FR_FR5	FR_FR5	Mercury (Hg)-Dissolved	mg/L	<0.000005
2	4	2022	FR_FR5	FR_FR5	Mercury (Hg)-Total	mg/L	<0.000005
2	4	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Dissolved	mg/L	0.0017
2	4	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Total	mg/L	0.00174
2	4	2022	FR_FR5	FR_FR5	Nickel (Ni)-Dissolved	mg/L	0.00197
2	4	2022	FR_FR5	FR_FR5	Nickel (Ni)-Total	mg/L	0.002
2	4	2022	FR_FR5	FR_FR5	Nitrate (as N)	mg/L	22.4
2	4	2022	FR_FR5	FR_FR5	Nitrite (as N)	mg/L	0.0197
2	4	2022	FR_FR5	FR_FR5	ORP	mV	437
2	4	2022	FR_FR5	FR_FR5	ORP, Field	mV	148.7
2	4	2022	FR_FR5	FR_FR5	Orthophosphate	mg/L	<0.001
2	4	2022	FR_FR5	FR_FR5	pH, Field	pH	8.38
2	4	2022	FR_FR5	FR_FR5	pH, Lab	pH	7.82
2	4	2022	FR_FR5	FR_FR5	Phosphorus (P)-Total	mg/L	0.0066
2	4	2022	FR_FR5	FR_FR5	Potassium (K)-Dissolved	mg/L	1.72
2	4	2022	FR_FR5	FR_FR5	Potassium (K)-Total	mg/L	1.82
2	4	2022	FR_FR5	FR_FR5	Selenium (Se)-Dissolved	mg/L	0.081
2	4	2022	FR_FR5	FR_FR5	Selenium (Se)-Total	mg/L	0.0795
2	4	2022	FR_FR5	FR_FR5	Silicon (Si)-Dissolved	mg/L	2.14
2	4	2022	FR_FR5	FR_FR5	Silicon (Si)-Total	mg/L	2.25
2	4	2022	FR_FR5	FR_FR5	Silver (Ag)-Dissolved	mg/L	<0.00001
2	4	2022	FR_FR5	FR_FR5	Silver (Ag)-Total	mg/L	<0.00001
2	4	2022	FR_FR5	FR_FR5	Sodium (Na)-Dissolved	mg/L	3.48
2	4	2022	FR_FR5	FR_FR5	Sodium (Na)-Total	mg/L	3.5
2	4	2022	FR_FR5	FR_FR5	Strontium (Sr)-Dissolved	mg/L	0.181
2	4	2022	FR_FR5	FR_FR5	Strontium (Sr)-Total	mg/L	0.19
2	4	2022	FR_FR5	FR_FR5	Sulphate	mg/L	338
2	4	2022	FR_FR5	FR_FR5	Temperature, Field	deg c	2.9
2	4	2022	FR_FR5	FR_FR5	Thallium (Tl)-Dissolved	mg/L	<0.00001
2	4	2022	FR_FR5	FR_FR5	Thallium (Tl)-Total	mg/L	<0.00001
2	4	2022	FR_FR5	FR_FR5	Tin (Sn)-Dissolved	mg/L	<0.0001
2	4	2022	FR_FR5	FR_FR5	Tin (Sn)-Total	mg/L	<0.0001
2	4	2022	FR_FR5	FR_FR5	Titanium (Ti)-Dissolved	mg/L	<0.0003
2	4	2022	FR_FR5	FR_FR5	Titanium (Ti)-Total	mg/L	0.00048
2	4	2022	FR_FR5	FR_FR5	Total Dissolved Solids	mg/L	767
2	4	2022	FR_FR5	FR_FR5	Total Kjeldahl Nitrogen	mg/L	0.414
2	4	2022	FR_FR5	FR_FR5	Total Organic Carbon	mg/L	1.1
2	4	2022	FR_FR5	FR_FR5	Total Suspended Solids	mg/L	3.3
2	4	2022	FR_FR5	FR_FR5	Turbidity, Lab	NTU	3.44
2	4	2022	FR_FR5	FR_FR5	Uranium (U)-Dissolved	mg/L	0.00326
2	4	2022	FR_FR5	FR_FR5	Uranium (U)-Total	mg/L	0.00324
2	4	2022	FR_FR5	FR_FR5	Vanadium (V)-Dissolved	mg/L	<0.0005
2	4	2022	FR_FR5	FR_FR5	Vanadium (V)-Total	mg/L	<0.0005
2	4	2022	FR_FR5	FR_FR5	Zinc (Zn)-Dissolved	mg/L	<0.002
2	4	2022	FR_FR5	FR_FR5	Zinc (Zn)-Total	mg/L	<0.003
4	5	2022	FR_FR5	FR_FR5	Acidity (as CaCO3)	mg/L	<2
4	5	2022	FR_FR5	FR_FR5	Alkalinity, Bicarbonate (as CaCO3)	mg/L	195
4	5	2022	FR_FR5	FR_FR5	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
4	5	2022	FR_FR5	FR_FR5	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
4	5	2022	FR_FR5	FR_FR5	Alkalinity, Total (as CaCO3)	mg/L	195
4	5	2022	FR_FR5	FR_FR5	Aluminum (Al)-Dissolved	mg/L	0.0013
4	5	2022	FR_FR5	FR_FR5	Aluminum (Al)-Total	mg/L	0.12
4	5	2022	FR_FR5	FR_FR5	Ammonia, Total (as N)	mg/L	<0.005
4	5	2022	FR_FR5	FR_FR5	Antimony (Sb)-Dissolved	mg/L	0.00015
4	5	2022	FR_FR5	FR_FR5	Antimony (Sb)-Total	mg/L	0.00016
4	5	2022	FR_FR5	FR_FR5	Arsenic (As)-Dissolved	mg/L	<0.0001
4	5	2022	FR_FR5	FR_FR5	Arsenic (As)-Total	mg/L	0.00016
4	5	2022	FR_FR5	FR_FR5	Barium (Ba)-Dissolved	mg/L	0.0762
4	5	2022	FR_FR5	FR_FR5	Barium (Ba)-Total	mg/L	0.0736
4	5	2022	FR_FR5	FR_FR5	Beryllium (Be)-Dissolved	mg/L	<0.00002
4	5	2022	FR_FR5	FR_FR5	Beryllium (Be)-Total	mg/L	<0.00002
4	5	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Dissolved	mg/L	<0.00005
4	5	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Total	mg/L	<0.00005
4	5	2022	FR_FR5	FR_FR5	Boron (B)-Dissolved	mg/L	<0.01
4	5	2022	FR_FR5	FR_FR5	Boron (B)-Total	mg/L	<0.01
4	5	2022	FR_FR5	FR_FR5	Bromide (Br)	mg/L	<0.05
4	5	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Dissolved	mg/L	0.0000581
4	5	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Total	mg/L	0.0000855
4	5	2022	FR_FR5	FR_FR5	Calcium (Ca)-Dissolved	mg/L	107
4	5	2022	FR_FR5	FR_FR5	Calcium (Ca)-Total	mg/L	107
4	5	2022	FR_FR5	FR_FR5	Chloride (Cl)	mg/L	2.5
4	5	2022	FR_FR5	FR_FR5	Chromium (Cr)-Dissolved	mg/L	0.00011
4	5	2022	FR_FR5	FR_FR5	Chromium (Cr)-Total	mg/L	0.00024
4	5	2022	FR_FR5	FR_FR5	Cobalt (Co)-Dissolved	mg/L	<0.0001
4	5	2022	FR_FR5	FR_FR5	Cobalt (Co)-Total	mg/L	0.00016
4	5	2022	FR_FR5	FR_FR5	Conductivity	uS/cm	896
4	5	2022	FR_FR5	FR_FR5	Copper (Cu)-Dissolved	mg/L	0.00022
4	5	2022	FR_FR5	FR_FR5	Copper (Cu)-Total	mg/L	<0.0005
4	5	2022	FR_FR5	FR_FR5	Dissolved Organic Carbon	mg/L	1.33
4	5	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	mg/L	10.93
4	5	2022	FR_FR5	FR_FR5	Fluoride	mg/L	0.143
4	5	2022	FR_FR5	FR_FR5	Hardness - Dissolved (as CaCO3)	mg/L	474
4	5	2022	FR_FR5	FR_FR5	Iron (Fe)-Dissolved	mg/L	<0.01
4	5	2022	FR_FR5	FR_FR5	Iron (Fe)-Total	mg/L	0.196
4	5	2022	FR_FR5	FR_FR5	Lead (Pb)-Dissolved	mg/L	<0.00005
4	5	2022	FR_FR5	FR_FR5	Lead (Pb)-Total	mg/L	0.000139
4	5	2022	FR_FR5	FR_FR5	Lithium (Li)-Dissolved	mg/L	0.032
4	5	2022	FR_FR5	FR_FR5	Lithium (Li)-Total	mg/L	0.0319
4	5	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Dissolved	mg/L	50.2

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
4	5	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Total	mg/L	44.5
4	5	2022	FR_FR5	FR_FR5	Manganese (Mn)-Dissolved	mg/L	0.0046
4	5	2022	FR_FR5	FR_FR5	Manganese (Mn)-Total	mg/L	0.0126
4	5	2022	FR_FR5	FR_FR5	Mercury (Hg)-Dissolved	mg/L	<0.000005
4	5	2022	FR_FR5	FR_FR5	Mercury (Hg)-Total	mg/L	<0.000005
4	5	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Dissolved	mg/L	0.00137
4	5	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Total	mg/L	0.00142
4	5	2022	FR_FR5	FR_FR5	Nickel (Ni)-Dissolved	mg/L	0.00312
4	5	2022	FR_FR5	FR_FR5	Nickel (Ni)-Total	mg/L	0.00352
4	5	2022	FR_FR5	FR_FR5	Nitrate (as N)	mg/L	16.9
4	5	2022	FR_FR5	FR_FR5	Nitrite (as N)	mg/L	0.0058
4	5	2022	FR_FR5	FR_FR5	ORP	mV	254
4	5	2022	FR_FR5	FR_FR5	ORP, Field	mV	301.8
4	5	2022	FR_FR5	FR_FR5	Orthophosphate	mg/L	<0.001
4	5	2022	FR_FR5	FR_FR5	pH, Field	pH	8.08
4	5	2022	FR_FR5	FR_FR5	pH, Lab	pH	8.23
4	5	2022	FR_FR5	FR_FR5	Phosphorus (P)-Total	mg/L	0.0195
4	5	2022	FR_FR5	FR_FR5	Potassium (K)-Dissolved	mg/L	1.58
4	5	2022	FR_FR5	FR_FR5	Potassium (K)-Total	mg/L	1.46
4	5	2022	FR_FR5	FR_FR5	Selenium (Se)-Dissolved	mg/L	0.0693
4	5	2022	FR_FR5	FR_FR5	Selenium (Se)-Total	mg/L	0.0595
4	5	2022	FR_FR5	FR_FR5	Silicon (Si)-Dissolved	mg/L	1.86
4	5	2022	FR_FR5	FR_FR5	Silicon (Si)-Total	mg/L	2.13
4	5	2022	FR_FR5	FR_FR5	Silver (Ag)-Dissolved	mg/L	<0.00001
4	5	2022	FR_FR5	FR_FR5	Silver (Ag)-Total	mg/L	<0.00001
4	5	2022	FR_FR5	FR_FR5	Sodium (Na)-Dissolved	mg/L	2.38
4	5	2022	FR_FR5	FR_FR5	Sodium (Na)-Total	mg/L	2.18
4	5	2022	FR_FR5	FR_FR5	Strontium (Sr)-Dissolved	mg/L	0.142
4	5	2022	FR_FR5	FR_FR5	Strontium (Sr)-Total	mg/L	0.139
4	5	2022	FR_FR5	FR_FR5	Sulphate	mg/L	256
4	5	2022	FR_FR5	FR_FR5	Temperature, Field	deg c	4.4
4	5	2022	FR_FR5	FR_FR5	Thallium (Tl)-Dissolved	mg/L	<0.00001
4	5	2022	FR_FR5	FR_FR5	Thallium (Tl)-Total	mg/L	<0.00001
4	5	2022	FR_FR5	FR_FR5	Tin (Sn)-Dissolved	mg/L	<0.0001
4	5	2022	FR_FR5	FR_FR5	Tin (Sn)-Total	mg/L	<0.0001
4	5	2022	FR_FR5	FR_FR5	Titanium (Ti)-Dissolved	mg/L	<0.0003
4	5	2022	FR_FR5	FR_FR5	Titanium (Ti)-Total	mg/L	0.00156
4	5	2022	FR_FR5	FR_FR5	Total Dissolved Solids	mg/L	604
4	5	2022	FR_FR5	FR_FR5	Total Kjeldahl Nitrogen	mg/L	<0.05
4	5	2022	FR_FR5	FR_FR5	Total Organic Carbon	mg/L	1.93
4	5	2022	FR_FR5	FR_FR5	Total Suspended Solids	mg/L	23.4
4	5	2022	FR_FR5	FR_FR5	Turbidity, Lab	NTU	1.98
4	5	2022	FR_FR5	FR_FR5	Uranium (U)-Dissolved	mg/L	0.00277
4	5	2022	FR_FR5	FR_FR5	Uranium (U)-Total	mg/L	0.00282
4	5	2022	FR_FR5	FR_FR5	Vanadium (V)-Dissolved	mg/L	<0.0005
4	5	2022	FR_FR5	FR_FR5	Vanadium (V)-Total	mg/L	0.00058
4	5	2022	FR_FR5	FR_FR5	Zinc (Zn)-Dissolved	mg/L	0.0021
4	5	2022	FR_FR5	FR_FR5	Zinc (Zn)-Total	mg/L	0.0039
6	6	2022	FR_FR5	FR_FR5	Acidity (as CaCO3)	mg/L	2.6
6	6	2022	FR_FR5	FR_FR5	Alkalinity, Bicarbonate (as CaCO3)	mg/L	155
6	6	2022	FR_FR5	FR_FR5	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
6	6	2022	FR_FR5	FR_FR5	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
6	6	2022	FR_FR5	FR_FR5	Alkalinity, Total (as CaCO3)	mg/L	155
6	6	2022	FR_FR5	FR_FR5	Aluminum (Al)-Dissolved	mg/L	0.002
6	6	2022	FR_FR5	FR_FR5	Aluminum (Al)-Total	mg/L	0.206
6	6	2022	FR_FR5	FR_FR5	Ammonia, Total (as N)	mg/L	<0.005
6	6	2022	FR_FR5	FR_FR5	Antimony (Sb)-Dissolved	mg/L	0.00011
6	6	2022	FR_FR5	FR_FR5	Antimony (Sb)-Total	mg/L	0.00013
6	6	2022	FR_FR5	FR_FR5	Arsenic (As)-Dissolved	mg/L	<0.0001
6	6	2022	FR_FR5	FR_FR5	Arsenic (As)-Total	mg/L	0.00033
6	6	2022	FR_FR5	FR_FR5	Barium (Ba)-Dissolved	mg/L	0.051
6	6	2022	FR_FR5	FR_FR5	Barium (Ba)-Total	mg/L	0.0694
6	6	2022	FR_FR5	FR_FR5	Beryllium (Be)-Dissolved	mg/L	<0.00002
6	6	2022	FR_FR5	FR_FR5	Beryllium (Be)-Total	mg/L	0.000033
6	6	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Dissolved	mg/L	<0.00005
6	6	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Total	mg/L	<0.00005
6	6	2022	FR_FR5	FR_FR5	Boron (B)-Dissolved	mg/L	<0.01
6	6	2022	FR_FR5	FR_FR5	Boron (B)-Total	mg/L	<0.01
6	6	2022	FR_FR5	FR_FR5	Bromide (Br)	mg/L	<0.05
6	6	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Dissolved	mg/L	0.0000277
6	6	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Total	mg/L	0.000153
6	6	2022	FR_FR5	FR_FR5	Calcium (Ca)-Dissolved	mg/L	65.5
6	6	2022	FR_FR5	FR_FR5	Calcium (Ca)-Total	mg/L	72
6	6	2022	FR_FR5	FR_FR5	Chloride (Cl)	mg/L	1.31
6	6	2022	FR_FR5	FR_FR5	Chromium (Cr)-Dissolved	mg/L	<0.0001
6	6	2022	FR_FR5	FR_FR5	Chromium (Cr)-Total	mg/L	0.00039
6	6	2022	FR_FR5	FR_FR5	Cobalt (Co)-Dissolved	mg/L	<0.0001
6	6	2022	FR_FR5	FR_FR5	Cobalt (Co)-Total	mg/L	0.00042
6	6	2022	FR_FR5	FR_FR5	Conductivity	uS/cm	576
6	6	2022	FR_FR5	FR_FR5	Copper (Cu)-Dissolved	mg/L	<0.0002
6	6	2022	FR_FR5	FR_FR5	Copper (Cu)-Total	mg/L	0.00098
6	6	2022	FR_FR5	FR_FR5	Dissolved Organic Carbon	mg/L	1.83
6	6	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	mg/L	10.42
6	6	2022	FR_FR5	FR_FR5	Fluoride	mg/L	0.135
6	6	2022	FR_FR5	FR_FR5	Hardness - Dissolved (as CaCO3)	mg/L	280
6	6	2022	FR_FR5	FR_FR5	Iron (Fe)-Dissolved	mg/L	<0.01
6	6	2022	FR_FR5	FR_FR5	Iron (Fe)-Total	mg/L	0.426
6	6	2022	FR_FR5	FR_FR5	Lead (Pb)-Dissolved	mg/L	<0.00005
6	6	2022	FR_FR5	FR_FR5	Lead (Pb)-Total	mg/L	0.000447
6	6	2022	FR_FR5	FR_FR5	Lithium (Li)-Dissolved	mg/L	0.0221
6	6	2022	FR_FR5	FR_FR5	Lithium (Li)-Total	mg/L	0.0184
6	6	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Dissolved	mg/L	28.2
6	6	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Total	mg/L	30.9
6	6	2022	FR_FR5	FR_FR5	Manganese (Mn)-Dissolved	mg/L	0.00528
6	6	2022	FR_FR5	FR_FR5	Manganese (Mn)-Total	mg/L	0.0409
6	6	2022	FR_FR5	FR_FR5	Mercury (Hg)-Dissolved	mg/L	<0.000005
6	6	2022	FR_FR5	FR_FR5	Mercury (Hg)-Total	mg/L	<0.000005
6	6	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Dissolved	mg/L	0.00104
6	6	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Total	mg/L	0.000902
6	6	2022	FR_FR5	FR_FR5	Nickel (Ni)-Dissolved	mg/L	0.00133
6	6	2022	FR_FR5	FR_FR5	Nickel (Ni)-Total	mg/L	0.0035
6	6	2022	FR_FR5	FR_FR5	Nitrate (as N)	mg/L	7.82
6	6	2022	FR_FR5	FR_FR5	Nitrite (as N)	mg/L	0.0016
6	6	2022	FR_FR5	FR_FR5	ORP	mV	385
6	6	2022	FR_FR5	FR_FR5	ORP, Field	mV	219.1
6	6	2022	FR_FR5	FR_FR5	Orthophosphate	mg/L	<0.001
6	6	2022	FR_FR5	FR_FR5	pH, Field	pH	7.85
6	6	2022	FR_FR5	FR_FR5	pH, Lab	pH	8.24
6	6	2022	FR_FR5	FR_FR5	Phosphorus (P)-Total	mg/L	0.0731
6	6	2022	FR_FR5	FR_FR5	Potassium (K)-Dissolved	mg/L	1.04
6	6	2022	FR_FR5	FR_FR5	Potassium (K)-Total	mg/L	1.11

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
6	6	2022	FR_FR5	FR_FR5	Selenium (Se)-Dissolved	mg/L	0.031
6	6	2022	FR_FR5	FR_FR5	Selenium (Se)-Total	mg/L	0.0307
6	6	2022	FR_FR5	FR_FR5	Silicon (Si)-Dissolved	mg/L	1.85
6	6	2022	FR_FR5	FR_FR5	Silicon (Si)-Total	mg/L	2.22
6	6	2022	FR_FR5	FR_FR5	Silver (Ag)-Dissolved	mg/L	<0.00001
6	6	2022	FR_FR5	FR_FR5	Silver (Ag)-Total	mg/L	<0.00001
6	6	2022	FR_FR5	FR_FR5	Sodium (Na)-Dissolved	mg/L	1.74
6	6	2022	FR_FR5	FR_FR5	Sodium (Na)-Total	mg/L	1.66
6	6	2022	FR_FR5	FR_FR5	Strontium (Sr)-Dissolved	mg/L	0.091
6	6	2022	FR_FR5	FR_FR5	Strontium (Sr)-Total	mg/L	0.0987
6	6	2022	FR_FR5	FR_FR5	Sulphate	mg/L	112
6	6	2022	FR_FR5	FR_FR5	Temperature, Field	deg c	4.3
6	6	2022	FR_FR5	FR_FR5	Thallium (Tl)-Dissolved	mg/L	<0.00001
6	6	2022	FR_FR5	FR_FR5	Thallium (Tl)-Total	mg/L	0.000013
6	6	2022	FR_FR5	FR_FR5	Tin (Sn)-Dissolved	mg/L	<0.0001
6	6	2022	FR_FR5	FR_FR5	Tin (Sn)-Total	mg/L	<0.0001
6	6	2022	FR_FR5	FR_FR5	Titanium (Ti)-Dissolved	mg/L	<0.0003
6	6	2022	FR_FR5	FR_FR5	Titanium (Ti)-Total	mg/L	0.0019
6	6	2022	FR_FR5	FR_FR5	Total Dissolved Solids	mg/L	332
6	6	2022	FR_FR5	FR_FR5	Total Kjeldahl Nitrogen	mg/L	0.393
6	6	2022	FR_FR5	FR_FR5	Total Organic Carbon	mg/L	2.81
6	6	2022	FR_FR5	FR_FR5	Total Suspended Solids	mg/L	42.1
6	6	2022	FR_FR5	FR_FR5	Turbidity, Field	NTU	15.56
6	6	2022	FR_FR5	FR_FR5	Turbidity, Lab	NTU	11.6
6	6	2022	FR_FR5	FR_FR5	Uranium (U)-Dissolved	mg/L	0.00159
6	6	2022	FR_FR5	FR_FR5	Uranium (U)-Total	mg/L	0.00162
6	6	2022	FR_FR5	FR_FR5	Vanadium (V)-Dissolved	mg/L	<0.0005
6	6	2022	FR_FR5	FR_FR5	Vanadium (V)-Total	mg/L	0.00113
6	6	2022	FR_FR5	FR_FR5	Zinc (Zn)-Dissolved	mg/L	0.0012
6	6	2022	FR_FR5	FR_FR5	Zinc (Zn)-Total	mg/L	0.0075
1	7	2022	FR_FR5	FR_FR5	Acidity (as CaCO3)	mg/L	2.2
1	7	2022	FR_FR5	FR_FR5	Alkalinity, Bicarbonate (as CaCO3)	mg/L	174
1	7	2022	FR_FR5	FR_FR5	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
1	7	2022	FR_FR5	FR_FR5	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
1	7	2022	FR_FR5	FR_FR5	Alkalinity, Total (as CaCO3)	mg/L	174
1	7	2022	FR_FR5	FR_FR5	Aluminum (Al)-Dissolved	mg/L	0.0027
1	7	2022	FR_FR5	FR_FR5	Aluminum (Al)-Total	mg/L	0.0515
1	7	2022	FR_FR5	FR_FR5	Ammonia, Total (as N)	mg/L	<0.005
1	7	2022	FR_FR5	FR_FR5	Antimony (Sb)-Dissolved	mg/L	0.00014
1	7	2022	FR_FR5	FR_FR5	Antimony (Sb)-Total	mg/L	0.00015
1	7	2022	FR_FR5	FR_FR5	Arsenic (As)-Dissolved	mg/L	<0.0001
1	7	2022	FR_FR5	FR_FR5	Arsenic (As)-Total	mg/L	0.00021
1	7	2022	FR_FR5	FR_FR5	Barium (Ba)-Dissolved	mg/L	0.0582
1	7	2022	FR_FR5	FR_FR5	Barium (Ba)-Total	mg/L	0.0555
1	7	2022	FR_FR5	FR_FR5	Beryllium (Be)-Dissolved	mg/L	<0.00002
1	7	2022	FR_FR5	FR_FR5	Beryllium (Be)-Total	mg/L	<0.00002
1	7	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Dissolved	mg/L	<0.00005
1	7	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Total	mg/L	<0.00005
1	7	2022	FR_FR5	FR_FR5	Boron (B)-Dissolved	mg/L	<0.01
1	7	2022	FR_FR5	FR_FR5	Boron (B)-Total	mg/L	<0.01
1	7	2022	FR_FR5	FR_FR5	Bromide (Br)	mg/L	<0.05
1	7	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Dissolved	mg/L	0.0000407
1	7	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Total	mg/L	0.0000617
1	7	2022	FR_FR5	FR_FR5	Calcium (Ca)-Dissolved	mg/L	75.1
1	7	2022	FR_FR5	FR_FR5	Calcium (Ca)-Total	mg/L	75.4
1	7	2022	FR_FR5	FR_FR5	Chloride (Cl)	mg/L	1.72
1	7	2022	FR_FR5	FR_FR5	Chromium (Cr)-Dissolved	mg/L	0.0001
1	7	2022	FR_FR5	FR_FR5	Chromium (Cr)-Total	mg/L	0.00018
1	7	2022	FR_FR5	FR_FR5	Cobalt (Co)-Dissolved	mg/L	<0.0001
1	7	2022	FR_FR5	FR_FR5	Cobalt (Co)-Total	mg/L	<0.0001
1	7	2022	FR_FR5	FR_FR5	Conductivity	uS/cm	624
1	7	2022	FR_FR5	FR_FR5	Copper (Cu)-Dissolved	mg/L	<0.0002
1	7	2022	FR_FR5	FR_FR5	Copper (Cu)-Total	mg/L	<0.0005
1	7	2022	FR_FR5	FR_FR5	Dissolved Organic Carbon	mg/L	1.26
1	7	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	%	82.2
1	7	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	mg/L	10.29
1	7	2022	FR_FR5	FR_FR5	Fluoride	mg/L	0.135
1	7	2022	FR_FR5	FR_FR5	Hardness - Dissolved (as CaCO3)	mg/L	327
1	7	2022	FR_FR5	FR_FR5	Iron (Fe)-Dissolved	mg/L	<0.01
1	7	2022	FR_FR5	FR_FR5	Iron (Fe)-Total	mg/L	0.088
1	7	2022	FR_FR5	FR_FR5	Lead (Pb)-Dissolved	mg/L	<0.00005
1	7	2022	FR_FR5	FR_FR5	Lead (Pb)-Total	mg/L	0.000077
1	7	2022	FR_FR5	FR_FR5	Lithium (Li)-Dissolved	mg/L	0.0258
1	7	2022	FR_FR5	FR_FR5	Lithium (Li)-Total	mg/L	0.0256
1	7	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Dissolved	mg/L	33.8
1	7	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Total	mg/L	32.3
1	7	2022	FR_FR5	FR_FR5	Manganese (Mn)-Dissolved	mg/L	0.0021
1	7	2022	FR_FR5	FR_FR5	Manganese (Mn)-Total	mg/L	0.00658
1	7	2022	FR_FR5	FR_FR5	Mercury (Hg)-Dissolved	mg/L	<0.000005
1	7	2022	FR_FR5	FR_FR5	Mercury (Hg)-Total	mg/L	<0.000005
1	7	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Dissolved	mg/L	0.00152
1	7	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Total	mg/L	0.00128
1	7	2022	FR_FR5	FR_FR5	Nickel (Ni)-Dissolved	mg/L	0.00185
1	7	2022	FR_FR5	FR_FR5	Nickel (Ni)-Total	mg/L	0.0022
1	7	2022	FR_FR5	FR_FR5	Nitrate (as N)	mg/L	9.69
1	7	2022	FR_FR5	FR_FR5	Nitrite (as N)	mg/L	0.0024
1	7	2022	FR_FR5	FR_FR5	ORP	mV	429
1	7	2022	FR_FR5	FR_FR5	ORP, Field	mV	133.6
1	7	2022	FR_FR5	FR_FR5	Orthophosphate	mg/L	<0.001
1	7	2022	FR_FR5	FR_FR5	pH, Field	pH	7.99
1	7	2022	FR_FR5	FR_FR5	pH, Lab	pH	8
1	7	2022	FR_FR5	FR_FR5	Phosphorus (P)-Total	mg/L	0.0089
1	7	2022	FR_FR5	FR_FR5	Potassium (K)-Dissolved	mg/L	1.26
1	7	2022	FR_FR5	FR_FR5	Potassium (K)-Total	mg/L	1.28
1	7	2022	FR_FR5	FR_FR5	Selenium (Se)-Dissolved	mg/L	0.0415
1	7	2022	FR_FR5	FR_FR5	Selenium (Se)-Total	mg/L	0.0391
1	7	2022	FR_FR5	FR_FR5	Silicon (Si)-Dissolved	mg/L	2.05
1	7	2022	FR_FR5	FR_FR5	Silicon (Si)-Total	mg/L	2.01
1	7	2022	FR_FR5	FR_FR5	Silver (Ag)-Dissolved	mg/L	<0.00001
1	7	2022	FR_FR5	FR_FR5	Silver (Ag)-Total	mg/L	<0.00001
1	7	2022	FR_FR5	FR_FR5	Sodium (Na)-Dissolved	mg/L	2.27
1	7	2022	FR_FR5	FR_FR5	Sodium (Na)-Total	mg/L	2.19
1	7	2022	FR_FR5	FR_FR5	Strontium (Sr)-Dissolved	mg/L	0.109
1	7	2022	FR_FR5	FR_FR5	Strontium (Sr)-Total	mg/L	0.104
1	7	2022	FR_FR5	FR_FR5	Sulphate	mg/L	127
1	7	2022	FR_FR5	FR_FR5	Temperature, Field	deg c	5.9
1	7	2022	FR_FR5	FR_FR5	Thallium (Tl)-Dissolved	mg/L	<0.00001
1	7	2022	FR_FR5	FR_FR5	Thallium (Tl)-Total	mg/L	<0.00001
1	7	2022	FR_FR5	FR_FR5	Tin (Sn)-Dissolved	mg/L	<0.0001
1	7	2022	FR_FR5	FR_FR5	Tin (Sn)-Total	mg/L	<0.0001
1	7	2022	FR_FR5	FR_FR5	Titanium (Ti)-Dissolved	mg/L	<0.0003

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
1	7	2022	FR_FR5	FR_FR5	Titanium (Ti)-Total	mg/L	0.00089
1	7	2022	FR_FR5	FR_FR5	Total Dissolved Solids	mg/L	390
1	7	2022	FR_FR5	FR_FR5	Total Kjeldahl Nitrogen	mg/L	0.499
1	7	2022	FR_FR5	FR_FR5	Total Organic Carbon	mg/L	1.63
1	7	2022	FR_FR5	FR_FR5	Total Suspended Solids	mg/L	10.7
1	7	2022	FR_FR5	FR_FR5	Turbidity, Field	NTU	3.39
1	7	2022	FR_FR5	FR_FR5	Turbidity, Lab	NTU	3.67
1	7	2022	FR_FR5	FR_FR5	Uranium (U)-Dissolved	mg/L	0.00178
1	7	2022	FR_FR5	FR_FR5	Uranium (U)-Total	mg/L	0.00195
1	7	2022	FR_FR5	FR_FR5	Vanadium (V)-Dissolved	mg/L	<0.0005
1	7	2022	FR_FR5	FR_FR5	Vanadium (V)-Total	mg/L	<0.0005
1	7	2022	FR_FR5	FR_FR5	Zinc (Zn)-Dissolved	mg/L	0.0022
1	7	2022	FR_FR5	FR_FR5	Zinc (Zn)-Total	mg/L	0.0031
10	8	2022	FR_FR5	FR_FR5	Acidity (as CaCO3)	mg/L	<2
10	8	2022	FR_FR5	FR_FR5	Alkalinity, Bicarbonate (as CaCO3)	mg/L	220
10	8	2022	FR_FR5	FR_FR5	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
10	8	2022	FR_FR5	FR_FR5	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
10	8	2022	FR_FR5	FR_FR5	Alkalinity, Total (as CaCO3)	mg/L	220
10	8	2022	FR_FR5	FR_FR5	Aluminum (Al)-Dissolved	mg/L	<0.001
10	8	2022	FR_FR5	FR_FR5	Aluminum (Al)-Total	mg/L	0.0079
10	8	2022	FR_FR5	FR_FR5	Ammonia, Total (as N)	mg/L	0.0082
10	8	2022	FR_FR5	FR_FR5	Antimony (Sb)-Dissolved	mg/L	0.00015
10	8	2022	FR_FR5	FR_FR5	Antimony (Sb)-Total	mg/L	0.00012
10	8	2022	FR_FR5	FR_FR5	Arsenic (As)-Dissolved	mg/L	<0.0001
10	8	2022	FR_FR5	FR_FR5	Arsenic (As)-Total	mg/L	0.00018
10	8	2022	FR_FR5	FR_FR5	Barium (Ba)-Dissolved	mg/L	0.102
10	8	2022	FR_FR5	FR_FR5	Barium (Ba)-Total	mg/L	0.0936
10	8	2022	FR_FR5	FR_FR5	Beryllium (Be)-Dissolved	mg/L	<0.00002
10	8	2022	FR_FR5	FR_FR5	Beryllium (Be)-Total	mg/L	<0.00002
10	8	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Dissolved	mg/L	<0.00005
10	8	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Total	mg/L	<0.00005
10	8	2022	FR_FR5	FR_FR5	Boron (B)-Dissolved	mg/L	0.012
10	8	2022	FR_FR5	FR_FR5	Boron (B)-Total	mg/L	0.012
10	8	2022	FR_FR5	FR_FR5	Bromide (Br)	mg/L	<0.05
10	8	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Dissolved	mg/L	0.0000414
10	8	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Total	mg/L	0.000051
10	8	2022	FR_FR5	FR_FR5	Calcium (Ca)-Dissolved	mg/L	134
10	8	2022	FR_FR5	FR_FR5	Calcium (Ca)-Total	mg/L	119
10	8	2022	FR_FR5	FR_FR5	Chloride (Cl)	mg/L	2.35
10	8	2022	FR_FR5	FR_FR5	Chromium (Cr)-Dissolved	mg/L	0.00011
10	8	2022	FR_FR5	FR_FR5	Chromium (Cr)-Total	mg/L	0.00013
10	8	2022	FR_FR5	FR_FR5	Cobalt (Co)-Dissolved	mg/L	<0.0001
10	8	2022	FR_FR5	FR_FR5	Cobalt (Co)-Total	mg/L	<0.0001
10	8	2022	FR_FR5	FR_FR5	Conductivity	uS/cm	782
10	8	2022	FR_FR5	FR_FR5	Copper (Cu)-Dissolved	mg/L	<0.0002
10	8	2022	FR_FR5	FR_FR5	Copper (Cu)-Total	mg/L	<0.0005
10	8	2022	FR_FR5	FR_FR5	Dissolved Organic Carbon	mg/L	<0.5
10	8	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	mg/L	7.6
10	8	2022	FR_FR5	FR_FR5	Fluoride	mg/L	0.159
10	8	2022	FR_FR5	FR_FR5	Hardness - Dissolved (as CaCO3)	mg/L	561
10	8	2022	FR_FR5	FR_FR5	Iron (Fe)-Dissolved	mg/L	<0.01
10	8	2022	FR_FR5	FR_FR5	Iron (Fe)-Total	mg/L	0.015
10	8	2022	FR_FR5	FR_FR5	Lead (Pb)-Dissolved	mg/L	<0.00005
10	8	2022	FR_FR5	FR_FR5	Lead (Pb)-Total	mg/L	<0.00005
10	8	2022	FR_FR5	FR_FR5	Lithium (Li)-Dissolved	mg/L	0.0422
10	8	2022	FR_FR5	FR_FR5	Lithium (Li)-Total	mg/L	0.036
10	8	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Dissolved	mg/L	54.9
10	8	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Total	mg/L	52.7
10	8	2022	FR_FR5	FR_FR5	Manganese (Mn)-Dissolved	mg/L	0.00199
10	8	2022	FR_FR5	FR_FR5	Manganese (Mn)-Total	mg/L	0.0032
10	8	2022	FR_FR5	FR_FR5	Mercury (Hg)-Dissolved	mg/L	<0.000005
10	8	2022	FR_FR5	FR_FR5	Mercury (Hg)-Total	mg/L	<0.000005
10	8	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Dissolved	mg/L	0.00159
10	8	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Total	mg/L	0.00125
10	8	2022	FR_FR5	FR_FR5	Nickel (Ni)-Dissolved	mg/L	0.00156
10	8	2022	FR_FR5	FR_FR5	Nickel (Ni)-Total	mg/L	0.00211
10	8	2022	FR_FR5	FR_FR5	Nitrate (as N)	mg/L	14.9
10	8	2022	FR_FR5	FR_FR5	Nitrite (as N)	mg/L	0.0058
10	8	2022	FR_FR5	FR_FR5	ORP	mV	330
10	8	2022	FR_FR5	FR_FR5	ORP, Field	mV	186.9
10	8	2022	FR_FR5	FR_FR5	Orthophosphate	mg/L	<0.001
10	8	2022	FR_FR5	FR_FR5	pH, Field	pH	7.85
10	8	2022	FR_FR5	FR_FR5	pH, Lab	pH	8.19
10	8	2022	FR_FR5	FR_FR5	Phosphorus (P)-Total	mg/L	0.0049
10	8	2022	FR_FR5	FR_FR5	Potassium (K)-Dissolved	mg/L	1.68
10	8	2022	FR_FR5	FR_FR5	Potassium (K)-Total	mg/L	1.63
10	8	2022	FR_FR5	FR_FR5	Selenium (Se)-Dissolved	mg/L	0.0735
10	8	2022	FR_FR5	FR_FR5	Selenium (Se)-Total	mg/L	0.0643
10	8	2022	FR_FR5	FR_FR5	Silicon (Si)-Dissolved	mg/L	2.5
10	8	2022	FR_FR5	FR_FR5	Silicon (Si)-Total	mg/L	2.3
10	8	2022	FR_FR5	FR_FR5	Silver (Ag)-Dissolved	mg/L	<0.00001
10	8	2022	FR_FR5	FR_FR5	Silver (Ag)-Total	mg/L	<0.00001
10	8	2022	FR_FR5	FR_FR5	Sodium (Na)-Dissolved	mg/L	3.13
10	8	2022	FR_FR5	FR_FR5	Sodium (Na)-Total	mg/L	3.04
10	8	2022	FR_FR5	FR_FR5	Strontium (Sr)-Dissolved	mg/L	0.192
10	8	2022	FR_FR5	FR_FR5	Strontium (Sr)-Total	mg/L	0.158
10	8	2022	FR_FR5	FR_FR5	Sulphate	mg/L	223
10	8	2022	FR_FR5	FR_FR5	Temperature, Field	deg c	13
10	8	2022	FR_FR5	FR_FR5	Thallium (Tl)-Dissolved	mg/L	<0.00001
10	8	2022	FR_FR5	FR_FR5	Thallium (Tl)-Total	mg/L	<0.00001
10	8	2022	FR_FR5	FR_FR5	Tin (Sn)-Dissolved	mg/L	<0.0001
10	8	2022	FR_FR5	FR_FR5	Tin (Sn)-Total	mg/L	<0.0001
10	8	2022	FR_FR5	FR_FR5	Titanium (Ti)-Dissolved	mg/L	<0.0003
10	8	2022	FR_FR5	FR_FR5	Titanium (Ti)-Total	mg/L	<0.0003
10	8	2022	FR_FR5	FR_FR5	Total Dissolved Solids	mg/L	576
10	8	2022	FR_FR5	FR_FR5	Total Kjeldahl Nitrogen	mg/L	<0.05
10	8	2022	FR_FR5	FR_FR5	Total Organic Carbon	mg/L	<0.5
10	8	2022	FR_FR5	FR_FR5	Total Suspended Solids	mg/L	1.3
10	8	2022	FR_FR5	FR_FR5	Turbidity, Field	NTU	1.24
10	8	2022	FR_FR5	FR_FR5	Turbidity, Lab	NTU	0.25
10	8	2022	FR_FR5	FR_FR5	Uranium (U)-Dissolved	mg/L	0.00338
10	8	2022	FR_FR5	FR_FR5	Uranium (U)-Total	mg/L	0.00274
10	8	2022	FR_FR5	FR_FR5	Vanadium (V)-Dissolved	mg/L	<0.0005
10	8	2022	FR_FR5	FR_FR5	Vanadium (V)-Total	mg/L	<0.0005
10	8	2022	FR_FR5	FR_FR5	Zinc (Zn)-Dissolved	mg/L	0.0017
10	8	2022	FR_FR5	FR_FR5	Zinc (Zn)-Total	mg/L	0.0032
7	9	2022	FR_FR5	FR_FR5	Acidity (as CaCO3)	mg/L	<2
7	9	2022	FR_FR5	FR_FR5	Alkalinity, Bicarbonate (as CaCO3)	mg/L	224
7	9	2022	FR_FR5	FR_FR5	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
7	9	2022	FR_FR5	FR_FR5	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
7	9	2022	FR_FR5	FR_FR5	Alkalinity, Total (as CaCO3)	mg/L	224

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
7	9	2022	FR_FR5	FR_FR5	Aluminum (Al)-Dissolved	mg/L	0.003
7	9	2022	FR_FR5	FR_FR5	Aluminum (Al)-Total	mg/L	0.0101
7	9	2022	FR_FR5	FR_FR5	Ammonia, Total (as N)	mg/L	<0.005
7	9	2022	FR_FR5	FR_FR5	Antimony (Sb)-Dissolved	mg/L	0.00013
7	9	2022	FR_FR5	FR_FR5	Antimony (Sb)-Total	mg/L	0.00012
7	9	2022	FR_FR5	FR_FR5	Arsenic (As)-Dissolved	mg/L	<0.0001
7	9	2022	FR_FR5	FR_FR5	Arsenic (As)-Total	mg/L	0.00015
7	9	2022	FR_FR5	FR_FR5	Barium (Ba)-Dissolved	mg/L	0.0982
7	9	2022	FR_FR5	FR_FR5	Barium (Ba)-Total	mg/L	0.103
7	9	2022	FR_FR5	FR_FR5	Beryllium (Be)-Dissolved	mg/L	<0.00002
7	9	2022	FR_FR5	FR_FR5	Beryllium (Be)-Total	mg/L	<0.00002
7	9	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Dissolved	mg/L	<0.00005
7	9	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Total	mg/L	<0.00005
7	9	2022	FR_FR5	FR_FR5	Boron (B)-Dissolved	mg/L	0.012
7	9	2022	FR_FR5	FR_FR5	Boron (B)-Total	mg/L	0.012
7	9	2022	FR_FR5	FR_FR5	Bromide (Br)	mg/L	<0.05
7	9	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Dissolved	mg/L	0.0000374
7	9	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Total	mg/L	0.0000383
7	9	2022	FR_FR5	FR_FR5	Calcium (Ca)-Dissolved	mg/L	119
7	9	2022	FR_FR5	FR_FR5	Calcium (Ca)-Total	mg/L	129
7	9	2022	FR_FR5	FR_FR5	Chloride (Cl)	mg/L	2.88
7	9	2022	FR_FR5	FR_FR5	Chromium (Cr)-Dissolved	mg/L	0.00015
7	9	2022	FR_FR5	FR_FR5	Chromium (Cr)-Total	mg/L	0.00014
7	9	2022	FR_FR5	FR_FR5	Cobalt (Co)-Dissolved	mg/L	<0.0001
7	9	2022	FR_FR5	FR_FR5	Cobalt (Co)-Total	mg/L	<0.0001
7	9	2022	FR_FR5	FR_FR5	Conductivity	uS/cm	906
7	9	2022	FR_FR5	FR_FR5	Copper (Cu)-Dissolved	mg/L	0.0002
7	9	2022	FR_FR5	FR_FR5	Copper (Cu)-Total	mg/L	<0.0005
7	9	2022	FR_FR5	FR_FR5	Dissolved Organic Carbon	mg/L	<0.5
7	9	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	mg/L	9.93
7	9	2022	FR_FR5	FR_FR5	Fluoride	mg/L	0.166
7	9	2022	FR_FR5	FR_FR5	Hardness - Dissolved (as CaCO3)	mg/L	544
7	9	2022	FR_FR5	FR_FR5	Iron (Fe)-Dissolved	mg/L	<0.01
7	9	2022	FR_FR5	FR_FR5	Iron (Fe)-Total	mg/L	<0.01
7	9	2022	FR_FR5	FR_FR5	Lead (Pb)-Dissolved	mg/L	<0.00005
7	9	2022	FR_FR5	FR_FR5	Lead (Pb)-Total	mg/L	<0.00005
7	9	2022	FR_FR5	FR_FR5	Lithium (Li)-Dissolved	mg/L	0.0441
7	9	2022	FR_FR5	FR_FR5	Lithium (Li)-Total	mg/L	0.0378
7	9	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Dissolved	mg/L	59.9
7	9	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Total	mg/L	62.7
7	9	2022	FR_FR5	FR_FR5	Manganese (Mn)-Dissolved	mg/L	0.00162
7	9	2022	FR_FR5	FR_FR5	Manganese (Mn)-Total	mg/L	0.00221
7	9	2022	FR_FR5	FR_FR5	Mercury (Hg)-Dissolved	mg/L	<0.000005
7	9	2022	FR_FR5	FR_FR5	Mercury (Hg)-Total	mg/L	<0.000005
7	9	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Dissolved	mg/L	0.00113
7	9	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Total	mg/L	0.00118
7	9	2022	FR_FR5	FR_FR5	Nickel (Ni)-Dissolved	mg/L	0.00156
7	9	2022	FR_FR5	FR_FR5	Nickel (Ni)-Total	mg/L	0.00176
7	9	2022	FR_FR5	FR_FR5	Nitrate (as N)	mg/L	17.3
7	9	2022	FR_FR5	FR_FR5	Nitrite (as N)	mg/L	0.0071
7	9	2022	FR_FR5	FR_FR5	ORP	mV	308
7	9	2022	FR_FR5	FR_FR5	ORP, Field	mV	137.6
7	9	2022	FR_FR5	FR_FR5	Orthophosphate	mg/L	<0.001
7	9	2022	FR_FR5	FR_FR5	pH, Field	pH	8.24
7	9	2022	FR_FR5	FR_FR5	pH, Lab	pH	8.27
7	9	2022	FR_FR5	FR_FR5	Phosphorus (P)-Total	mg/L	<0.002
7	9	2022	FR_FR5	FR_FR5	Potassium (K)-Dissolved	mg/L	1.81
7	9	2022	FR_FR5	FR_FR5	Potassium (K)-Total	mg/L	1.71
7	9	2022	FR_FR5	FR_FR5	Selenium (Se)-Dissolved	mg/L	0.083
7	9	2022	FR_FR5	FR_FR5	Selenium (Se)-Total	mg/L	0.0722
7	9	2022	FR_FR5	FR_FR5	Silicon (Si)-Dissolved	mg/L	2.29
7	9	2022	FR_FR5	FR_FR5	Silicon (Si)-Total	mg/L	2.7
7	9	2022	FR_FR5	FR_FR5	Silver (Ag)-Dissolved	mg/L	<0.00001
7	9	2022	FR_FR5	FR_FR5	Silver (Ag)-Total	mg/L	<0.00001
7	9	2022	FR_FR5	FR_FR5	Sodium (Na)-Dissolved	mg/L	3.07
7	9	2022	FR_FR5	FR_FR5	Sodium (Na)-Total	mg/L	3.21
7	9	2022	FR_FR5	FR_FR5	Strontium (Sr)-Dissolved	mg/L	0.14
7	9	2022	FR_FR5	FR_FR5	Strontium (Sr)-Total	mg/L	0.171
7	9	2022	FR_FR5	FR_FR5	Sulphate	mg/L	263
7	9	2022	FR_FR5	FR_FR5	Temperature, Field	deg c	7.4
7	9	2022	FR_FR5	FR_FR5	Thallium (Tl)-Dissolved	mg/L	<0.00001
7	9	2022	FR_FR5	FR_FR5	Thallium (Tl)-Total	mg/L	<0.00001
7	9	2022	FR_FR5	FR_FR5	Tin (Sn)-Dissolved	mg/L	<0.0001
7	9	2022	FR_FR5	FR_FR5	Tin (Sn)-Total	mg/L	<0.0001
7	9	2022	FR_FR5	FR_FR5	Titanium (Ti)-Dissolved	mg/L	<0.0003
7	9	2022	FR_FR5	FR_FR5	Titanium (Ti)-Total	mg/L	<0.0003
7	9	2022	FR_FR5	FR_FR5	Total Dissolved Solids	mg/L	696
7	9	2022	FR_FR5	FR_FR5	Total Kjeldahl Nitrogen	mg/L	0.122
7	9	2022	FR_FR5	FR_FR5	Total Organic Carbon	mg/L	<0.5
7	9	2022	FR_FR5	FR_FR5	Total Suspended Solids	mg/L	1
7	9	2022	FR_FR5	FR_FR5	Turbidity, Field	NTU	-4.91
7	9	2022	FR_FR5	FR_FR5	Turbidity, Lab	NTU	0.28
7	9	2022	FR_FR5	FR_FR5	Uranium (U)-Dissolved	mg/L	0.00291
7	9	2022	FR_FR5	FR_FR5	Uranium (U)-Total	mg/L	0.00291
7	9	2022	FR_FR5	FR_FR5	Vanadium (V)-Dissolved	mg/L	<0.0005
7	9	2022	FR_FR5	FR_FR5	Vanadium (V)-Total	mg/L	0.00053
7	9	2022	FR_FR5	FR_FR5	Zinc (Zn)-Dissolved	mg/L	0.0014
7	9	2022	FR_FR5	FR_FR5	Zinc (Zn)-Total	mg/L	<0.003
4	10	2022	FR_FR5	FR_FR5	Acidity (as CaCO3)	mg/L	<2
4	10	2022	FR_FR5	FR_FR5	Alkalinity, Bicarbonate (as CaCO3)	mg/L	250
4	10	2022	FR_FR5	FR_FR5	Alkalinity, Carbonate (as CaCO3)	mg/L	<1
4	10	2022	FR_FR5	FR_FR5	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
4	10	2022	FR_FR5	FR_FR5	Alkalinity, Total (as CaCO3)	mg/L	250
4	10	2022	FR_FR5	FR_FR5	Aluminum (Al)-Dissolved	mg/L	<0.001
4	10	2022	FR_FR5	FR_FR5	Aluminum (Al)-Total	mg/L	0.0055
4	10	2022	FR_FR5	FR_FR5	Ammonia, Total (as N)	mg/L	0.006
4	10	2022	FR_FR5	FR_FR5	Antimony (Sb)-Dissolved	mg/L	0.00011
4	10	2022	FR_FR5	FR_FR5	Antimony (Sb)-Total	mg/L	0.00011
4	10	2022	FR_FR5	FR_FR5	Arsenic (As)-Dissolved	mg/L	<0.0001
4	10	2022	FR_FR5	FR_FR5	Arsenic (As)-Total	mg/L	<0.0001
4	10	2022	FR_FR5	FR_FR5	Barium (Ba)-Dissolved	mg/L	0.0979
4	10	2022	FR_FR5	FR_FR5	Barium (Ba)-Total	mg/L	0.101
4	10	2022	FR_FR5	FR_FR5	Beryllium (Be)-Dissolved	mg/L	<0.00002
4	10	2022	FR_FR5	FR_FR5	Beryllium (Be)-Total	mg/L	<0.00002
4	10	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Dissolved	mg/L	<0.00005
4	10	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Total	mg/L	<0.00005
4	10	2022	FR_FR5	FR_FR5	Boron (B)-Dissolved	mg/L	0.011
4	10	2022	FR_FR5	FR_FR5	Boron (B)-Total	mg/L	0.011
4	10	2022	FR_FR5	FR_FR5	Bromide (Br)	mg/L	<0.25
4	10	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Dissolved	mg/L	0.0000222
4	10	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Total	mg/L	0.0000261

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
4	10	2022	FR_FR5	FR_FR5	Calcium (Ca)-Dissolved	mg/L	125
4	10	2022	FR_FR5	FR_FR5	Calcium (Ca)-Total	mg/L	131
4	10	2022	FR_FR5	FR_FR5	Chloride (Cl)	mg/L	5.33
4	10	2022	FR_FR5	FR_FR5	Chromium (Cr)-Dissolved	mg/L	0.00012
4	10	2022	FR_FR5	FR_FR5	Chromium (Cr)-Total	mg/L	0.00015
4	10	2022	FR_FR5	FR_FR5	Cobalt (Co)-Dissolved	mg/L	<0.0001
4	10	2022	FR_FR5	FR_FR5	Cobalt (Co)-Total	mg/L	<0.0001
4	10	2022	FR_FR5	FR_FR5	Conductivity	uS/cm	934
4	10	2022	FR_FR5	FR_FR5	Copper (Cu)-Dissolved	mg/L	<0.0002
4	10	2022	FR_FR5	FR_FR5	Copper (Cu)-Total	mg/L	<0.0005
4	10	2022	FR_FR5	FR_FR5	Dissolved Organic Carbon	mg/L	<0.5
4	10	2022	FR_FR5	FR_FR5	Fluoride	mg/L	0.135
4	10	2022	FR_FR5	FR_FR5	Hardness - Dissolved (as CaCO3)	mg/L	539
4	10	2022	FR_FR5	FR_FR5	Iron (Fe)-Dissolved	mg/L	<0.01
4	10	2022	FR_FR5	FR_FR5	Iron (Fe)-Total	mg/L	<0.01
4	10	2022	FR_FR5	FR_FR5	Lead (Pb)-Dissolved	mg/L	<0.00005
4	10	2022	FR_FR5	FR_FR5	Lead (Pb)-Total	mg/L	<0.00005
4	10	2022	FR_FR5	FR_FR5	Lithium (Li)-Dissolved	mg/L	0.045
4	10	2022	FR_FR5	FR_FR5	Lithium (Li)-Total	mg/L	0.0399
4	10	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Dissolved	mg/L	55.1
4	10	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Total	mg/L	61.9
4	10	2022	FR_FR5	FR_FR5	Manganese (Mn)-Dissolved	mg/L	0.0015
4	10	2022	FR_FR5	FR_FR5	Manganese (Mn)-Total	mg/L	0.0016
4	10	2022	FR_FR5	FR_FR5	Mercury (Hg)-Dissolved	mg/L	<0.000005
4	10	2022	FR_FR5	FR_FR5	Mercury (Hg)-Total	mg/L	<0.000005
4	10	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Dissolved	mg/L	0.00123
4	10	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Total	mg/L	0.0013
4	10	2022	FR_FR5	FR_FR5	Nickel (Ni)-Dissolved	mg/L	0.00102
4	10	2022	FR_FR5	FR_FR5	Nickel (Ni)-Total	mg/L	0.0011
4	10	2022	FR_FR5	FR_FR5	Nitrate (as N)	mg/L	19.3
4	10	2022	FR_FR5	FR_FR5	Nitrite (as N)	mg/L	0.0069
4	10	2022	FR_FR5	FR_FR5	ORP	mV	305
4	10	2022	FR_FR5	FR_FR5	Orthophosphate	mg/L	<0.001
4	10	2022	FR_FR5	FR_FR5	pH, Lab	pH	8.27
4	10	2022	FR_FR5	FR_FR5	Phosphorus (P)-Total	mg/L	<0.002
4	10	2022	FR_FR5	FR_FR5	Potassium (K)-Dissolved	mg/L	1.86
4	10	2022	FR_FR5	FR_FR5	Potassium (K)-Total	mg/L	1.78
4	10	2022	FR_FR5	FR_FR5	Selenium (Se)-Dissolved	mg/L	0.0702
4	10	2022	FR_FR5	FR_FR5	Selenium (Se)-Total	mg/L	0.0676
4	10	2022	FR_FR5	FR_FR5	Silicon (Si)-Dissolved	mg/L	2.3
4	10	2022	FR_FR5	FR_FR5	Silicon (Si)-Total	mg/L	2.28
4	10	2022	FR_FR5	FR_FR5	Silver (Ag)-Dissolved	mg/L	<0.00001
4	10	2022	FR_FR5	FR_FR5	Silver (Ag)-Total	mg/L	<0.00001
4	10	2022	FR_FR5	FR_FR5	Sodium (Na)-Dissolved	mg/L	3.52
4	10	2022	FR_FR5	FR_FR5	Sodium (Na)-Total	mg/L	3.51
4	10	2022	FR_FR5	FR_FR5	Strontium (Sr)-Dissolved	mg/L	0.165
4	10	2022	FR_FR5	FR_FR5	Strontium (Sr)-Total	mg/L	0.17
4	10	2022	FR_FR5	FR_FR5	Sulphate	mg/L	294
4	10	2022	FR_FR5	FR_FR5	Thallium (Tl)-Dissolved	mg/L	<0.00001
4	10	2022	FR_FR5	FR_FR5	Thallium (Tl)-Total	mg/L	<0.00001
4	10	2022	FR_FR5	FR_FR5	Tin (Sn)-Dissolved	mg/L	<0.0001
4	10	2022	FR_FR5	FR_FR5	Tin (Sn)-Total	mg/L	<0.0001
4	10	2022	FR_FR5	FR_FR5	Titanium (Ti)-Dissolved	mg/L	<0.0003
4	10	2022	FR_FR5	FR_FR5	Titanium (Ti)-Total	mg/L	<0.0003
4	10	2022	FR_FR5	FR_FR5	Total Dissolved Solids	mg/L	691
4	10	2022	FR_FR5	FR_FR5	Total Kjeldahl Nitrogen	mg/L	<0.05
4	10	2022	FR_FR5	FR_FR5	Total Organic Carbon	mg/L	<0.5
4	10	2022	FR_FR5	FR_FR5	Total Suspended Solids	mg/L	<1
4	10	2022	FR_FR5	FR_FR5	Turbidity, Lab	NTU	0.17
4	10	2022	FR_FR5	FR_FR5	Uranium (U)-Dissolved	mg/L	0.003
4	10	2022	FR_FR5	FR_FR5	Uranium (U)-Total	mg/L	0.00327
4	10	2022	FR_FR5	FR_FR5	Vanadium (V)-Dissolved	mg/L	<0.0005
4	10	2022	FR_FR5	FR_FR5	Vanadium (V)-Total	mg/L	<0.0005
4	10	2022	FR_FR5	FR_FR5	Zinc (Zn)-Dissolved	mg/L	<0.001
4	10	2022	FR_FR5	FR_FR5	Zinc (Zn)-Total	mg/L	<0.003
5	10	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	%	101.97
5	10	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	mg/L	9.96
5	10	2022	FR_FR5	FR_FR5	ORP, Field	mV	171.7
5	10	2022	FR_FR5	FR_FR5	pH, Field	pH	7.9
5	10	2022	FR_FR5	FR_FR5	Temperature, Field	deg c	8.64
7	11	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	%	83.6
7	11	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	mg/L	12.21
7	11	2022	FR_FR5	FR_FR5	ORP, Field	mV	174.8
7	11	2022	FR_FR5	FR_FR5	pH, Field	pH	8.11
7	11	2022	FR_FR5	FR_FR5	Temperature, Field	deg c	-0.1
5	12	2022	FR_FR5	FR_FR5	Acidity (as CaCO3)	mg/L	<2
5	12	2022	FR_FR5	FR_FR5	Alkalinity, Bicarbonate (as CaCO3)	mg/L	241
5	12	2022	FR_FR5	FR_FR5	Alkalinity, Carbonate (as CaCO3)	mg/L	6.8
5	12	2022	FR_FR5	FR_FR5	Alkalinity, Hydroxide (as CaCO3)	mg/L	<1
5	12	2022	FR_FR5	FR_FR5	Alkalinity, Total (as CaCO3)	mg/L	248
5	12	2022	FR_FR5	FR_FR5	Aluminum (Al)-Dissolved	mg/L	<0.001
5	12	2022	FR_FR5	FR_FR5	Aluminum (Al)-Total	mg/L	0.0051
5	12	2022	FR_FR5	FR_FR5	Ammonia, Total (as N)	mg/L	0.0094
5	12	2022	FR_FR5	FR_FR5	Antimony (Sb)-Dissolved	mg/L	0.0001
5	12	2022	FR_FR5	FR_FR5	Antimony (Sb)-Total	mg/L	<0.0001
5	12	2022	FR_FR5	FR_FR5	Arsenic (As)-Dissolved	mg/L	<0.0001
5	12	2022	FR_FR5	FR_FR5	Arsenic (As)-Total	mg/L	<0.0001
5	12	2022	FR_FR5	FR_FR5	Barium (Ba)-Dissolved	mg/L	0.116
5	12	2022	FR_FR5	FR_FR5	Barium (Ba)-Total	mg/L	0.108
5	12	2022	FR_FR5	FR_FR5	Beryllium (Be)-Dissolved	mg/L	<0.00002
5	12	2022	FR_FR5	FR_FR5	Beryllium (Be)-Total	mg/L	<0.00002
5	12	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Dissolved	mg/L	<0.00005
5	12	2022	FR_FR5	FR_FR5	Bismuth (Bi)-Total	mg/L	<0.00005
5	12	2022	FR_FR5	FR_FR5	Boron (B)-Dissolved	mg/L	<0.01
5	12	2022	FR_FR5	FR_FR5	Boron (B)-Total	mg/L	<0.01
5	12	2022	FR_FR5	FR_FR5	Bromide (Br)	mg/L	<0.25
5	12	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Dissolved	mg/L	0.0000201
5	12	2022	FR_FR5	FR_FR5	Cadmium (Cd)-Total	mg/L	0.000025
5	12	2022	FR_FR5	FR_FR5	Calcium (Ca)-Dissolved	mg/L	139
5	12	2022	FR_FR5	FR_FR5	Calcium (Ca)-Total	mg/L	136
5	12	2022	FR_FR5	FR_FR5	Chloride (Cl)	mg/L	6.6
5	12	2022	FR_FR5	FR_FR5	Chromium (Cr)-Dissolved	mg/L	0.00012
5	12	2022	FR_FR5	FR_FR5	Chromium (Cr)-Total	mg/L	0.00041
5	12	2022	FR_FR5	FR_FR5	Cobalt (Co)-Dissolved	mg/L	<0.0001
5	12	2022	FR_FR5	FR_FR5	Cobalt (Co)-Total	mg/L	<0.0001
5	12	2022	FR_FR5	FR_FR5	Conductivity	uS/cm	1010
5	12	2022	FR_FR5	FR_FR5	Copper (Cu)-Dissolved	mg/L	<0.0002
5	12	2022	FR_FR5	FR_FR5	Copper (Cu)-Total	mg/L	<0.0005
5	12	2022	FR_FR5	FR_FR5	Dissolved Organic Carbon	mg/L	<0.5
5	12	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	%	79.5
5	12	2022	FR_FR5	FR_FR5	Dissolved Oxygen, Field	mg/L	11.54

Table C.1: Raw Water Chemistry Data, FRO LAEMP, January to December, 2022

day	month	year	plotname	station	param	unit	value
5	12	2022	FR_FR5	FR_FR5	Fluoride	mg/L	0.148
5	12	2022	FR_FR5	FR_FR5	Hardness - Dissolved (as CaCO3)	mg/L	618
5	12	2022	FR_FR5	FR_FR5	Iron (Fe)-Dissolved	mg/L	<0.01
5	12	2022	FR_FR5	FR_FR5	Iron (Fe)-Total	mg/L	<0.01
5	12	2022	FR_FR5	FR_FR5	Lead (Pb)-Dissolved	mg/L	<0.00005
5	12	2022	FR_FR5	FR_FR5	Lead (Pb)-Total	mg/L	<0.00005
5	12	2022	FR_FR5	FR_FR5	Lithium (Li)-Dissolved	mg/L	0.0361
5	12	2022	FR_FR5	FR_FR5	Lithium (Li)-Total	mg/L	0.0385
5	12	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Dissolved	mg/L	65.9
5	12	2022	FR_FR5	FR_FR5	Magnesium (Mg)-Total	mg/L	64.7
5	12	2022	FR_FR5	FR_FR5	Manganese (Mn)-Dissolved	mg/L	0.00121
5	12	2022	FR_FR5	FR_FR5	Manganese (Mn)-Total	mg/L	0.00148
5	12	2022	FR_FR5	FR_FR5	Mercury (Hg)-Dissolved	mg/L	<0.000005
5	12	2022	FR_FR5	FR_FR5	Mercury (Hg)-Total	mg/L	<0.000005
5	12	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Dissolved	mg/L	0.000834
5	12	2022	FR_FR5	FR_FR5	Molybdenum (Mo)-Total	mg/L	0.000725
5	12	2022	FR_FR5	FR_FR5	Nickel (Ni)-Dissolved	mg/L	<0.0005
5	12	2022	FR_FR5	FR_FR5	Nickel (Ni)-Total	mg/L	<0.0005
5	12	2022	FR_FR5	FR_FR5	Nitrate (as N)	mg/L	18.9
5	12	2022	FR_FR5	FR_FR5	Nitrite (as N)	mg/L	<0.005
5	12	2022	FR_FR5	FR_FR5	ORP	mV	228
5	12	2022	FR_FR5	FR_FR5	ORP, Field	mV	250.9
5	12	2022	FR_FR5	FR_FR5	Orthophosphate	mg/L	0.0012
5	12	2022	FR_FR5	FR_FR5	pH, Field	pH	8.02
5	12	2022	FR_FR5	FR_FR5	pH, Lab	pH	8.3
5	12	2022	FR_FR5	FR_FR5	Phosphorus (P)-Total	mg/L	0.0106
5	12	2022	FR_FR5	FR_FR5	Potassium (K)-Dissolved	mg/L	1.59
5	12	2022	FR_FR5	FR_FR5	Potassium (K)-Total	mg/L	1.65
5	12	2022	FR_FR5	FR_FR5	Selenium (Se)-Dissolved	mg/L	0.0792
5	12	2022	FR_FR5	FR_FR5	Selenium (Se)-Total	mg/L	0.0768
5	12	2022	FR_FR5	FR_FR5	Silicon (Si)-Dissolved	mg/L	2.67
5	12	2022	FR_FR5	FR_FR5	Silicon (Si)-Total	mg/L	2.42
5	12	2022	FR_FR5	FR_FR5	Silver (Ag)-Dissolved	mg/L	<0.00001
5	12	2022	FR_FR5	FR_FR5	Silver (Ag)-Total	mg/L	<0.00001
5	12	2022	FR_FR5	FR_FR5	Sodium (Na)-Dissolved	mg/L	3.5
5	12	2022	FR_FR5	FR_FR5	Sodium (Na)-Total	mg/L	3.8
5	12	2022	FR_FR5	FR_FR5	Strontium (Sr)-Dissolved	mg/L	0.177
5	12	2022	FR_FR5	FR_FR5	Strontium (Sr)-Total	mg/L	0.172
5	12	2022	FR_FR5	FR_FR5	Sulphate	mg/L	309
5	12	2022	FR_FR5	FR_FR5	Temperature, Field	deg c	0.1
5	12	2022	FR_FR5	FR_FR5	Thallium (Tl)-Dissolved	mg/L	<0.00001
5	12	2022	FR_FR5	FR_FR5	Thallium (Tl)-Total	mg/L	<0.00001
5	12	2022	FR_FR5	FR_FR5	Tin (Sn)-Dissolved	mg/L	<0.0001
5	12	2022	FR_FR5	FR_FR5	Tin (Sn)-Total	mg/L	<0.0001
5	12	2022	FR_FR5	FR_FR5	Titanium (Ti)-Dissolved	mg/L	<0.0003
5	12	2022	FR_FR5	FR_FR5	Titanium (Ti)-Total	mg/L	<0.0003
5	12	2022	FR_FR5	FR_FR5	Total Dissolved Solids	mg/L	687
5	12	2022	FR_FR5	FR_FR5	Total Kjeldahl Nitrogen	mg/L	0.289
5	12	2022	FR_FR5	FR_FR5	Total Organic Carbon	mg/L	<0.5
5	12	2022	FR_FR5	FR_FR5	Total Suspended Solids	mg/L	1.7
5	12	2022	FR_FR5	FR_FR5	Turbidity, Lab	NTU	0.21
5	12	2022	FR_FR5	FR_FR5	Uranium (U)-Dissolved	mg/L	0.0027
5	12	2022	FR_FR5	FR_FR5	Uranium (U)-Total	mg/L	0.00297
5	12	2022	FR_FR5	FR_FR5	Vanadium (V)-Dissolved	mg/L	<0.0005
5	12	2022	FR_FR5	FR_FR5	Vanadium (V)-Total	mg/L	<0.0005
5	12	2022	FR_FR5	FR_FR5	Zinc (Zn)-Dissolved	mg/L	0.0011
5	12	2022	FR_FR5	FR_FR5	Zinc (Zn)-Total	mg/L	<0.003

Table C.2: Concentrations of Selenium Species Measured in Water Samples, FRO LAEMP, 2022

Water Body	Biological Monitoring Area	Sample Date	Selenate (µg/L)	Selenite (µg/L)	Dimethylselenoxide (µg/L)	Methylseleninic Acid (µg/L)	Methaneselenonic Acid (µg/L)	Selenocyanate (µg/L)	Selenomethionine (µg/L)	Selenosulphate (µg/L)	Unknown Species (µg/L)	Sum of Dimethylselenoxide and Methylseleninic Acid (µg/L)	Sum of Species (µg/L)	Ratio of Selenate:Non-Selenate Selenium Species	
Reference	RG_HENUP	12-Sep-22	1.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	1.02	-	
	RG_FO26	27-Jun-22	0.32	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	0.34	24.77	
		16-Sep-22	0.65	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	0.65	-
	RG_UFR1	18-Jan-22	0.81	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	0.81	-
		17-Feb-22	0.77	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	0.80	24.68
		16-Mar-22	0.82	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	0.83	54.60
		27-Jun-22	0.36	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	0.38	15.48
		19-Sep-22	0.62	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	0.66	15.85
5-Dec-22	0.76	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	0.83	12.32		
Mine-Exposed	RG_FRGHSC	21-Jan-22	102.00	0.09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	102.09	1172.41	
		18-Feb-22	115.00	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	115.08	1474.36	
		15-Mar-22	95.10	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	95.13	3279.31	
		29-Jun-22	68.20	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	68.28	897.37
		18-Sep-22	87.40	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	87.44	2241.03
	8-Dec-22	81.40	0.12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	81.52	656.45	
	RG_FODHE	13-Jun-22	3.73	0.09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	3.82	40.11
		19-Sep-22	16.30	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	16.35	313.46
	RG_FOUCL	13-Jun-22	5.94	0.33	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	6.27	17.89
		16-Sep-22	30.70	0.20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	30.90	150.49
	5-Dec-22	5-Dec-22	34.70	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	34.77	533.85
		13-Jun-22	9.68	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	9.73	182.64
	RG_FOUNDGD	15-Sep-22	49.40	0.16	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	49.56	312.66
		6-Dec-22	74.10	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	74.25	511.03
	RG_FODNGD	13-Jun-22	9.32	0.23	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	9.55	40.17
		15-Sep-22	75.50	0.19	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	75.71	393.23
	6-Dec-22	82.60	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	82.67	1131.51	
	RG_MP1	13-Jun-22	11.60	0.23	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	11.83	50.43
		12-Sep-22	65.40	0.24	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	65.64	278.30
	7-Dec-22	85.80	0.25	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	86.05	350.20	
	RG_FOUSH	13-Jun-22	11.70	0.30	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	12.00	39.39
		12-Sep-22	64.80	0.23	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	65.03	279.31
	6-Dec-22	90.10	0.10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	90.20	866.35	
	RG_FOUKI	18-Jan-22	69.70	0.23	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	69.93	307.05
		15-Feb-22	81.80	0.21	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	82.01	397.09
		15-Mar-22	74.40	0.24	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	74.64	304.92
		27-Jun-22	19.20	0.29	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	19.49	65.98
		13-Sep-22	62.40	0.23	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	62.64	277.33
	8-Dec-22	83.60	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	83.68	1045.00	
	RG_FOBKS	19-Jan-22	72.00	0.25	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	72.25	284.58
		15-Feb-22	84.10	0.17	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	84.27	497.63
		15-Mar-22	76.90	0.20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	77.10	392.35
		13-Jun-22	12.70	0.22	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	12.92	56.95
		13-Sep-22	62.20	0.29	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	1.3E-05	<0.01	-	62.50	213.75
	7-Nov-22	56.00	0.29	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	56.29	195.80	
	8-Dec-22	82.40	0.23	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	82.63	353.65	
	RG_SCDSB	8-Dec-22	82.20	0.08	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	82.30	990.36
	RG_SCOUTDS	20-Jan-22	98.50	0.27	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	98.77	363.47
		16-Feb-22	95.40	0.25	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	95.65	377.08
		15-Mar-22	85.80	0.26	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	86.09	330.00
		13-Jun-22	14.10	0.25	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	14.35	56.18
		13-Sep-22	59.30	0.37	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	59.69	161.14
	7-Nov-22	67.00	0.32	0.01	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	67.37	212.70	
	8-Dec-22	79.60	0.06	<0.01	0.04	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	-	79.71	1447.27	
	RG_FOBSC	20-Jan-22	80.70	0.36	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	81.06	222.93
		16-Feb-22	137.00	0.28	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	137.28	496.38
		17-Mar-22	109.00	0.27	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	109.29	402.21
		28-Jun-22	57.20	0.27	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	57.47	213.43
		14-Sep-22	114.00	0.08	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	114.10	1480.52
	7-Nov-22	69.90	0.27	0.02	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	70.22	261.80	
8-Dec-22	74.90	0.09	<0.01	0.05	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	-	75.05	881.18		
RG_FOBBCP	15-Mar-22	89.80	0.18	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	90.00	488.04	
	29-Jun-22	27.20	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	27.28	331.71	
15-Sep-22	64.80	0.08	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	64.90	830.77		
RG_FRCP1SW	28-Jun-22	30.80	0.09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	30.89	362.35	
	19-Sep-22	43.90	0.08	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	44.00	562.82	
RG_FRSC2	19-Jan-22	93.30	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	93.37	1332.86	
	16-Feb-22	108.00	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	108.08	1285.71	
	16-Mar-22	95.00	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	95.07	1397.06	
	28-Jun-22	37.60	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	37.68	475.95	
	14-Sep-22	68.30	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	68.37	975.71	
7-Dec-22	88.20	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	88.26	1603.64		
RG_FRUPO	20-Jan-22	101.00	0.09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	101.09	1109.89	
	17-Feb-22	95.20	0.1												

Table C.3: Raw Sediment Chemistry Data, FRO LAEMP, September, 2022

	Area	Rep	Date	Moisture	pH	Clay (<4um)	Silt (0.063mm - 0.0312mm)	Silt (0.0312mm - 0.004mm)	Sand (0.125mm - 0.063mm)	Sand (0.25mm - 0.125mm)	Sand (0.50mm - 0.25mm)	Sand (1.00mm - 0.50mm)
			Units	%		%	%	%	%	%	%	%
Reference	RG_HENUP	1	12-Sep-22	29.3	8.19	2	9.3	8.4	14.8	22.4	32.7	9.7
		2		33	8.4	2.5	8.1	9.3	10.8	20.3	30	14.2
		3		25.3	8.5	1.7	4.1	5.4	5	15.5	34.2	23.4
	RG_FO26	1	16-Sep-22	52.6	7.97	3.2	19.4	20	8.9	20.5	13.6	7
		2		43.5	8.16	2.2	10.5	9.9	14.8	29.2	23.5	5.4
		3		40.7	8.05	1.8	6.1	6.3	7.6	23.5	35.4	16.1
Mine-Exposed	RG_FOUKI	1	13-Sep-22	66.7	7.92	4.8	19.7	22.3	12.1	18.7	15.9	3.8
		2		45.9	8.27	5.1	17.3	21.1	9.8	11.8	11.8	10.7
		3		87.2	7.05	9.6	32.5	37.5	7.1	5.3	4.1	2.4
		4		85.5	7.8	8.4	29.6	34.3	11.2	8.8	3.7	2
		5		71.7	7.87	7.2	22.8	26.6	12	11.4	10.5	3.9
	RG_FOBKS	1	12-Sep-22	25.4	8.14	2.6	10	12.1	7.3	11.2	14	14.2
		2		27.8	8.23	2	4.8	6.1	5.2	7.8	18.5	29.8
		3		37	8.26	2.9	9.3	10.8	13.3	19.4	24.5	8.1
		4		32.9	8.19	2.6	7.9	8.8	12.9	24.4	29.5	6.4
		5		47.3	8.23	2.8	12.3	14.9	8.9	9.4	11	25.6
	RG_SCOUTDS ^a	1	14-Sep-22	77.5	8	4.9	19.2	21	11.5	11.5	14.9	9.2
		2		85.3	7.93	6.5	24.4	27.1	11	8.3	5.2	5.7
		3		78	8.1	5.5	19.5	21.9	11.3	10.8	11.3	12.5
		4		84.3	8.2	4.5	16.7	19.5	9.9	11.4	24.9	9.3
		5		69.7	8.15	4	16.6	17.6	13.8	16.1	16.7	6.7
		1	14-Feb-23	73.6	7.85	5.7	18.2	21.9	9.3	6.9	6.2	11.4
		2		39.7	8.4	4.2	7.8	11.2	5.9	8.4	29.6	25.7
		3		27.6	8.29	2.5	6.7	8.4	5.9	9.1	22.3	26
		4		38.2	8.33	2.8	5.7	8.3	4.8	9.6	48	16.3
		5		34.7	8.33	4.2	7.3	10.6	6.8	13.7	32.4	21.6
	RG_FOBCP	1	14-Sep-22	47	8.26	3.4	13.2	16	14.8	17.7	19.4	8.4
		2		32.6	8.28	1.7	3.7	5	5.1	11.7	42.6	26.3
		3		30.4	8.16	<1	3.3	4.3	6.1	27.1	43.1	12.8
		4		32	8.06	2.1	3.4	4.3	4.8	7.4	35	37.3
		5		42.9	8.33	3	14.7	15.1	20.1	26.1	13.2	2.6
	RG_FRUPO	1	18-Sep-22	51.6	8.08	5	19	23.2	10.5	12.8	11.5	12.4
		2		33.3	8.18	2.1	6.6	7.2	9.3	16	42.3	13.2
		3		49.5	8.04	5.1	17.5	21.5	11.4	18.6	21.3	4.4
		4		46.4	8.09	3.7	15.6	17.5	13.8	19.8	21.4	6.5
		5		45.8	8.15	3.2	18.7	18.1	22.7	25	6.9	2
RG_FO22	1	9-Sep-22	32.7	8.02	2.1	7.5	6	14.3	39	26.6	4.3	
	2		45.4	7.53	4.7	20.9	19.7	29.5	22.7	2.3	<1	
	3		37.5	7.9	2.5	9	9.3	12.3	40	21.6	1.7	
	4		34	7.95	1.4	2.9	3.5	3.7	21.6	58.2	7.1	
	5		34.2	8.11	1.6	9.2	8.2	13.1	23.1	24.2	14.5	

Note: "-" indicates no data available.

^a The sediment samples at RG_SCOUTDS had elevated concentrations of selenium and PAHs in 2022 compared to previous years, and these elevated concentrations correlated strongly with elevated water and fine particle content. The area was re-sampled in February 2023, resulting in 4 of 5 samples having lower moisture, fine particle, selenium and PAH content, while 1 of 5 samples had results consistent with the September 2022 samples.

Table C.3: Raw Sediment Chemistry Data, FRO LAEMP, September, 2022

	Area	Rep	Date	Moisture	pH	Sand (2.00mm - 1.00mm)	Gravel (>2mm)	carbon, inorganic [IC], <63 µm	carbon, total [TC], <63µm	Total Organic Carbon	Carbon, Inorganic [IC], (as CaCO3 equivalent)	Aluminum	Antimony
			Units	%		%	%	%	%	%	%	mg/kg	mg/kg
Reference	RG_HENUP	1	12-Sep-22	29.3	8.19	<1	<1	5.09	10.8	5.71	42.4	2120	<0.1
		2		33	8.4	3	1.8	5.5	10.8	5.3	45.8	2340	0.11
		3		25.3	8.5	6.1	4.6	5.93	11.1	5.17	49.4	1590	<0.1
	RG_FO26	1	16-Sep-22	52.6	7.97	4.6	2.8	2.12	7.02	4.9	17.7	5820	0.5
		2		43.5	8.16	2.7	1.8	2.43	5.24	2.81	20.2	5960	0.58
		3		40.7	8.05	2	1.2	2.2	4.99	2.79	18.3	5640	0.58
Mine-Exposed	RG_FOUKI	1	13-Sep-22	66.7	7.92	<1	1.8	2.27	11.9	9.63	19	6700	0.63
		2		45.9	8.27	4.6	7.8	1.97	10.5	8.53	16.4	6710	0.74
		3		87.2	7.05	1.5	<1	2.6	19.2	16.6	21.6	8500	0.76
		4		85.5	7.8	2	<1	2.41	16.6	14.2	20.1	4680	0.57
		5		71.7	7.87	2.3	3.3	2.08	14.6	12.5	17.4	4430	0.56
	RG_FOBKS	1	12-Sep-22	25.4	8.14	16	12.6	2	7.11	5.11	16.7	8730	0.62
		2		27.8	8.23	15.5	10.3	1.77	4.56	2.79	14.8	5630	0.61
		3		37	8.26	5.3	6.4	2	8.65	6.65	16.6	4640	0.63
		4		32.9	8.19	2.8	4.7	1.73	5.7	3.97	14.4	5000	0.65
		5		47.3	8.23	14.5	<1	1.5	6.7	5.2	12.5	5280	0.58
	RG_SCOUTDS ^a	1	14-Sep-22	77.5	8	3.9	3.9	1.94	10.7	8.76	16.2	4850	0.54
		2		85.3	7.93	4	7.8	2.17	13.3	11.1	18.1	3560	0.39
		3		78	8.1	7.2	<1	2	10.4	8.4	16.7	4990	0.49
		4		84.3	8.2	2.6	1.2	1.82	10.3	8.48	15.2	4960	0.52
		5		69.7	8.15	2.7	5.8	1.92	9.18	7.26	16	4610	0.48
		1	14-Feb-23	73.6	7.85	11.4	9	2.38	14.4	12	19.9	3340	0.45
		2		39.7	8.4	4.9	2.3	1.55	6.84	5.29	12.9	5420	0.68
		3		27.6	8.29	12.3	6.8	1.61	7.1	5.49	13.4	4710	0.64
		4		38.2	8.33	1.4	3.1	1.65	5.56	3.91	13.8	4980	0.67
		5		34.7	8.33	1.6	1.8	1.59	7.19	5.6	13.2	4820	0.62
	RG_FOBBCP	1	14-Sep-22	47	8.26	1.7	5.4	2.13	7.29	5.16	17.7	5200	0.59
		2		32.6	8.28	2.3	1.6	1.29	4.01	2.72	10.8	5400	0.73
		3		30.4	8.16	1.4	1.9	1.41	3.72	2.31	11.7	5320	0.73
		4		32	8.06	4.9	<1	1.2	4.98	3.78	10	7920	0.89
		5		42.9	8.33	1.9	3.3	2.04	6.69	4.65	17	6370	0.57
	RG_FRUPO	1	18-Sep-22	51.6	8.08	2.5	3.1	1.77	9.44	7.67	14.7	5210	0.65
		2		33.3	8.18	2.7	<1	1.49	4.2	2.71	12.4	5980	0.67
		3		49.5	8.04	<1	<1	1.83	7.32	5.49	15.3	6680	0.65
		4		46.4	8.09	<1	1.1	1.82	6.88	5.06	15.1	6100	0.59
		5		45.8	8.15	1.5	1.9	1.98	6.22	4.24	16.5	5500	0.53
RG_FO22	1	9-Sep-22	32.7	8.02	<1	<1	0.862	2.94	2.08	7.18	7810	0.69	
	2		45.4	7.53	<1	<1	1.32	6.88	5.56	11	7620	0.61	
	3		37.5	7.9	<1	3.2	1.03	5.44	4.41	8.61	7800	0.65	
	4		34	7.95	1.3	<1	0.741	5.41	4.67	6.17	7990	0.72	
	5		34.2	8.11	4.5	1.6	0.872	3.8	2.93	7.27	7140	0.74	

Note: "-" indicates no data available.

^a The sediment samples at RG_SCOUTDS had elevated concentrations of selenium and PAH content, while samples having lower moisture, fine particle, and selenum content, while

Table C.3: Raw Sediment Chemistry Data, FRO LAEMP, September, 2022

	Area	Rep	Date	Moisture	pH	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel
				Units	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Reference	RG_HENUP	1	12-Sep-22	29.3	8.19	1.76	18.5	0.14	<0.2	<5	0.436	304000	7.55	1.2	1.89	3550	2.26	8.5	46600	120	0.0081	0.46	8.04
		2		33	8.4	1.84	22.4	0.17	<0.2	<5	0.352	372000	7.78	1.39	2.19	3900	2.68	9.9	51300	138	0.008	0.49	9.36
		3		25.3	8.5	1.34	14.7	0.12	<0.2	<5	0.352	343000	6.07	0.97	1.54	2770	1.93	7.1	37500	108	0.0075	0.34	6.56
	RG_FO26	1	16-Sep-22	52.6	7.97	5.06	139	0.52	<0.2	5.6	0.755	54500	10.5	5.57	13.6	13800	8.85	8.6	11300	497	0.0353	1.46	19.2
		2		43.5	8.16	5.27	144	0.54	<0.2	<5	0.731	62400	10.3	5.84	13.6	15700	9.18	9.8	11900	449	0.0306	1.62	19.3
		3		40.7	8.05	5.37	144	0.5	<0.2	<5	0.747	59700	9.95	5.67	13.2	14900	8.62	8.4	10600	469	0.0307	1.47	18.8
Mine-Exposed	RG_FOUKI	1	13-Sep-22	66.7	7.92	5.51	247	0.56	<0.2	6.4	1.87	86000	12.6	8.71	15.3	15500	9.37	10.7	12600	609	0.041	1.83	45.9
		2		45.9	8.27	5.72	208	0.62	<0.2	7	2.28	80600	12.4	7.94	16.5	17800	11.8	11.6	12200	736	0.0418	2.46	53.6
		3		87.2	7.05	4.8	299	0.63	<0.2	8.3	3.09	104000	13.4	9.12	18.8	16800	9.95	9.6	14600	926	0.0384	2.29	60.4
		4		85.5	7.8	4.7	268	0.5	<0.2	6.6	2.6	92100	9.73	8.6	16.1	13400	9	8.1	12200	949	0.0388	1.85	52.2
		5		71.7	7.87	4.43	176	0.53	<0.2	5.2	2.11	69100	8.87	6.82	13.7	13000	8.54	7	11500	624	0.0363	1.66	43.6
	RG_FOBKS	1	12-Sep-22	25.4	8.14	5.95	198	0.67	<0.2	10	1.43	70600	14.5	5.47	12.6	21300	7.85	11.8	10200	468	0.0263	1.65	32.7
		2		27.8	8.23	5.24	160	0.58	<0.2	5.9	1.38	75400	10.4	5.06	12.4	19300	7.07	9.5	10100	425	0.0252	1.33	30.3
		3		37	8.26	4.75	200	0.54	<0.2	<5	1.44	63800	8.19	6.02	11.1	13000	7.21	8.3	10400	448	0.0319	1.22	33.9
		4		32.9	8.19	5.04	161	0.52	<0.2	<5	1.42	57900	8.92	5.83	12.1	13700	7.81	9.3	10400	437	0.0288	1.26	35.5
		5		47.3	8.23	4.51	216	0.5	<0.2	<5	1.58	60100	9.91	6.01	13.3	12300	7.5	8.6	11700	432	0.0345	1.33	36.1
	RG_SCOUTDS ^a	1	14-Sep-22	77.5	8	4.79	166	0.49	<0.2	6.7	2.1	68900	9.71	7.07	13.2	15700	8.3	7.8	11200	590	0.0331	1.55	45.8
		2		85.3	7.93	4.02	180	0.41	<0.2	5.5	2.79	83400	7.71	7.83	14	11700	8.51	6.1	11200	659	0.034	1.45	54.6
		3		78	8.1	4.68	184	0.52	<0.2	5.5	2.07	64600	9.39	7.3	14.6	14700	8.51	8	9590	570	0.035	1.51	47.7
		4		84.3	8.2	4.78	190	0.47	<0.2	5.4	2.1	64700	9.85	7.69	13.9	14500	8.69	8	9860	607	0.0349	1.5	49.4
		5		69.7	8.15	4.43	154	0.47	<0.2	5.1	1.85	68000	9.29	6.78	12.8	13900	8.03	8	10800	514	0.0324	1.38	42.4
	RG_FOBCP	1	14-Sep-22	73.6	7.85	3.2	217	0.38	<0.2	<5	2.72	86800	12.6	5.23	12.5	13600	6.54	6	9540	530	0.0373	2.04	49.2
		2		39.7	8.4	4.92	190	0.56	<0.2	6	1.7	57600	16.9	6.76	14.1	16200	8.34	8.4	7980	606	0.0395	2.46	46.4
		3		27.6	8.29	5.42	193	0.49	<0.2	<5	1.57	61000	22.3	6.42	12.9	16800	8	8	8270	585	0.0464	3.1	49.1
		4		38.2	8.33	5.38	232	0.55	<0.2	<5	1.58	59600	13.4	6.85	13.2	19000	7.83	8.3	7630	693	0.036	2.03	44.6
		5		34.7	8.33	4.93	206	0.49	<0.2	<5	1.7	69300	13.9	6.53	12.4	16800	7.93	7.8	8360	657	0.0337	2.3	43.9
	RG_FRUPO	1	18-Sep-22	47	8.26	4.62	210	0.5	<0.2	5.2	1.99	72600	9.75	6.65	12.5	13700	7.15	8.3	10600	459	0.0339	1.46	47.1
		2		32.6	8.28	5.92	200	0.6	<0.2	5.1	1.37	44400	9.89	5.42	12.7	16900	7.9	10	7810	437	0.027	1.47	35.6
		3		30.4	8.16	6.16	184	0.63	<0.2	5.2	1.35	61900	10.7	5.74	11.2	22400	7.5	7.9	9030	464	0.0308	1.59	34.4
		4		32	8.06	6.45	266	0.82	<0.2	8.5	1.55	41900	13.5	6.18	15.1	19100	9.09	11.3	6780	500	0.0281	1.93	39.9
		5		42.9	8.33	4.78	215	0.55	<0.2	7.5	1.84	71900	11.9	5.74	11.7	12800	7.15	9.8	13300	465	0.0317	1.24	51.4
	RG_FO22	1	9-Sep-22	51.6	8.08	5	186	0.48	<0.2	<5	1.39	46600	10.4	5.33	15.2	11900	7.77	6.9	10100	427	0.0436	1.55	28.1
		2		33.3	8.18	5.76	168	0.61	<0.2	<5	1.24	40300	10.5	5.43	12.4	15000	7.99	8.3	9160	416	0.0298	1.56	28.7
		3		49.5	8.04	5.36	197	0.55	<0.2	5.7	1.32	49200	12.7	5.86	14.2	13200	8.53	8.9	10800	444	0.0365	1.69	28.6
		4		46.4	8.09	5.14	175	0.58	<0.2	5.4	1.32	49600	11.4	5.56	12.5	13600	7.9	9	11500	427	0.0331	1.52	28.4
		5		45.8	8.15	4.76	156	0.5	<0.2	5	1.2	47900	10.6	5.01	11.4	11300	7.26	7.9	12300	382	0.0333	1.36	25.1

Note: "-" indicates no data available.

^a The sediment samples at RG_SCOUTDS had elevated concentrations of se samples having lower moisture, fine particle, selenium and PAH content, while

Table C.3: Raw Sediment Chemistry Data, FRO LAEMP, September, 2022

Area	Rep	Date	Moisture	pH	Phosphorus	Potassium	Selenium	Silver	Sodium	Strontium	Sulphur	Thallium	Tin	Titanium	Tungsten	Uranium	Vanadium	Zinc	Zirconium	Acenaphthene	Acenaphthylene	
		Units	%		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Reference	RG_HENUP	1	12-Sep-22	29.3	8.19	329	570	0.32	<0.1	196	141	<1000	0.057	<2	18.4	<0.5	0.622	7.66	41.3	<1	<0.05	<0.05
		2		33	8.4	505	660	0.39	<0.1	212	167	<1000	0.07	<2	25.3	<0.5	0.694	8.15	44.9	<1	<0.05	<0.05
		3		25.3	8.5	405	460	0.28	<0.1	187	155	<1000	<0.05	<2	15.9	<0.5	0.625	5.75	36.5	<1	<0.05	<0.05
	RG_FO26	1	16-Sep-22	52.6	7.97	1320	1280	0.99	0.15	74	59.4	<1000	0.196	<2	7	<0.5	0.87	21.5	90.2	<1	<0.05	<0.05
		2		43.5	8.16	1320	1260	0.83	0.13	75	68.1	<1000	0.189	<2	6.6	<0.5	0.819	22.2	90.9	<1	<0.05	<0.05
		3		40.7	8.05	1310	1230	0.75	0.13	71	68.8	<1000	0.204	<2	6.1	<0.5	0.837	23.3	93	<1	<0.05	<0.05
Mine-Exposed	RG_FOUKI	1	13-Sep-22	66.7	7.92	1390	1460	2.8	0.19	89	83.8	1200	0.197	<2	21.6	<0.5	1.4	28	153	1	0.117	<0.05
		2		45.9	8.27	1050	1350	21.2	0.22	90	84.7	1100	0.199	<2	21.7	<0.5	1.24	27	184	1.1	0.079	<0.05
		3		87.2	7.05	1600	1620	5.04	0.22	107	99.6	<1000	0.203	<2	17.1	<0.5	1.31	28.2	240	1	0.375	<0.074
		4		85.5	7.8	776	1010	3.56	0.21	86	76.7	1300	0.148	<2	21.1	<0.5	1.28	21.1	186	1.1	0.326	<0.073
		5		71.7	7.87	1310	940	3.22	0.18	74	67.8	<1000	0.146	<2	15.8	<0.5	1.11	19.7	157	1	0.157	<0.05
	RG_FOBKS	1	12-Sep-22	25.4	8.14	3850	2450	0.97	0.13	113	98.3	<1000	0.208	<2	10.5	<0.5	1.6	39.4	129	1.2	<0.05	<0.05
		2		27.8	8.23	1130	1430	0.9	0.12	72	95.8	<1000	0.171	<2	6.2	<0.5	1.02	28.7	121	<1	<0.05	<0.05
		3		37	8.26	1040	1120	1.23	0.12	68	70.3	<1000	0.161	<2	4.4	<0.5	0.966	22.1	122	<1	<0.05	<0.05
		4		32.9	8.19	1120	1160	1.01	0.13	67	68.8	<1000	0.18	<2	4.3	<0.5	0.982	23.5	126	<1	<0.05	<0.05
		5		47.3	8.23	986	1290	1.74	0.16	69	69	<1000	0.17	<2	8	<0.5	0.979	25.1	134	<1	0.087	<0.05
	RG_SCOUTDS ^a	1	14-Sep-22	77.5	8	1850	1120	2.75	0.16	80	66.9	1100	0.163	<2	15.6	<0.5	1.13	21.8	159	1.5	0.13	<0.05
		2		85.3	7.93	1050	800	3.39	0.19	74	74.2	1400	0.119	<2	14.2	<0.5	1.15	15.3	194	1.3	0.262	<0.074
		3		78	8.1	1420	1140	2.2	0.17	76	67.4	<1000	0.147	<2	18.2	<0.5	1.11	21.9	165	<1	0.241	<0.05
		4		84.3	8.2	1440	1090	1.74	0.17	80	76.5	<1000	0.158	<2	16	<0.5	1.11	21.4	167	<1	0.314	<0.069
		5		69.7	8.15	1430	940	1.93	0.15	72	66.4	<1000	0.138	<2	12.5	<0.5	1.03	19.6	147	<1	0.121	<0.05
	RG_FOBCP	1	14-Sep-22	73.6	7.85	1080	760	9.16	0.15	102	64.6	1700	0.125	<2	21	<0.5	1.03	15.6	175	1.1	0.14	<0.05
		2		39.7	8.4	1150	1260	2.02	0.14	73	71.4	<1000	0.192	<2	26.8	<0.5	1.03	25.2	143	1	0.058	<0.05
		3		27.6	8.29	1340	1030	1.62	0.13	72	73	<1000	0.157	<2	22.4	<0.5	1.13	22.6	136	<1	<0.05	<0.05
		4		38.2	8.33	1350	1070	1.36	0.12	69	77.5	<1000	0.164	<2	20.7	<0.5	1.01	24.2	142	1.2	<0.05	<0.05
		5		34.7	8.33	1180	1100	1.8	0.13	78	72.6	<1000	0.166	<2	29	<0.5	1.11	23.2	144	<1	<0.05	<0.05
	RG_FRUPO	1	18-Sep-22	47	8.26	1050	1310	1.87	0.15	71	79.9	<1000	0.224	<2	7.9	<0.5	1.07	26.3	149	<1	0.07	<0.05
		2		32.6	8.28	1370	1330	0.92	0.14	64	98.1	<1000	0.194	<2	5.8	<0.5	1.09	28.5	136	<1	<0.05	<0.05
		3		30.4	8.16	1370	1390	0.78	0.1	72	79.2	<1000	0.187	<2	7	<0.5	1.05	30.9	132	<1	<0.05	<0.05
		4		32	8.06	1550	2170	1.07	0.15	69	109	<1000	0.263	<2	9.8	<0.5	1.25	39.5	145	1	<0.05	<0.05
		5		42.9	8.33	1270	1780	1.86	0.15	83	75.7	<1000	0.23	<2	11.5	<0.5	1.02	30.6	140	<1	0.059	<0.05
	RG_FO22	1	9-Sep-22	51.6	8.08	1430	1330	2.92	0.19	71	60	<1000	0.183	<2	7.4	<0.5	1.14	24.8	103	<1	<0.05	<0.05
		2		33.3	8.18	1610	1460	1.26	0.13	67	69	<1000	0.193	<2	6.7	<0.5	1.16	30	114	<1	<0.05	<0.05
		3		49.5	8.04	1400	1650	1.8	0.18	89	74.1	<1000	0.201	<2	6.8	<0.5	1.1	30.1	110	<1	<0.05	<0.05
		4		46.4	8.09	1610	1490	1.75	0.15	75	67.7	<1000	0.192	<2	7.2	<0.5	1.12	28.2	109	<1	<0.05	<0.05
		5		45.8	8.15	1460	1290	2.04	0.15	78	62.7	<1000	0.174	<2	7.1	<0.5	0.992	24.4	100	<1	<0.05	<0.05
RG_FO22	1	9-Sep-22	32.7	8.02	1670	1750	1.57	0.14	85	69.1	<1000	0.227	<2	19.5	<0.5	1.41	34.6	122	1.9	<0.05	<0.05	
	2		45.4	7.53	1360	1730	2.56	0.22	84	62.8	<1000	0.252	<2	25.8	<0.5	1.29	30.7	115	1.5	<0.05	<0.05	
	3		37.5	7.9	1350	1850	1.84	0.16	83	69.2	<1000	0.236	<2	18.3	<0.5	1.36	33.9	113	1.7	<0.05	<0.05	
	4		34	7.95	1500	1910	1.59	0.12	76	71.6	<1000	0.226	<2	13.3	<0.5	1.39	35.6	126	1.4	<0.05	<0.05	
	5		34.2	8.11	1720	1650	1.56	0.15	79	68.7	<1000	0.216	<2	19	<0.5	1.4	33.5	121	1.4	<0.05	<0.05	

Note: "-" indicates no data available.

^a The sediment samples at RG_SCOUTDS had elevated concentrations of se samples having lower moisture, fine particle, selenium and PAH content, while

Table C.3: Raw Sediment Chemistry Data, FRO LAEMP, September, 2022

	Area	Rep	Date	Moisture	pH	Acridine	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluoranthene	Benzo(b+j+k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene
			Units	%		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Reference	RG_HENUP	1	12-Sep-22	29.3	8.19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	<0.05
		2		33	8.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	<0.05
		3		25.3	8.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	<0.05
	RG_FO26	1	16-Sep-22	52.6	7.97	<0.05	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	0.111
		2		43.5	8.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	0.083
		3		40.7	8.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	0.092
Mine-Exposed	RG_FOUKI	1	13-Sep-22	66.7	7.92	0.202	<0.05	0.051	<0.05	0.116	0.116	0.062	<0.05	0.298
		2		45.9	8.27	0.145	<0.05	<0.05	<0.05	0.084	0.084	<0.05	<0.05	0.187
		3		87.2	7.05	0.674	<0.074	0.163	0.14	0.368	0.368	0.18	<0.074	0.887
		4		85.5	7.8	0.583	<0.073	0.147	0.123	0.29	0.29	0.15	<0.073	0.668
		5		71.7	7.87	0.292	<0.05	0.074	0.061	0.165	0.165	0.082	<0.05	0.383
	RG_FOBKS	1	12-Sep-22	25.4	8.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	<0.05
		2		27.8	8.23	<0.05	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	0.054
		3		37	8.26	0.067	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	0.097
		4		32.9	8.19	0.062	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	0.11
		5		47.3	8.23	0.14	<0.05	<0.05	<0.05	0.082	0.082	<0.05	<0.05	0.189
	RG_SCOUTDS ^a	1	14-Sep-22	77.5	8	0.224	<0.05	0.059	0.051	0.142	0.142	0.071	<0.05	0.319
		2		85.3	7.93	0.452	<0.074	0.129	0.098	0.271	0.271	0.138	<0.074	0.676
		3		78	8.1	0.448	<0.05	0.118	0.1	0.286	0.286	0.149	<0.05	0.711
		4		84.3	8.2	0.572	<0.069	0.146	0.116	0.389	0.497	0.174	0.108	0.892
		5		69.7	8.15	0.231	<0.05	0.061	<0.05	0.138	0.138	0.062	<0.05	0.273
		1	14-Feb-23	73.6	7.85	0.299	<0.05	0.085	<0.05	0.154	0.154	0.061	<0.05	0.393
		2		39.7	8.4	0.109	<0.05	<0.05	<0.05	0.068	<0.075	<0.05	<0.05	0.174
		3		27.6	8.29	0.074	<0.05	<0.05	<0.05	0.057	<0.075	<0.05	<0.05	0.153
		4		38.2	8.33	0.065	<0.05	<0.05	<0.05	0.053	<0.075	<0.05	<0.05	0.136
		5		34.7	8.33	0.084	<0.05	<0.05	<0.05	0.057	<0.075	<0.05	<0.05	0.145
	RG_FOBCP	1	14-Sep-22	47	8.26	0.125	<0.05	<0.05	<0.05	0.083	0.083	<0.05	<0.05	0.198
		2		32.6	8.28	<0.05	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	0.089
		3		30.4	8.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	0.078
		4		32	8.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	0.072
		5		42.9	8.33	0.097	<0.05	<0.05	<0.05	0.075	0.075	<0.05	<0.05	0.178
	RG_FRUPO	1	18-Sep-22	51.6	8.08	0.059	<0.05	<0.05	<0.05	0.055	<0.075	<0.05	<0.05	0.123
		2		33.3	8.18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	0.061
		3		49.5	8.04	0.059	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	0.14
		4		46.4	8.09	0.054	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	0.117
		5		45.8	8.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	0.094
RG_FO22	1	9-Sep-22	32.7	8.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	0.072	
	2		45.4	7.53	0.052	<0.05	<0.05	<0.05	0.076	0.076	<0.05	<0.05	0.178	
	3		37.5	7.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	0.088	
	4		34	7.95	<0.05	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	0.106	
	5		34.2	8.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.075	<0.05	<0.05	0.109	

Note: "-" indicates no data available.

^a The sediment samples at RG_SCOUTDS had elevated concentrations of several parameters, including moisture, fine particle, selenium and PAH content, while

Table C.3: Raw Sediment Chemistry Data, FRO LAEMP, September, 2022

	Area	Rep	Date	Moisture	pH	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	1+2-Methylnaphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene
			Units	%		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Reference	RG_HENUP	1	12-Sep-22	29.3	8.19	<0.05	<0.05	<0.05	<0.05	0.095	0.036	0.059	0.021	<0.05	<0.05
		2		33	8.4	<0.05	<0.05	<0.05	<0.05	0.166	0.065	0.101	0.033	<0.05	<0.05
		3		25.3	8.5	<0.05	<0.05	<0.05	<0.05	0.248	0.092	0.156	0.053	0.061	<0.05
	RG_FO26	1	16-Sep-22	52.6	7.97	<0.05	<0.05	0.054	<0.05	0.796	0.299	0.497	0.195	0.365	<0.05
		2		43.5	8.16	<0.05	<0.05	<0.05	<0.05	0.524	0.195	0.329	0.139	0.27	<0.05
		3		40.7	8.05	<0.05	<0.05	<0.05	<0.05	0.493	0.191	0.302	0.14	0.317	<0.05
Mine-Exposed	RG_FOUKI	1	13-Sep-22	66.7	7.92	<0.05	<0.05	0.31	<0.05	3.54	1.26	2.28	0.721	1.04	0.084
		2		45.9	8.27	<0.05	<0.05	0.219	<0.05	2.43	0.869	1.56	0.502	0.668	0.057
		3		87.2	7.05	0.082	0.115	1.03	<0.074	11.2	3.97	7.28	2.29	3.03	0.248
		4		85.5	7.8	0.073	0.11	0.878	<0.073	9.77	3.48	6.29	2.02	2.72	0.228
		5		71.7	7.87	<0.05	0.055	0.444	<0.05	4.85	1.73	3.12	0.982	1.38	0.114
	RG_FOBKS	1	12-Sep-22	25.4	8.14	<0.05	<0.05	<0.05	<0.05	0.629	0.234	0.395	0.137	0.186	<0.05
		2		27.8	8.23	<0.05	<0.05	<0.05	<0.05	0.631	0.24	0.391	0.139	0.192	<0.05
		3		37	8.26	<0.05	<0.05	0.111	<0.05	1.36	0.498	0.857	0.286	0.396	<0.05
		4		32.9	8.19	<0.05	<0.05	0.099	<0.05	1.25	0.46	0.79	0.262	0.395	<0.05
		5		47.3	8.23	<0.05	<0.05	0.258	<0.05	3.02	1.1	1.92	0.661	0.85	0.062
	RG_SCOUTDS ^a	1	14-Sep-22	77.5	8	<0.05	<0.05	0.343	<0.05	4.11	1.49	2.62	0.846	1.17	0.098
		2		85.3	7.93	<0.074	0.102	0.714	<0.074	7.69	2.79	4.9	1.58	2.26	0.187
		3		78	8.1	0.06	0.112	0.658	<0.05	7.41	2.75	4.66	1.52	2.28	0.192
		4		84.3	8.2	0.072	0.131	0.811	<0.069	9.78	3.56	6.22	2.07	3.02	0.24
		5		69.7	8.15	<0.05	<0.05	0.34	<0.05	3.9	1.4	2.5	0.785	1.14	0.093
	RG_FOBCP	1	14-Sep-22	73.6	7.85	<0.05	0.057	0.42	<0.05	4.44	1.52	2.92	0.939	1.29	0.11
		2		39.7	8.4	<0.05	<0.05	0.149	<0.05	1.76	0.616	1.14	0.374	0.559	<0.05
		3		27.6	8.29	<0.05	<0.05	0.104	<0.05	1.64	0.57	1.07	0.392	0.504	<0.05
		4		38.2	8.33	<0.05	<0.05	0.087	<0.05	1.23	0.426	0.802	0.276	0.412	<0.05
		5		34.7	8.33	<0.05	<0.05	0.117	<0.05	1.38	0.473	0.911	0.302	0.472	<0.05
	RG_FRUPO	1	18-Sep-22	47	8.26	<0.05	<0.05	0.181	<0.05	2.2	0.833	1.37	0.446	0.707	0.058
		2		32.6	8.28	<0.05	<0.05	0.063	<0.05	0.904	0.336	0.568	0.202	0.304	<0.05
		3		30.4	8.16	<0.05	<0.05	<0.05	<0.05	0.713	0.268	0.445	0.161	0.263	<0.05
		4		32	8.06	<0.05	<0.05	<0.05	<0.05	0.899	0.338	0.561	0.22	0.285	<0.05
		5		42.9	8.33	<0.05	<0.05	0.147	<0.05	1.86	0.72	1.14	0.369	0.63	0.053
	RG_FO22	1	9-Sep-22	51.6	8.08	<0.05	<0.05	0.092	<0.05	1.27	0.473	0.801	0.305	0.426	<0.05
		2		33.3	8.18	<0.05	<0.05	<0.05	<0.05	0.583	0.224	0.359	0.146	0.216	<0.05
		3		49.5	8.04	<0.05	<0.05	0.1	<0.05	1.57	0.59	0.98	0.422	0.544	<0.05
		4		46.4	8.09	<0.05	<0.05	0.086	<0.05	1.21	0.465	0.746	0.308	0.416	<0.05
		5		45.8	8.15	<0.05	<0.05	0.069	<0.05	0.97	0.378	0.592	0.244	0.345	<0.05
RG_FO22	1	9-Sep-22	32.7	8.02	<0.05	<0.05	<0.05	<0.05	0.344	0.136	0.208	0.09	0.178	<0.05	
	2		45.4	7.53	<0.05	<0.05	0.071	<0.05	1.21	0.473	0.733	0.302	0.628	<0.05	
	3		37.5	7.9	<0.05	<0.05	<0.05	<0.05	0.625	0.246	0.379	0.168	0.293	<0.05	
	4		34	7.95	<0.05	<0.05	<0.05	<0.05	0.616	0.245	0.371	0.158	0.305	<0.05	
	5		34.2	8.11	<0.05	<0.05	<0.05	<0.05	0.582	0.228	0.354	0.151	0.297	<0.05	

Note: "-" indicates no data available.

^a The sediment samples at RG_SCOUTDS had elevated concentrations of selenium and PAH content, while samples having lower moisture, fine particle, and selenium content, while

Table C.3: Raw Sediment Chemistry Data, FRO LAEMP, September, 2022

Area	Rep	Date	Moisture	pH	Quinoline	B(a)P Total Potency Equivalent	PAHs, total (BC Sched 3.4)	PAHs, total	Surrogate: Acridine d9	Surrogate: Chrysene d12	Surrogate: Naphthalene d8	Surrogate: Phenanthrene d10	% Total Solids
		Units	%		mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	%
Reference	RG_HENUP	1	29.3	8.19	<0.05	<0.065	<0.2	<0.2	103	124	113	115	-
		2	33	8.4	<0.05	<0.065	<0.2	<0.2	105	124	112	116	-
		3	25.3	8.5	<0.05	<0.065	0.27	<0.2	105	123	113	115	-
	RG_FO26	1	52.6	7.97	<0.05	<0.065	1.22	0.72	103	119	107	112	-
		2	43.5	8.16	<0.05	<0.065	0.82	0.49	105	122	114	116	-
		3	40.7	8.05	<0.05	<0.065	0.85	0.55	106	124	116	115	-
Mine-Exposed	RG_FOUKI	1	66.7	7.92	<0.05	0.075	4.9	2.8	106	124	116	114	50.33
		2	45.9	8.27	<0.05	0.068	3.27	1.8	101	119	109	109	53.26
		3	87.2	7.05	<0.074	0.293	15.6	8.91	112	127	126	112	25.42
		4	85.5	7.8	<0.073	0.255	13.6	7.73	114	112	115	127	42.54
		5	71.7	7.87	<0.05	0.12	6.77	3.9	109	128	120	119	36.54
	RG_FOBKS	1	25.4	8.14	<0.05	<0.065	0.72	0.32	106	125	117	119	-
		2	27.8	8.23	<0.05	<0.065	0.78	0.38	110	130	122	122	-
		3	37	8.26	<0.05	<0.065	1.75	0.89	101	121	114	115	-
		4	32.9	8.19	<0.05	<0.065	1.66	0.87	115	127	129	129	-
		5	47.3	8.23	<0.05	0.068	4.03	2.19	105	123	120	117	-
	RG_SCOUTDS ^a	1	77.5	8	<0.05	0.105	5.64	3.23	111	128	119	118	54.48
		2	85.3	7.93	<0.074	0.19	10.9	6.42	68.1	83	76.1	74.8	37.33
		3	78	8.1	<0.05	0.214	10.6	6.43	63	75.1	70.9	69.4	47.4
		4	84.3	8.2	<0.069	0.266	14	8.48	62.7	72	72.1	68.6	50.25
		5	69.7	8.15	<0.05	0.078	5.31	3.01	115	114	120	118	55.63
	RG_FOBCP	1	73.6	7.85	<0.05	0.083	6.35	3.65	87.4	93.1	96.6	98	-
		2	39.7	8.4	<0.05	0.066	2.45	1.38	74.9	79.6	81.2	81.4	-
		3	27.6	8.29	<0.05	<0.065	2.22	1.21	80	92.9	95	95.7	-
		4	38.2	8.33	<0.05	<0.065	1.71	0.96	75.9	99.5	102	102	-
		5	34.7	8.33	<0.05	<0.065	1.95	1.09	76.5	100	103	106	-
	RG_FOBCP	1	47	8.26	<0.05	0.068	3.03	1.74	105	109	113	114	64.48
		2	32.6	8.28	<0.05	<0.065	1.23	0.66	120	122	125	120	74.33
		3	30.4	8.16	<0.05	<0.065	0.95	0.5	103	123	107	118	75.29
		4	32	8.06	<0.05	<0.065	1.14	0.58	111	123	123	125	76.62
		5	42.9	8.33	<0.05	0.067	2.58	1.51	98.1	116	112	111	70.75
RG_FRUPO	1	51.6	8.08	<0.05	<0.065	1.75	1	85.8	102	107	93.7	-	
	2	33.3	8.18	<0.05	<0.065	0.78	0.42	87.9	106	105	96.2	-	
	3	49.5	8.04	<0.05	<0.065	2.19	1.21	98.6	114	116	104	-	
	4	46.4	8.09	<0.05	<0.065	1.67	0.93	87.8	104	102	96.1	-	
	5	45.8	8.15	<0.05	<0.065	1.34	0.75	94.2	112	112	102	-	
RG_FO22	1	32.7	8.02	<0.05	<0.065	0.55	0.34	68.7	72.9	68.1	66.1	74.26	
	2	45.4	7.53	<0.05	0.067	1.91	1.26	72.8	63.5	61.3	62.1	62.27	
	3	37.5	7.9	<0.05	<0.065	0.93	0.55	69.9	69.3	65.9	65.5	66.79	
	4	34	7.95	<0.05	<0.065	0.94	0.57	70.7	71.7	68.2	65.8	69.84	
	5	34.2	8.11	<0.05	<0.065	0.91	0.56	67.5	69.5	65.4	63.3	71.85	

Note: "-" indicates no data available.

^a The sediment samples at RG_SCOUTDS had elevated concentrations of selenium and PAH content, while samples having lower moisture, fine particle, and selenium content, while

Table C.4: Composite-taxa Benthic Invertebrate Tissue Chemistry, FRO LAEMP, 2022

Area	Date	Moisture	Dry Mass	Wet Mass	Aluminum	Arsenic	Antimony	Barium	Boron	Calcium	Cadmium	Copper	Cobalt
	Units	%	g dw	g ww	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
RG_HENUP	12-Sep-22	82.8	0.06	0.3748	313	1.7	0.028	12	1.1	3538	0.73	9.8	0.61
		82.6	0.08	0.4399	235	1.7	0.019	10	0.877	3122	0.70	11	0.275
		79.60	0.1208	0.59	244	1.6	0.01	8.8	0.667	2329	0.335	10	0.24
RG_FO26	27-Jun-22	72.4	0.2695	0.977	237	0.739	0.012	34	0.33	3414	0.468	11	0.291
		77.7	0.1684	0.7564	834	1.3	0.02	34	1.3	1669	1.7	11	1.4
		76	0.1981	0.8269	427	0.759	0.014	38	0.454	1195	0.869	11	0.523
		72.4	0.2695	0.977	237	0.739	0.012	34	0.33	3414	0.468	11	0.291
		77.7	0.1684	0.7564	834	1.3	0.02	34	1.3	1669	1.7	11	1.4
		76	0.1981	0.8269	427	0.759	0.014	38	0.454	1195	0.869	11	0.523
		81.2	0.28	1.4792	148	1.1	0.016	29	1.2	1058	0.61	12	0.15
16-Sep-22	76.2	0.2702	1.1365	315	1.3	0.025	29	2.8	1749	0.635	11	0.384	
	81.9	0.21	1.165	109	0.643	0.01	10	1.3	860	0.21	5.4	0.111	
	72	0.0422	0.1508	701	<0.56	0.026	30	1.6	2297	4	17	0.534	
18-Jan-22	73.5	0.1545	0.5839	1645	0.881	0.054	58	4	2651	3.7	15	1.1	
	65.7	0.0201	0.0586	629	0.839	0.033	53	0.955	1967	8.6	19	1.1	
	71.5	0.0466	0.1635	1154	0.608	0.033	83	1.1	1392	2.4	13	0.427	
	78	0.1203	0.547	1205	0.923	0.03	27	1.8	2252	3.7	18	0.643	
	79.8	0.0917	0.4541	1153	1.3	0.073	54	2.8	5100	4.8	18	0.834	
17-Feb-22	78.3	0.1416	0.6528	1153	1	0.062	43	2.3	2095	2.1	16	1.2	
	79.8	0.0425	0.2107	1205	0.875	0.126	71	2.2	2233	3.9	19	0.597	
	76.8	0.1176	0.506	1338	0.967	0.069	65	1.9	2751	1.8	16	1.4	
	73.3	0.1234	0.4625	1202	1	0.086	54	3.2	1688	4.6	19	1.8	
	76.4	0.0549	0.2323	6210	1.5	0.162	152	8.1	4138	3.3	26	5.1	
16-Mar-22	78.7	0.0437	0.2053	3354	1	0.098	94	4	4108	4.8	27	2.8	
	73	0.0117	0.0434	1129	1.2	0.051	78	1.4	2439	18	27	2.5	
	78	0.083	0.3776	1391	1.2	0.062	53	3.1	5422	2.2	17	1.1	
	79	0.117	0.5569	1845	1.3	0.082	62	3.1	5567	4	22	1.4	
	74	0.2553	0.9817	418	1.3	0.021	36	0.672	4065	1.8	14	0.904	
27-Jun-22	75.8	0.3753	1.5488	355	1.2	0.018	41	0.392	2424	1.5	12	0.624	
	71.4	0.307	1.0725	398	1.7	0.032	45	0.616	3341	2.2	14	1.1	
	73.8	0.2481	0.9467	448	2.1	0.049	62	1.3	2290	3.6	15	1.8	
	76.6	0.2897	1.2377	266	1.7	0.024	43	0.616	3252	1.7	14	0.656	
	76.10	0.22	0.94	1221	1.3	0.058	67	5.8	2000	0.998	15	0.75	
19-Sep-22	79.3	0.1512	0.7319	739	1.1	0.04	50	4.3	2155	1.4	12	0.58	
	75.2	0.13	0.5348	620	1.1	0.06	61	4.60	1508	1.4	15	0.58	
	63.7	0.2487	0.686	293	0.808	0.024	31	2.4	1101	1.2	9.4	0.29	
	92.5	0.0524	0.70	359	0.99	0.055	54	2.5	1464	0.97	15	0.919	
	83.7	0.1596	0.9765	299	2.9	0.041	25	3.1	3236	6.3	16	0.689	
5-Dec-22	82.5	0.1503	0.8577	572	1.8	0.043	37	4.2	2330	4.5	12	0.689	
	80.3	0.236	1.1999	401	2.4	0.037	27	3.7	3389	2.7	15	0.605	
	81.4	0.1454	0.78	611	2.2	0.044	38	5.8	2953	3.4	15	0.876	
	77.8	0.2766	1.2449	684	2.4	0.068	37	4.1	2538	2.3	16	0.871	

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Chromium	Iron	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
RG_HENUP	12-Sep-22	10	381	0.789	1651	19	0.04	0.323	19	10992
		4.60	195	0.48	1326	14	0.06	0.268	8.3	11789
		4.60	196	0.43	1080	11	0.04	0.268	6.5	8935
RG_FO26	27-Jun-22	3.1	151	0.166	1504	36	0.044	0.319	2.9	12397
		5.7	452	0.379	1372	47	0.05	0.29	6.7	10298
		4.1	242	0.308	1160	46	0.044	0.29	4.7	11491
		3.1	151	0.166	1504	36	0.044	0.319	2.9	12397
	16-Sep-22	5.7	452	0.379	1372	47	0.05	0.29	6.7	10298
		4.1	242	0.308	1160	46	0.044	0.29	4.7	11491
		4.8	166	0.17	1153	32	0.039	0.30	5	10564
RG_UFR1	18-Jan-22	5.2	230	0.254	1301	36	<0.033	0.253	5.7	10695
		2.9	81	0.11	616	19	<0.033	0.111	2.30	5287
		5	274	0.375	1040	18	0.033	0.194	10	7149
		8.7	782	0.57	1336	47	0.055	0.344	22	8654
	17-Feb-22	5.9	355	0.287	1704	63	0.061	0.351	13	9985
		8.4	401	0.456	1162	29	0.055	0.296	11	5980
		4.8	326	0.442	1371	27	0.022	0.19	8.5	9683
		13	556	0.602	1631	38	0.072	0.464	28	11049
	16-Mar-22	16	683	0.648	1246	37	0.093	0.444	33	12722
		9.9	504	0.535	1627	37	0.078	0.483	21	10564
		14	698	0.602	1441	60	0.075	0.403	33	10701
		13	700	0.644	1370	52	0.06	0.544	31	10413
	27-Jun-22	127	2831	2.1	2115	106	0.117	0.63	153	13902
		54	1591	1.2	1783	58	0.07	0.411	80	11561
		35	899	0.459	1884	84	0.107	0.384	54	9109
		19	769	0.616	1619	26	0.056	0.301	29	9330
19-Sep-22	20	793	0.727	1709	24	0.065	0.384	30	11556	
	3.1	240	0.207	2295	36	0.035	0.409	4.8	10756	
	4.4	253	0.246	1620	36	0.035	0.281	5.5	10336	
	3.8	374	0.29	1750	45	0.035	0.461	5.2	10991	
5-Dec-22	8	494	0.424	2092	60	0.062	0.512	12	13912	
	2.8	216	0.19	2095	45	0.035	0.358	4	10109	
	12	638	0.674	1503	61	0.04	0.47	14	13241	
	9.70	393	0.384	1371	45	0.055	0.3	12	9993	
Reference	17-Feb-22	12	713	0.453	1395	47	0.068	0.338	18	11130
		3.8	160	0.21	1089	24	0.04	0.225	4.10	10965
		14	517	0.465	1368	64	0.055	0.45	17	10350
		6.5	211	0.232	1339	21	0.049	0.24	10	9818
Reference	5-Dec-22	6.3	309	0.352	1089	40	0.044	0.27	10	7962
		7.4	241	0.249	1286	27	0.034	0.21	11	11013
		8.7	374	0.386	1191	37	0.039	0.24	13	8911
		11	446	0.459	1127	40	0.039	0.33	19	9858

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Phosphorus	Silver	Selenium	Sodium	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Reference	RG_HENUP	12-Sep-22	13811	0.07	8.20	4328	5.6	0.05	0.311	23	0.083	0.918	222
			12542	0.058	7.3	3459	5.7	0.032	0.687	12	0.07	0.59	257
			10411	0.05	5.10	2917	4.2	0.02	0.279	16	0.04	0.517	185
	RG_FO26	27-Jun-22	14513	0.072	2.5	3886	4.9	0.017	<0.114	14	0.013	0.394	163
			10442	0.072	3.5	3093	2.7	0.042	0.158	63	0.041	1.4	177
			13586	0.072	3	3688	2.4	0.026	0.189	27	0.021	0.741	160
			14513	0.072	2.5	3886	4.9	0.017	<0.114	14	0.013	0.394	163
			10442	0.072	3.5	3093	2.7	0.042	0.158	63	0.041	1.4	177
			13586	0.072	3	3688	2.4	0.026	0.189	27	0.021	0.741	160
			14446	0.05	4.4	3429	1.6	0.01	0.183	7.3	0.019	0.29	172
	16-Sep-22	14017	0.04	5	3980	3.1	0.01	0.18	12	0.029	0.466	172	
		7672	0.014	1.8	1975	1.3	0.006	0.098	6.4	0.01	0.217	76	
	RG_UFR1	18-Jan-22	9656	0.091	4.3	2667	3.7	0.02	0.573	42	0.047	1.1	165
			8187	0.089	3.1	3353	5.6	0.03	0.32	129	0.068	3	174
			10692	0.122	6.1	3372	4.7	0.023	1.3	29	0.054	1.3	360
			7240	0.08	3.3	2335	4.7	0.022	0.333	75	0.053	2.3	160
			10550	0.109	3.8	3576	3.8	0.028	0.253	52	0.045	1.8	178
		17-Feb-22	13266	0.118	4.4	4261	7.5	0.03	0.77	73	0.13	2.2	282
			15119	0.103	5.9	4815	4.3	0.025	0.461	90	0.103	2.5	246
			10731	0.135	6	3619	6.2	0.027	0.791	79	0.075	2.3	326
			11816	0.108	4.5	3549	5.4	0.025	0.263	86	0.077	3	284
		16-Mar-22	11003	0.102	5.4	3638	5	0.025	0.435	103	0.068	3	256
			14777	0.175	6.4	4511	11	0.065	0.791	413	0.226	12	294
			11380	0.168	6	3907	8.3	0.046	0.682	254	0.157	6.5	376
	10671		0.158	6.8	2892	6.1	0.026	0.806	67	0.08	2.7	585	
	11368		0.137	5.2	2856	9	0.03	0.552	95	0.082	2.9	226	
	27-Jun-22	11929	0.127	5.9	4089	8.8	0.037	0.754	136	0.101	4	289	
		13401	0.13	4	3094	6.1	0.031	0.219	24	0.025	0.749	228	
		12465	0.076	3.6	2915	4	0.033	0.14	23	0.017	0.687	152	
		12694	0.119	3.8	3338	5.3	0.031	<0.114	55	0.024	0.785	199	
		13684	0.119	4.9	3417	3.9	0.056	0.135	48	0.044	1	208	
	19-Sep-22	12605	0.086	4	2631	5.7	0.031	0.188	20	0.015	0.523	190	
		16720	0.07	5.4	4342	4.5	0.04	0.125	89	0.069	2.7	211	
		11048	0.069	5	3158	4.10	0.024	0.202	44	0.041	1.6	229	
		11699	0.07	4.7	3506	4.7	0.032	0.17	87	0.067	3.1	226	
		11270	0.04	3.5	2789	2.6	0.014	0.556	19	0.025	0.637	170	
	5-Dec-22	13352	0.108	5	3907	2.9	0.031	0.182	47	0.048	1.7	186	
		13217	0.096	4.5	3789	4.7	0.023	0.567	20	0.038	0.772	229	
		10851	0.062	3.9	3993	3.9	0.027	0.305	39	0.057	1.2	164	
		13834	0.069	3.8	4318	5.8	0.023	0.3	24	0.038	1.1	177	
11968		0.089	5.2	3686	5.4	0.041	0.381	40	0.061	1.5	195		
		12998	0.069	4	3889	4.5	0.045	0.34	47	0.066	1.7	171	

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-taxa Benthic Invertebrate Tissue Chemistry, FRO LAEMP, 2022

Area	Date	Moisture	Dry Mass	Wet Mass	Aluminum	Arsenic	Antimony	Barium	Boron	Calcium	Cadmium	Copper	Cobalt
	Units	%	g dw	g ww	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
RG_FRGHSC	21-Jan-22	75.8	0.0914	0.3773	792	<0.56	0.036	35	2.3	4655	2.5	20	0.507
		84.7	0.083	0.5438	1307	<0.56	0.09	132	2.7	3896	1.4	14	0.593
		78.6	0.0462	0.2162	1602	<0.56	0.049	89	3.3	6848	2.1	24	1.5
		84.6	0.1035	0.6717	3641	1.8	0.106	117	5.8	4533	2.1	18	1.8
		84.3	0.0491	0.3132	2174	0.646	0.058	90	3.4	7578	2.6	16	0.743
	18-Feb-22	79.9	0.0503	0.2503	2146	0.724	0.236	85	3.2	7255	1.6	22	0.874
		67.2	0.0501	0.1526	1742	0.709	0.124	68	3.3	6367	3.7	24	1.4
		67.9	0.0294	0.0916	2648	0.94	0.239	118	3.1	8701	2.4	20	3
		70.8	0.074	0.253	1819	0.709	0.189	78	2.6	6100	2.1	20	0.971
		74.6	0.0193	0.076	670	<0.496	0.101	60	1.7	7506	4.2	22	1.4
RG_FRGHSC	15-Mar-22	85.3	0.0076	0.0518	1231	0.532	0.095	53	1.9	4925	2.6	23	0.572
		81.9	0.0403	0.2223	4175	0.746	0.203	301	6.2	6542	3.1	26	2.5
		85	0.027	0.1798	2264	0.7	0.133	117	3.9	7554	4.5	22	1.6
		81.1	0.0421	0.2224	3019	0.778	0.096	125	3.6	7902	5	23	2.6
		82.2	0.0341	0.1915	5491	1.5	0.196	245	6.3	7794	4.4	20	8.4
	29-Jun-22	77.1	0.2492	1.0885	5087	2.4	0.268	247	10	8003	5.8	14	1.6
		75.1	0.1977	0.7934	4225	1.8	0.166	176	7.5	4885	5.1	16	1.8
		76.9	0.218	0.9428	1511	2	0.12	143	4.7	4430	6.1	15	1.6
		78.4	0.1495	0.692	2689	1.3	0.102	114	5.8	3954	3.8	15	0.997
		76.2	0.1296	0.5451	2351	1.1	0.084	101	3.1	2970	4.4	15	1
18-Sep-22	62.1	0.0501	0.1323	19542	6.9	0.501	304	22	4426	18	12	5.5	
	62.9	0.0584	0.1575	24238	10	0.435	592	28	9184	19	20	12	
	70.4	0.0737	0.25	10520	6.1	0.426	295	12	4634	9.8	9.2	4	
	82.8	0.09	0.5506	3629	1.6	0.135	123	5.2	5826	3.2	12	1.8	
	85.4	0.0772	0.5288	3277	1.5	0.154	115	6.3	7097	3.2	15	1.2	
8-Dec-22	84.2	0.08	0.5084	1338	0.697	0.098	68	4.3	5632	1.7	9.9	0.564	
	83.4	0.1273	0.7674	5786	2	0.227	143	7.5	5856	5.4	13	2.8	
	78.9	0.15	0.7122	1477	0.401	0.075	75	1.8	3233	2.3	13	0.348	
	75.1	0.2017	0.8108	276	0.397	0.04	49	0.771	1309	1.5	19	0.289	
	77.8	0.1042	0.4698	284	<0.395	0.053	21	0.803	3735	4.7	25	0.276	
RG_FODHE	13-Jun-22	80.3	0.1366	0.6934	547	0.397	0.053	25	1.9	3841	4.6	24	0.389
		76.9	0.1476	0.6395	184	<0.395	0.032	15	0.771	2792	4.1	21	0.276
		76.4	0.2181	0.9229	180	<0.395	0.027	51	0.9	1279	1.3	16	0.132
	19-Sep-22	77.3	0.0184	0.081	4101	2.4	0.085	101	5.7	4171	6.1	16	7.2
		77.5	0.128	0.5688	538	1.4	0.049	19	14	2285	3.7	23	1.1
RG_FOUCL	13-Jun-22	82.7	0.0663	0.3827	679	1.2	0.271	58	4.1	4933	2.3	21	1.1
		82.4	0.09	0.5025	606	0.901	0.036	25	3.9	3169	2.1	18	0.978
		81.8	0.09	0.4881	715	1.2	0.039	32	1.8	2543	2.6	16	1.5
	16-Sep-22	80.3	0.1423	0.7237	634	1	0.068	28	1.7	3002	2.9	19	1.4
		72.8	0.0707	0.2603	6069	3.2	0.085	110	5.5	4594	7.9	18	12
RG_FOUCL	13-Jun-22	82.3	0.0202	0.1143	6948	2	0.518	105	5.7	6496	5.3	15	6.3
		73.7	0.1285	0.4885	449	0.728	0.05	19	0.755	3566	1.1	11	2
	16-Sep-22	80.9	0.0868	0.455	411	0.76	0.03	33	0.782	2024	2.1	9.7	0.922
		83.4	0.0606	0.3642	1456	1.1	0.064	69	2.1	3483	5.1	16	4.5
		82.5	0.0504	0.2872	936	1.4	0.057	352	2.5	3876	5	17	2.5
79.8	0.0689	0.3408	930	1.1	0.059	379	1.5	3083	4.2	18	2.9		
80	0.08	0.4163	751	1.1	0.045	49	2.6	3060	2.2	17	1.1		

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Chromium	Iron	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
RG_FRGHSC	21-Jan-22	9.8	439	0.751	1937	16	<0.021	0.33	14	10015
		8.7	631	1.2	1903	22	0.082	0.889	13	13602
		35	1019	1.1	1654	33	0.037	0.293	50	8553
		30	1593	3.5	2179	44	0.041	0.595	43	11956
		25	1238	1.3	1835	39	0.032	0.554	38	6849
	18-Feb-22	13	865	1.8	1778	31	0.064	0.569	23	9210
		18	1015	1.5	2378	41	0.089	0.55	33	12769
		55	5552	1.5	1987	52	0.06	0.539	108	10829
		24	1181	1.3	1867	50	0.055	0.669	48	11431
		19	724	0.929	2211	41	0.06	0.361	39	10826
RG_FRGHSC	15-Mar-22	18	658	1.1	1408	21	0.04	0.46	23	9239
		38	2257	2.9	2067	44	0.043	0.646	64	10941
		21	1278	2.1	1888	40	0.047	0.394	29	11091
		42	1909	2.4	1987	61	0.038	0.58	61	11845
		163	4941	3.8	2175	124	0.047	0.58	254	12416
	29-Jun-22	14	2464	2.7	2005	142	0.058	0.87	22	17599
		18	1816	2.7	1996	127	<0.034	0.559	24	16518
		13	1062	1.6	1451	112	0.044	0.466	17	13192
		7.5	1089	1.6	1726	95	<0.034	0.373	11	16338
		15	1196	1.1	1599	54	0.036	0.466	20	11442
18-Sep-22	62	7352	7.2	2403	89	0.08	0.901	83	13190	
	135	10883	10	3284	159	0.125	2.5	200	17920	
	40	4875	8.9	2129	107	0.164	0.954	53	12486	
	27	2193	2.4	1459	43	0.067	0.533	40	7703	
	42	2145	2.8	2040	59	0.055	0.898	68	8716	
8-Dec-22	7.5	655	1	1314	30	<0.033	0.339	12	7206	
	29	2401	2.4	2242	66	0.044	0.552	38	10764	
	5.5	369	0.756	1737	56	<0.033	0.226	6.6	8482	
	7.5	250	0.704	1392	42	0.036	0.232	5.9	9848	
	7.3	254	0.593	1866	17	<0.03	0.348	7.5	9687	
RG_FODHE	13-Jun-22	6.2	338	0.82	1835	16	<0.03	0.309	5.7	10091
		5.2	187	0.582	1322	14	<0.03	0.155	4.5	9355
		3.9	150	0.555	1129	30	<0.03	0.232	2.1	6092
	19-Sep-22	132	3229	1.2	1558	100	0.073	0.927	158	10672
		8	351	0.569	1495	32	0.05	0.319	11	10434
RG_FOUCL	13-Jun-22	7.4	459	0.423	1806	49	0.063	0.435	10	7901
		6.1	309	4.6	1858	53	0.055	0.3	11	13986
		9.8	517	0.872	1732	88	0.055	0.425	20	13747
	16-Sep-22	11	498	4	1884	86	0.077	0.438	19	15146
		56	2566	2.5	1961	104	0.056	0.723	80	13538
33		2636	2.7	1786	111	0.056	0.701	50	5098	
16-Sep-22	5.3	293	0.315	1357	30	<0.034	0.203	7.4	5259	
	4.9	234	1.4	1291	53	0.085	0.295	8.1	9672	
	21	715	6.3	1922	60	0.085	0.376	35	12513	
	11	459	1.6	1703	72	0.101	0.349	23	13550	
16-Sep-22	39	614	1.4	1520	77	0.069	0.537	61	10213	
	12	431	0.889	1741	52	0.048	0.389	20	13057	

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Phosphorus	Silver	Selenium	Sodium	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	RG_FRGHSC	21-Jan-22	10327	0.088	6.6	2893	4.2	0.013	0.362	47	0.209	1.4	231
			10327	0.06	19	6144	6.8	0.028	0.466	93	0.495	3.1	106
			10057	0.108	8.1	2690	7.9	0.025	0.597	133	0.156	3.3	137
			10227	0.103	8.1	8850	9.1	0.058	0.498	272	0.262	6.7	113
			9512	0.066	6.7	2331	9.9	0.031	0.785	151	0.164	3.6	146
		18-Feb-22	13046	0.15	8.4	3867	10	0.049	0.581	132	0.294	3.9	162
			16145	0.18	10	5138	10	0.059	0.434	125	0.373	4.1	255
			15251	0.125	7.9	3736	12	0.049	0.597	208	0.184	8.4	180
			13318	0.114	7.2	4212	8.7	0.045	0.658	139	0.275	4.2	164
			14689	0.151	7.7	3992	9	0.03	1.4	37	0.205	1.7	227
	RG_FRGHSC	15-Mar-22	10757	0.122	7.1	3419	6.7	0.052	0.814	85	0.106	1.9	171
			13168	0.116	9.3	4631	12	0.112	2	313	0.373	9.2	210
			14294	0.105	9	4654	10	0.063	1.8	176	0.285	4.4	188
			14524	0.092	8.7	4300	11	0.06	0.954	199	0.186	5.7	163
			14681	0.11	10	4103	15	0.117	1.3	336	0.273	16	154
		29-Jun-22	11441	0.084	18	2881	13	0.078	0.582	529	0.511	9.6	165
			12099	0.092	16	2660	8.6	0.066	0.728	348	0.496	7.8	175
			10158	0.084	19	2260	6	0.035	0.58	110	0.411	3.7	169
			11418	0.076	9.5	2946	5.3	0.042	0.462	211	0.308	4.4	160
			12007	0.084	15	2652	5.3	0.039	0.51	213	0.171	4.2	147
			8682	0.101	68	2002	19	0.232	1.2	1989	0.944	38	184
			12922	0.205	79	2871	30	0.38	1.9	2760	1.2	42	215
		18-Sep-22	7649	0.107	70	1993	23	0.229	0.929	1327	0.693	19	127
			8377	0.063	19	1859	8.5	0.049	0.624	305	0.348	7.7	141
			9585	0.05	13	2166	9.4	0.049	0.754	272	0.397	7.1	151
			9435	0.033	5.3	3107	4.6	0.032	0.78	91	0.302	2.5	121
			11341	0.065	17	2807	12	0.116	0.905	560	0.423	13	153
	12391		0.049	10	2957	3.9	0.022	0.246	35	0.191	1.2	139	
	8-Dec-22	13228	0.034	15	3510	1.7	0.013	0.152	21	0.086	0.647	213	
		13564	0.076	7.9	3157	4.4	0.015	0.299	21	0.08	0.681	247	
		11742	0.062	7.9	3511	4.2	0.018	0.594	37	0.149	1.2	182	
		10790	0.055	5.8	3636	3.3	0.012	0.148	9.9	0.048	0.462	180	
		10010	0.027	10	2364	3	0.008	0.126	12	0.1	0.427	140	
	RG_FODHE	13-Jun-22	12181	0.315	5.5	2645	14	0.069	1.6	275	0.158	8.2	330
			10793	0.173	6.1	3688	3.6	0.034	0.342	43	0.048	1.2	297
			12530	0.187	4.8	2144	8.6	0.029	1.2	51	0.044	1.4	330
		19-Sep-22	15850	0.12	9	5928	5.1	0.03	0.814	40	0.052	1.2	275
			15593	0.114	11	4500	4.7	0.038	0.923	43	0.076	1.4	365
	RG_FOUCL	13-Jun-22	15692	0.174	11	5820	4.7	0.038	0.436	53	0.075	1.8	349
			12449	0.133	5.2	3426	11	0.111	0.866	418	0.159	10	393
			9418	0.166	3.9	1162	13	0.097	1.7	414	0.157	10	373
		16-Sep-22	11348	0.067	2.7	1597	4.5	0.023	0.235	35	0.021	0.803	221
11047			0.068	10	4872	2.3	0.03	0.54	27	0.068	0.839	233	
13508			0.142	12	7528	5.1	0.062	0.91	107	0.134	3	299	
14087			0.174	13	3634	5.6	0.055	1.1	63	0.165	2.1	359	
11729			0.078	10	2928	4.3	0.037	0.462	57	0.126	3.1	280	
15134	0.097	10	3901	4	0.038	0.974	53	0.13	1.7	266			

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-taxa Benthic Invertebrate Tissue Chemistry, FRO LAEMP, 2022

Area	Date	Moisture	Dry Mass	Wet Mass	Aluminum	Arsenic	Antimony	Barium	Boron	Calcium	Cadmium	Copper	Cobalt		
	Units	%	g dw	g ww	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw		
Mine-Exposed	RG_FOUCL	5-Dec-22	78.4	0.1714	0.7933	778	1.2	0.078	44	3.9	4139	2.2	16	0.754	
			79.4	0.2055	0.9983	731	1.08	0.0424	46	3.73	2868	1.08	13	1.043	
			77.1	0.347	1.5125	357	1.5	0.035	23	3.1	2687	0.851	12	0.71	
			78.1	0.4402	2.0063	236	1.3	0.029	25	3.4	3472	0.965	13	0.704	
			77.4	0.2262	1.0027	285	1.6	0.034	23	2.2	4269	1.6	12	0.923	
	RG_FOUNGD	13-Jun-22	77.5	0.0943	0.4183	953	1.5	0.039	42	1.3	4017	14	31	17	
			77.8	0.1095	0.4934	3630	2.2	0.064	76	3.5	4434	7.9	22	12	
			75.3	0.168	0.6802	1467	2.5	0.039	38	2.2	3526	12	25	16	
		15-Sep-22	77.10	0.1632	0.7137	1095	0.83	0.049	33	1.7	1941	2.4	11	2.2	
			79.3	0.2399	1.1575	645	0.844	0.034	32	1.4	2599	3	15	2.3	
			76.5	0.1567	0.666	1056	0.887	0.047	42	1.6	1500	3.2	14	3	
			78	0.1623	0.7389	759	0.83	0.051	63	1.3	1845	3	18	2.4	
		6-Dec-22	82.8	0.1523	0.8836	1271	1.3	0.062	37	1.8	2878	4.4	21	3.8	
			79.7	0.0762	0.3748	678	0.75	0.051	34	1.9	3337	3.5	19	1.9	
			77.8	0.1267	0.5703	1094	0.908	0.064	49	3.3	2868	2.1	17	2	
			73.9	0.0989	0.3787	505	1.2	0.041	22	1.4	2142	3	16	2.3	
			80.1	0.0937	0.4706	477	1.2	0.059	33	1.4	3087	2.3	21	1.4	
		RG_FODNGD	13-Jun-22	77.6	0.0948	0.4237	777	1.3	0.062	34	7.1	3609	6.9	19	2
				72.4	0.182	0.6593	307	1	0.022	14	0.495	2056	6.4	15	7.6
				75.1	0.1403	0.5625	2368	1.8	0.082	279	3.2	4641	6.7	20	10
	15-Sep-22		76.8	0.157	0.6774	431	1.5	0.025	21	0.66	2513	6.7	16	9.4	
			77.10	0.1778	0.7748	773	0.79	0.04	32	1.4	2225	1.3	13	2.5	
			81.2	0.2106	1.1221	679	0.627	0.038	32	1.2	2690	2.5	18	2.6	
			82.4	0.1107	0.6302	1440	1.3	0.079	44	3	3279	5.1	26	4.1	
	6-Dec-22		82.6	0.1602	0.921	1490	1	0.07	39	2.4	2820	3.2	19	3.7	
			79.10	0.2332	1.1157	280	0.526	0.026	19	0.498	1943	2.8	14	1.3	
			79.3	0.0895	0.4318	344	0.888	0.035	21	1	2430	0.971	15	0.739	
			76.2	0.1447	0.609	751	0.908	0.053	33	1.6	1684	2	14	1.9	
			84.3	0.0423	0.2693	813	1.2	0.061	34	2.2	4271	4.1	21	2.1	
	RG_MP1	13-Jun-22	81.1	0.0624	0.3296	699	1.1	0.053	41	2.1	3722	3.6	23	1.8	
			78.8	0.0486	0.2288	1180	1.4	0.086	42	2.7	3446	3.7	21	4.5	
			73.3	0.0431	0.1613	761	1.1	0.071	41	2.5	3670	6.4	20	11	
		12-Sep-22	76.3	0.0928	0.3909	557	1	0.035	27	1.1	3112	4.3	27	13	
			77.2	0.0748	0.3281	2456	1.4	0.143	57	3.1	2899	8.7	17	14	
			80.4	0.1409	0.7189	250	0.458	0.025	16	0.562	1856	1	11	0.806	
			84.1	0.0806	0.5054	697	0.726	0.03	21	0.965	2473	3.5	17	1.9	
			80.9	0.1359	0.7129	208	0.432	0.021	20	0.408	2129	3.1	19	1	
			81.60	0.1149	0.6259	430	0.494	0.034	33	0.761	1906	2.1	18	1.8	
		7-Dec-22	80.10	0.1361	0.6839	554	0.587	0.03	21	0.78	2034	1.6	13	1.3	
			71.1	0.0979	0.3389	269	0.987	0.03	16	0.718	1936	1.2	13	0.351	
			79.5	0.084	0.4096	327	0.632	0.036	26	0.718	2091	0.94	15	0.509	
			81.7	0.0312	0.1702	1135	0.632	0.094	53	1.7	2072	0.877	14	1.3	
76.8			0.1022	0.4412	440	0.592	0.036	27	0.828	1736	0.752	12	0.666		
RG_FOUSH		13-Jun-22	80.1	0.0879	0.4422	1459	0.553	0.116	50	2	1850	1.6	14	1.4	
	71.7		0.0561	0.1983	3996	2.5	0.128	90	5	5512	11	26	17		
	73.3		0.026	0.0974	1381	0.584	0.065	83	3.6	3258	2.1	21	4.1		
			73.4	0.0441	0.1658	2454	1.6	0.088	65	3.6	4917	6.9	23	11	

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Chromium	Iron	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	RG_FOUCL	5-Dec-22	15	536	0.804	1622	40	0.036	0.425	20	10357
			10.8	495	1.069	1147	55	0.058	0.271	12.3	8401
			8.8	272	0.561	1237	39	0.051	0.232	9.8	8974
			5.1	202	0.635	1433	41	<0.03	0.232	7.8	9591
			7.2	219	0.593	1664	33	0.036	0.193	9	9549
	RG_FOUNGD	13-Jun-22	9	646	1.3	1968	55	0.101	0.407	22	13806
			16	1442	1.7	2248	90	0.067	0.565	34	15127
			14	891	1.1	2232	79	0.051	0.384	34	12554
		15-Sep-22	4.6	457	5.2	1165	45	0.053	0.245	11	13234
			4.6	291	4	1573	57	0.075	0.178	12	11399
			6.3	498	2.3	1014	52	0.075	0.245	17	8603
			4.4	410	2	1277	66	0.053	0.201	16	11137
		6-Dec-22	7	536	4.1	1688	42	0.101	0.312	17	13542
			16	585	2.2	1999	48	0.071	0.335	25	11242
			12	566	2.6	1629	60	<0.03	0.368	20	11366
			6.9	264	1.2	1396	33	0.035	0.234	13	11884
			8.4	301	1.8	1776	29	0.05	0.335	13	12367
			10	455	3.3	1783	50	0.064	0.402	17	12545
	RG_FODNGD	13-Jun-22	3.5	232	0.514	1354	53	<0.034	0.232	11	8427
			8.3	996	1.7	2482	196	0.044	0.899	36	15368
			4.3	289	0.522	1475	46	0.075	0.377	13	8572
		15-Sep-22	4.8	341	1.2	1262	42	0.106	0.27	15	8543
			4.4	336	2.5	1790	53	0.102	0.331	13	8338
			12	707	7.3	2141	51	0.119	0.403	30	11659
			7.2	644	1.8	1856	49	0.106	0.376	20	10688
			3.6	176	1.1	1448	30	0.08	0.188	7.4	11143
		6-Dec-22	6.8	235	1.1	1152	19	<0.03	0.167	10	8433
			6.7	365	1.5	1034	50	0.043	0.485	12	8636
			20	595	5.3	2006	45	0.07	0.444	37	12131
			9.7	403	1.9	1687	33	0.059	0.333	19	12631
	RG_MP1	13-Jun-22	22	735	2.4	1575	40	0.056	0.333	40	11833
			38	1306	1.1	1859	72	0.053	0.841	61	14627
			8.8	440	0.617	1729	58	0.044	0.348	28	9938
		12-Sep-22	32	1196	1	1610	79	0.038	0.522	57	7155
			3.6	313	3.4	1130	26	0.069	0.245	8.4	5906
			7.9	377	1.5	1497	30	0.085	0.302	15	9950
4.4			237	2.6	1488	31	0.067	0.281	7.6	10460	
5.2			387	1.6	1313	32	0.082	0.309	13	9869	
7			396	1.4	1064	28	0.091	0.225	14	7145	
7-Dec-22		3.6	268	0.729	1206	15	<0.03	0.268	5.5	9553	
		4	244	1.2	1278	23	<0.03	0.167	6.3	7990	
		25	806	1.3	1265	28	0.035	0.402	33	6989	
		12	389	0.714	1274	30	<0.03	0.134	14	6642	
RG_FOUSH	13-Jun-22	19	757	2.7	1688	34	0.064	0.201	23	6653	
		81	3320	1.9	2508	184	0.05	1.4	138	16234	
		57	1539	2.2	1758	67	0.044	0.522	90	14960	
		39	1817	1.5	2285	88	0.05	0.696	66	13517	

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Phosphorus	Silver	Selenium	Sodium	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc		
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw		
Mine-Exposed	RG_FOUCL	5-Dec-22	12251	0.062	5.8	3465	6.8	0.033	0.319	64	0.098	2.4	232	
			11937	0.0481	6.8	3226	3.5	0.0292	0.356	63	0.0848	1.92	215	
			11506	0.041	6.1	2919	3.8	0.026	0.208	33	0.062	1.2	171	
			12781	0.041	5.8	3759	3.8	0.019	0.139	19	0.063	0.739	173	
			12391	0.034	5.8	3216	5.1	0.016	0.302	26	0.064	0.716	226	
	RG_FOUNGD	13-Jun-22	18144	0.181	11	4643	6.1	0.076	0.887	60	0.118	1.7	905	
			14690	0.169	7.4	3625	8.9	0.089	0.908	226	0.155	6.8	485	
			13755	0.157	8.3	4043	5.7	0.087	0.478	100	0.09	2.9	646	
		15-Sep-22	13775	0.093	7.1	3564	3.4	0.043	0.203	89	0.067	2	185	
			13274	0.102	9.8	5319	4.1	0.033	0.359	45	0.065	1.2	272	
			9954	0.105	9.5	3445	3.2	0.034	0.208	109	0.1	2.3	251	
			13111	0.099	10	3499	4	0.04	0.308	62	0.102	1.6	256	
			14361	0.154	12	7010	4.5	0.053	0.323	88	0.101	2.3	372	
			15408	0.091	7.9	7039	5.6	0.05	0.818	58	0.073	1.8	290	
		6-Dec-22	13705	0.083	7	4441	5.3	0.036	0.487	87	0.08	2.2	241	
			12935	0.053	5.2	3972	4	0.026	0.373	39	0.053	1.1	261	
			14724	0.121	7.2	4869	5.1	0.032	0.675	34	0.067	1	353	
			13888	0.136	6.7	6684	5	0.044	0.407	76	0.08	1.9	204	
		RG_FODNGD	13-Jun-22	11164	0.065	5.1	2648	2.4	0.046	0.367	16	0.044	0.638	402
				14466	0.137	9.4	3376	8.5	0.094	0.642	187	0.235	5	483
	10869			0.108	6.1	3118	3.6	0.054	0.237	29	0.049	0.754	472	
	15-Sep-22		11519	0.052	9.2	3136	2.8	0.032	0.448	53	0.055	1.2	185	
			12524	0.088	7.4	5081	3.7	0.033	0.256	58	0.076	1.2	272	
			12563	0.22	11	8080	5.8	0.079	0.672	112	0.119	3	356	
			12781	0.12	9.2	3883	5.3	0.056	0.342	105	0.091	2.9	377	
			11933	0.084	7.9	6652	2.3	0.025	0.351	15	0.036	0.366	179	
			11119	0.06	4.1	3543	3.2	0.021	0.352	28	0.037	0.892	137	
	6-Dec-22		11127	0.06	8.2	3794	2.9	0.033	0.253	52	0.068	1.6	179	
			14747	0.227	7.1	11448	5.9	0.053	0.436	62	0.073	2.3	242	
			14487	0.151	7.2	4522	5.5	0.032	0.579	50	0.084	1.8	309	
			12259	0.113	6	4185	5.9	0.033	0.567	84	0.091	3.4	293	
			14260	0.122	5.8	3975	5.4	0.067	0.881	157	0.069	3.4	409	
			13567	0.144	6.5	3228	4.5	0.06	0.38	45	0.055	1.1	443	
	RG_MP1	13-Jun-22	9419	0.101	5.1	1902	5.5	0.085	0.827	232	0.1	5.2	549	
			9887	0.041	7	3839	2.1	0.02	0.139	11	0.036	0.573	143	
			11503	0.12	8.5	2830	4.2	0.026	0.404	44	0.065	1.5	301	
		12-Sep-22	12499	0.113	12	5759	3.1	0.03	0.299	12	0.037	0.5	227	
			13157	0.113	11	3708	3.1	0.026	0.31	28	0.053	1	215	
			9439	0.082	8.3	2054	3.5	0.022	0.254	36	0.041	1.4	180	
			12246	0.091	3.6	3041	2.5	0.021	0.233	19	0.026	0.572	151	
		7-Dec-22	10990	0.068	5.4	3718	3.5	0.021	0.187	24	0.03	0.813	187	
			10286	0.068	5.4	2637	5.2	0.047	0.619	121	0.089	3	147	
			8995	0.053	5.1	2717	4.1	0.019	0.161	44	0.036	1.2	150	
			9085	0.068	5.1	5114	7.3	0.066	0.292	111	0.088	4.8	170	
			14566	0.151	9.2	4305	11	0.136	1.2	379	0.149	9.2	654	
15052			0.151	6.3	4355	7.2	0.057	0.976	114	0.065	3.6	243		
RG_FOUSH		13-Jun-22	14993	0.166	6.4	3041	8.3	0.089	1.6	235	0.094	5.8	439	

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-taxa Benthic Invertebrate Tissue Chemistry, FRO LAEMP, 2022

Area	Date	Moisture	Dry Mass	Wet Mass	Aluminum	Arsenic	Antimony	Barium	Boron	Calcium	Cadmium	Copper	Cobalt	
	Units	%	g dw	g ww	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	RG_FOUSH	12-Sep-22	82.2	0.147	0.827	1305	0.858	0.069	51	1.8	2935	1.8	18	1.3
			80.3	0.2103	1.069	248	0.544	0.025	17	0.632	1365	1.2	15	0.413
			78.60	0.2405	1.1216	223	0.544	0.055	11	0.386	2328	1.5	14	0.744
		6-Dec-22	80.2	0.1063	0.5357	651	0.829	0.073	71	1.1	2987	1.2	13	1
			79.8	0.0954	0.4716	468	0.789	0.074	51	0.883	3222	1.8	15	0.448
			78.2	0.1292	0.5937	716	1.5	0.117	100	1.2	3252	1.4	16	0.648
			79.4	0.067	0.3248	1315	1.1	0.103	109	1.6	3810	2.8	16	1.1
	RG_FOUKI	18-Jan-22	77.7	0.0747	0.3346	443	0.908	0.06	77	0.828	2346	1.1	14	0.557
			63.9	0.14	0.3875	932	<0.56	0.066	42	0.909	3036	0.742	15	2.5
			66.8	0.0813	0.2449	307	<0.56	0.054	27	0.659	3134	0.584	22	1.6
			67.6	0.2732	0.8424	357	<0.56	0.087	50	0.659	4470	1.3	22	6.4
			65.3	0.1166	0.3365	317	<0.56	0.057	24	0.523	2758	0.28	12	1.3
		15-Feb-22	76.6	0.1324	0.5668	850	<0.56	0.117	88	1.4	7424	1.4	22	3.7
			70	0.1852	0.618	3024	0.754	0.472	386	3.8	66556	2	15	12
			79.6	0.0372	0.1826	5236	1.3	0.339	477	9.4	56828	2.5	18	12
			74.3	0.0509	0.1979	4730	0.874	0.165	134	4.6	7542	1.3	23	5.4
		15-Mar-22	69.7	0.0617	0.2038	1712	0.523	0.22	174	2.6	34381	1.6	26	4.4
			75	0.0352	0.1407	4819	0.857	0.28	362	6.7	51780	1.4	17	9
			82.5	0.0213	0.1218	5338	0.69	0.189	138	4.4	8335	1.7	23	8.1
			78.9	0.0296	0.14	10954	1	0.338	377	10	17130	1.7	24	5.4
			71	0.0732	0.2523	4541	0.546	0.173	128	3.8	9085	0.585	19	3.4
			71.6	0.0482	0.1696	11979	2.3	0.649	362	9.8	13512	1.3	27	15
	77		0.0932	0.4059	5565	0.778	0.351	361	5.6	27011	1.7	25	7.9	
	27-Jun-22	72	0.2655	0.9485	252	<0.498	0.015	18	0.371	1654	0.836	9.1	1.2	
		73.1	0.1739	0.6468	779	0.895	0.029	27	0.867	1896	9.5	18	17	
		69.2	0.2082	0.6755	697	0.525	0.04	34	0.867	3485	2.3	18	3.4	
		74.2	0.2727	1.0558	1341	1	0.072	63	1.5	2380	9.3	23	17	
		75	0.2597	1.0375	510	0.788	0.034	19	0.605	2272	8.6	20	12	
	13-Sep-22	77.4	0.2211	0.9787	378	<0.388	0.049	21	0.64	1294	0.975	11	0.626	
		75.3	0.304	1.229	79	<0.388	0.028	5.5	0.178	1029	1.1	8.4	0.439	
		76.5	0.1788	0.7596	267	<0.388	0.038	20	0.64	1982	1.3	13	1.2	
		74	0.2288	0.879	219	<0.388	0.046	16	0.569	1955	2.1	14	1.4	
		82.1	0.0917	0.5115	211	0.409	0.067	17	0.604	2398	1.7	16	0.986	
	8-Dec-22	77.7	0.2815	1.2648	900	0.945	0.083	56	1.5	4822	1.4	15	1.1	
		73.8	0.3173	1.2118	807	0.945	0.081	54	1.2	4333	1.1	11	0.63	
		76.7	0.3145	1.352	798	0.88	0.086	39	1.2	4245	1.3	14	1.1	
		77	0.3687	1.6037	235	0.489	0.049	22	1	2083	0.981	14	0.634	
		79.1	0.2234	1.0679	592	1.1	0.072	43	1	3465	1.3	18	0.905	
	RG_FOBKS	19-Jan-22	56.3	0.0031	0.0071	992	<0.56	0.054	86	1.1	14978	0.876	9.5	2.3
			67.1	0.0406	0.1235	302	<0.56	0.054	27	0.477	2992	0.632	19	1.2
			61.6	0.0253	0.0659	2373	0.629	0.089	173	2.2	19121	1.3	18	3.9
			66.7	0.0087	0.0261	1484	<0.56	0.066	131	1.6	14165	0.949	11	2.3
15-Feb-22		49.2	0.0093	0.0183	1472	<0.56	0.069	164	1.4	24094	0.991	13	2.8	
		73.1	0.0211	0.0784	2544	0.977	0.4	436	4.4	81768	2.1	18	12	
		76.7	0.0351	0.1506	17526	1.3	0.34	558	21	59492	1.7	15	11	
		78.5	0.0292	0.1355	6803	1.4	0.346	406	7.3	63422	1.8	25	6.2	
79	0.0544	0.2588	2316	0.703	0.212	260	3.4	39325	1.9	22	8.6			
75.9	0.0705	0.2924	4725	1	0.27	335	5.8	33185	1.5	29	3.8			

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Chromium	Iron	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	RG_FOUSH	12-Sep-22	9.9	1739	2.1	1645	85	0.099	0.312	24	9328
			3.6	559	3.3	1330	32	0.059	0.223	7.4	8891
			3.4	802	0.901	1370	14	0.064	0.156	8	6752
		6-Dec-22	8.3	3629	1.8	1374	146	0.043	0.268	14	6830
			5	2786	2	1693	45	0.039	0.301	10	10716
			8.1	6721	1.5	1474	132	0.046	0.368	17	8522
	11		5662	9.2	1778	63	0.064	0.268	20	9437	
		6.2	4338	1.9	1530	31	0.043	0.234	11	9343	
	RG_FOUKI	18-Jan-22	6.8	938	1.2	1196	69	0.025	0.366	20	9777
			2.2	407	0.841	1395	69	0.033	0.285	8.1	9724
			2.4	498	2.4	1899	206	0.041	0.366	17	10000
			4.3	452	0.594	878	52	0.022	0.3	12	6615
			2.4	634	4.2	2411	280	0.055	0.45	14	8805
		15-Feb-22	12	1930	3.1	2099	940	0.049	0.716	49	7934
			52	3349	3.9	3171	536	0.078	0.603	121	9940
			65	2751	2.3	1547	161	0.075	0.397	132	9910
			14	1118	1.7	2433	207	0.065	0.646	37	8466
			71	3679	4.4	2248	393	0.065	0.559	148	9666
		15-Mar-22	46	2115	3.6	1826	258	0.049	0.47	86	10174
			46	3208	3.5	2372	268	0.084	0.821	79	11227
			23	1345	1.8	1597	181	0.026	0.544	60	8080
			241	12264	4	2055	441	0.044	1.1	382	11347
			38	2754	2.8	2340	616	0.049	1.1	80	11099
		27-Jun-22	2.1	167	0.862	1271	34	<0.034	0.261	4.2	10601
			4.2	428	0.894	1480	66	0.06	0.29	17	10089
			4.7	399	1.3	1861	67	0.053	0.334	12	12589
			5.9	773	1.6	1853	119	0.058	0.466	20	12329
			4.5	398	1.4	1543	56	0.058	0.311	13	10550
		13-Sep-22	3	198	0.915	652	70	0.037	0.242	8.1	5507
			2.5	77	2.7	872	59	0.048	0.134	6.8	5202
			3.1	208	1.7	1435	228	0.048	0.269	18	13131
			3.8	216	1.6	819	127	0.048	0.322	15	5890
	2.7		196	1.3	1291	34	0.053	0.295	9.6	8939	
	8-Dec-22	7.1	964	1.8	1305	145	0.034	0.45	22	9544	
		11	854	1.1	1160	104	<0.03	0.42	21	7476	
		5	753	1.9	1138	138	<0.03	0.42	21	9246	
3.2		287	1.1	810	120	<0.03	0.3	10	7164		
	5.3	934	1.7	1390	122	0.049	0.36	18	7552		
RG_FOBKS	19-Jan-22	23	734	0.994	1201	80	0.028	0.395	37	2644	
		2.6	211	1	1111	63	0.033	0.219	6.7	8839	
		29	1779	2.1	1596	136	0.044	0.351	55	10886	
		29	927	1.4	1444	108	0.044	0.548	61	5891	
		18	805	1.2	1424	98	0.05	0.311	37	9168	
	15-Feb-22	55	2401	3.6	2912	695	0.086	0.795	145	8931	
132		5468	11	2914	350	0.075	0.577	282	15970		
172		5509	4.6	2464	331	0.067	3	381	10840		
77		2368	2.3	2142	299	0.07	0.568	164	9073		
	55	2746	3.4	2695	264	0.075	1.4	125	12102		

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Phosphorus	Silver	Selenium	Sodium	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	RG_FOUSH	12-Sep-22	12998	0.116	10	3134	5.3	0.035	0.461	109	0.08	3.2	348
		11457	0.07	9.6	4191	2.5	0.02	0.279	15	0.019	0.718	159	
		8840	0.105	6.2	2785	2.8	0.013	0.193	12	0.024	0.821	319	
		6-Dec-22	11407	0.06	5.7	2799	5.5	0.029	0.36	62	0.079	2.6	218
		14018	0.064	6.1	4172	5.4	0.028	0.484	42	0.068	2.3	184	
		12753	0.091	6.5	3377	6.9	0.035	0.371	57	0.089	4.3	196	
		12021	0.113	6.7	7698	11	0.066	0.35	92	0.111	3.9	204	
	11578	0.076	6.4	3191	6.6	0.025	0.284	44	0.085	3.3	223		
	RG_FOUKI	18-Jan-22	10056	0.098	3.3	3598	3.6	0.029	0.075	41	0.039	1.7	165
			9755	0.196	3.4	3729	4.4	0.023	0.156	16	0.024	0.583	147
			11780	0.274	4.6	5704	4.5	0.024	0.176	30	0.04	1.1	251
			6866	0.075	1.7	2074	3.3	0.018	0.174	20	0.019	0.675	118
			11386	0.233	5	7466	9	0.057	1.4	52	0.099	1.5	210
		15-Feb-22	8333	0.099	4.3	2155	51	0.056	0.408	272	0.528	6.6	178
			10465	0.123	6.6	3198	45	0.087	1.6	419	0.508	11	231
			9830	0.167	4.3	3280	14	0.07	0.408	409	0.214	9.9	218
			11941	0.189	4.5	2620	27	0.042	0.687	154	0.228	3.7	263
			9661	0.14	6.1	3098	46	0.072	0.458	376	0.483	12	184
		15-Mar-22	11868	0.182	6.3	4392	13	0.08	1	346	0.238	8.7	225
			10664	0.165	9.1	3240	37	0.158	1.6	856	0.464	17	287
			8931	0.151	3.6	2781	12	0.058	0.648	342	0.153	6.4	130
			9901	0.171	5.3	3508	32	0.225	0.617	951	0.446	26	183
			12608	0.199	6.7	4288	26	0.095	0.69	434	0.334	8.7	261
		27-Jun-22	10756	0.043	6.5	3407	2.3	0.036	<0.114	12	0.014	0.497	187
			9768	0.094	6.3	3240	2.7	0.09	0.34	56	0.062	1.5	599
			13611	0.173	5.8	3941	4.9	0.052	0.354	57	0.035	1.5	244
			14061	0.151	7.6	4941	4.6	0.077	<0.114	118	0.099	2.6	609
			10886	0.126	6.2	4739	2.9	0.058	0.164	33	0.045	0.91	439
		13-Sep-22	6369	0.061	7.9	1835	1.8	0.018	0.088	11	0.028	0.451	103
			7107	0.103	6.5	2422	0.941	0.011	0.06	3.1	0.008	0.143	153
			14291	0.078	9.3	3857	2.7	0.02	0.132	16	0.029	0.602	170
			9118	0.149	6.4	3183	2.3	0.023	0.084	12	0.024	0.43	175
			10685	0.171	7.9	3105	2.7	0.019	0.405	14	0.031	0.502	256
		8-Dec-22	12154	0.103	5.7	4625	6.3	0.046	0.208	83	0.106	2.4	194
			11442	0.076	3.9	2951	6.1	0.034	0.177	77	0.071	1.9	180
			11464	0.1	5.3	4509	5.5	0.039	0.127	76	0.083	1.8	139
	9448		0.069	4.3	3146	2.5	0.02	0.158	18	0.035	0.582	141	
	10484		0.144	5.8	3854	5.1	0.036	0.167	61	0.07	1.6	211	
	RG_FOBKS	19-Jan-22	4425	0.117	2.6	1286	13	0.026	0.875	69	0.088	2	190
			9829	0.133	4.1	3571	3.6	0.029	0.297	13	0.035	0.538	141
			10985	0.173	4.1	4647	16	0.05	0.426	158	0.149	4.8	244
			6880	0.093	3.4	2682	11	0.039	0.559	94	0.114	2.7	219
			10410	0.158	5	3032	17	0.036	0.522	78	0.142	2.3	315
		15-Feb-22	10390	0.186	7.9	2834	45	0.077	0.838	196	0.518	7.2	249
			10750	0.154	5.2	4015	46	0.188	1.3	1500	0.784	38	199
			10352	0.156	6.3	2964	41	0.094	0.84	549	0.572	15	239
			10709	0.17	5.4	2828	25	0.053	0.613	175	0.392	6.2	302
			11760	0.222	5.7	3947	26	0.087	1	453	0.4	8.8	228

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-taxa Benthic Invertebrate Tissue Chemistry, FRO LAEMP, 2022

Area	Date	Moisture	Dry Mass	Wet Mass	Aluminum	Arsenic	Antimony	Barium	Boron	Calcium	Cadmium	Copper	Cobalt
	Units	%	g dw	g ww	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Mine-Exposed	15-Mar-22	82.4	0.0453	0.2577	6339	1	0.17	168	5.4	12055	1.2	21	4.8
		76.5	0.0652	0.2775	5001	0.816	0.164	198	4.2	20856	2.6	21	7.6
		72.3	0.1392	0.5032	5350	1	0.4	417	5.9	55645	1.8	29	9.5
		77.9	0.0714	0.3227	4359	0.829	0.262	302	5.2	35542	2.2	16	5.3
		80.3	0.0324	0.1644	5478	1.2	0.268	519	5.8	32271	2.9	19	8.9
	13-Jun-22	73.3	0.0306	0.1145	1351	<0.498	0.057	27	1.4	1939	0.331	41	0.643
		74.5	0.0138	0.0541	3358	1.2	0.07	58	3.3	3618	8.7	19	6.9
		70.4	0.0468	0.1581	206	<0.498	0.02	15	0.23	1368	0.661	16	0.805
		68.5	0.032	0.1015	783	0.88	0.023	19	0.919	1728	8.7	18	12
		69.4	0.0139	0.0454	3202	0.981	0.06	58	2.7	3742	7	16	5.6
	12-Sep-22	80.8	0.0654	0.3398	648	0.93	0.155	29	1.3	4650	5.3	14	2.5
		81.60	0.0472	0.2561	1111	0.999	0.422	43	2.1	4182	7.9	17	3.4
	13-Sep-22	81.5	0.0425	0.2295	1922	1.2	0.325	63	2.2	4282	9.2	20	4
		78.8	0.0989	0.4668	638	0.418	0.056	28	0.977	2895	3	12	1.1
		82.6	0.1041	0.5969	805	0.86	0.159	43	1.3	3983	6.6	18	3.2
	7-Nov-22	81.7	0.1589	0.8675	794	1	0.066	51	1.6	10780	1.8	27	0.8
		81.7	0.1333	0.7267	268	0.347	0.026	14	0.689	3044	1.4	12	0.351
		83.2	0.1684	1.0038	433	0.71	0.04	28	1	5067	1.5	19	0.773
		77.1	0.2182	0.9528	152	0.347	0.026	15	0.378	3333	0.42	16	0.395
		83.7	0.1041	0.6373	315	0.379	0.033	23	0.711	5000	0.979	22	0.501
	8-Dec-22	78	0.1745	0.7944	301	<0.395	0.039	22	0.668	3891	1.8	20	1.2
		77.5	0.262	1.1648	345	<0.395	0.048	18	0.724	2786	1.3	19	1.1
		78.6	0.2018	0.942	629	<0.395	0.041	29	0.918	3962	3.1	18	2.8
		82.2	0.1448	0.8157	427	0.407	0.052	26	0.779	4152	0.834	20	0.863
		80.9	0.1889	0.9865	1035	0.774	0.084	60	2.1	7312	1.7	23	1.9
	20-Jan-22	76.1	0.1258	0.5269	370	<0.56	0.044	18	0.647	2311	3.6	19	2.3
		72.7	0.0642	0.2353	1770	0.532	0.076	39	2.1	1874	1.6	24	5
		72.6	0.0806	0.2944	208	<0.56	0.03	14	0.514	1396	1.6	16	2.3
		73.7	0.062	0.2354	442	<0.56	0.036	18	0.558	2114	1	23	1.1
		69.1	0.0627	0.2026	585	<0.56	0.05	27	0.851	3031	0.878	28	0.983
	16-Feb-22	76.9	0.0124	0.0536	26014	2.7	0.572	302	24	23106	1.5	51	41
		79.6	0.0348	0.1706	2601	0.755	0.103	65	2.8	3980	1.4	19	2.1
		80.2	0.0706	0.3568	4246	0.675	0.138	82	3.6	5632	1.5	20	4.1
		83.8	0.0317	0.1953	10585	1.6	0.379	265	10	10970	0.967	18	17
		74.9	0.0735	0.2925	20321	2.3	0.549	413	18	11343	1.6	18	10
	15-Mar-22	79.7	0.0518	0.2547	4920	0.889	0.166	132	4.4	6076	1.6	18	2.6
		80.3	0.0466	0.237	4053	1.2	0.12	82	3.9	5545	1.1	17	1.6
		71.5	0.1444	0.5066	4604	1.1	0.269	164	4.7	5236	1.9	20	23
		77	0.0467	0.2033	20390	2	0.43	361	23	10490	1.7	23	11
		77.2	0.1246	0.5458	4679	0.894	0.126	98	4.3	4863	0.997	22	4
13-Jun-22	72.5	0.118	0.4292	1014	0.508	0.037	36	0.952	2076	2.7	21	3.5	
	82.2	0.0224	0.1256	6310	1.2	0.127	102	6.1	6465	4.6	22	8.6	
	73.5	0.049	0.1848	3242	1.1	0.045	53	2.8	2994	7.9	16	10	
	81.6	0.019	0.1031	2982	0.711	0.047	52	3.6	3105	3.6	16	3	
	74.1	0.0311	0.1201	513	0.541	0.014	24	0.657	2945	3.8	15	3	
13-Sep-22	65.3	0.2956	0.8509	205	<0.388	0.024	16	0.445	2094	1.8	17	1.9	

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Chromium	Iron	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	RG_FOBKS	15-Mar-22	46	2182	3.1	2110	148	0.056	0.45	82	11719
			59	2292	2.8	2437	251	0.074	0.391	70	8082
			38	2918	4.5	2460	597	0.046	0.747	77	8133
			37	1779	3	2198	350	0.074	0.475	67	10536
			61	3166	2.9	2389	497	0.084	0.484	168	10156
		13-Jun-22	17	720	1.7	1041	28	<0.034	0.542	29	11192
			33	1754	1.5	1705	77	0.045	0.655	51	9745
			6.3	393	1.4	1116	35	<0.034	0.203	9.3	7789
			10	598	0.638	1504	50	0.076	0.294	19	10477
			36	2094	1.5	1443	78	0.056	0.768	48	10549
		12-Sep-22	4.7	386	1.3	1400	145	0.073	0.383	28	8648
		13-Sep-22	9.9	755	1.8	1786	104	0.081	0.487	41	12169
			13	915	1.9	2131	129	0.102	0.522	46	11758
			4	323	1.3	1250	121	0.057	0.261	17	8098
			5.1	527	4.4	2193	106	0.081	0.348	36	11996
		7-Nov-22	9.8	563	1.7	1607	50	0.028	0.542	23	9731
	4.2		221	1.7	778	19	0.028	0.339	8.2	4454	
	4.4		360	5.3	1655	51	0.031	0.429	15	9876	
	2.9		163	1.2	1198	69	0.028	0.203	8.6	6915	
	5.1		264	1.3	1374	29	0.034	0.339	10	6795	
	RG_SCDSB	8-Dec-22	6.1	470	1.2	1874	68	0.047	0.348	13	11329
			5.9	441	1.7	1925	58	0.047	0.661	12	11349
			9.6	778	0.962	1905	95	0.071	0.487	19	9723
			10	605	1.9	1564	43	0.04	0.487	22	11328
			21	1569	2	2038	72	0.04	0.418	41	13330
	RG_SCOUTDS	20-Jan-22	4.6	333	1.6	1530	86	0.066	0.26	12	10483
			26	1394	1	1468	81	0.089	0.355	49	8704
			3	229	0.546	1394	53	0.057	0.237	7.8	9942
			6.2	344	0.728	1275	45	0.038	0.278	12	9312
			3.2	393	0.685	1830	47	0.047	0.296	9.2	8986
		16-Feb-22	733	26037	15	4023	312	0.081	4.5	1565	12839
			22	1208	1.4	2159	102	0.054	0.784	60	10061
			40	1697	1.8	1863	139	0.048	0.449	96	9349
			287	10446	4.1	2837	223	0.048	0.883	680	10086
			116	8703	7	2837	266	0.078	0.967	290	13308
		15-Mar-22	24	1759	2	2056	139	0.043	0.843	53	10800
			28	1550	1.8	1722	65	0.043	0.81	50	11378
			47	2526	2.3	1623	1130	0.065	0.881	98	11267
			77	5383	7.3	2907	506	0.076	1.3	151	14652
			41	1900	2.2	1941	116	0.046	0.531	74	13230
		13-Jun-22	12	610	0.94	1151	49	<0.034	0.486	18	11633
			90	4093	2.7	2213	108	0.039	0.938	117	10493
			52	1672	1.5	1498	49	0.062	0.373	65	13344
	32		1441	1.3	1282	52	0.045	0.576	48	7619	
13-Sep-22	11	390	0.652	1552	34	0.039	0.249	18	13482		
3.3	276	1.2	1541	117	0.049	0.365	13	10482			

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Phosphorus	Silver	Selenium	Sodium	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc		
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw		
Mine-Exposed	RG_FOBKS	15-Mar-22	12135	0.181	6.7	4783	16	0.09	0.657	434	0.256	8.9	250	
			9945	0.132	6	2963	22	0.079	0.519	309	0.257	9.5	282	
			10884	0.185	5.1	3531	43	0.102	0.467	407	0.5	8.8	175	
			11702	0.143	9.2	3474	26	0.091	0.754	332	0.377	7.8	295	
			9972	0.176	8.2	3411	36	0.116	1.3	381	0.45	9.4	341	
		13-Jun-22	9891	0.212	5	4416	3.4	0.029	0.44	92	0.044	2	204	
			14445	0.133	6.3	2491	7.7	0.087	1.2	242	0.082	5.6	554	
			10099	0.133	4.6	2059	2.7	0.024	0.359	10	0.012	0.607	165	
			10098	0.115	4.5	3377	2.3	0.071	0.261	49	0.052	1.6	852	
			10717	0.097	4.7	2643	7	0.072	0.652	225	0.089	5.5	428	
		12-Sep-22	10987	0.096	11	3144	4.4	0.032	0.653	39	0.089	1.1	340	
			13-Sep-22	14243	0.147	11	4121	6	0.056	1.4	66	0.102	1.7	411
				13762	0.171	12	4053	8.3	0.056	1	83	0.117	2.8	550
		7-Nov-22	9816	0.076	8.2	2683	3.2	0.025	0.411	41	0.056	1.1	197	
			15482	0.131	11	7757	5.2	0.055	0.523	50	0.1	1.4	443	
	13360		0.209	5.5	4116	9.8	0.024	0.6	48	0.111	1.4	356		
	7273		0.108	3	2635	3.1	0.009	0.197	19	0.034	0.562	135		
	10523		0.162	5.2	6996	5	0.021	0.51	28	0.071	0.935	205		
	RG_SCDSB	8-Dec-22	10846	0.101	4.3	3586	2.9	0.009	0.158	8	0.036	0.31	180	
			10649	0.173	7.3	3205	4.9	0.014	0.435	25	0.059	0.706	288	
			15644	0.095	9.6	4202	4.6	0.031	0.454	29	0.057	0.866	291	
			14756	0.123	10	4945	3	0.028	0.438	27	0.043	0.779	207	
			11922	0.113	12	3677	5.5	0.044	0.522	54	0.091	1.6	428	
	RG_SCOUTDS	20-Jan-22	13805	0.113	7.4	5318	5	0.025	0.427	34	0.07	1	217	
			14613	0.161	9.6	5688	9.4	0.049	0.849	100	0.152	2.8	229	
			11707	0.112	7.5	5723	3	0.041	0.219	25	0.031	0.746	214	
			8737	0.091	8.2	2859	5.3	0.057	0.422	190	0.098	3.7	313	
			10743	0.051	6.8	3394	2	0.029	0.162	14	0.035	0.4	228	
		16-Feb-22	10639	0.121	6.1	2775	2.6	0.028	0.376	29	0.042	0.852	149	
			12696	0.121	6.3	2620	3.9	0.035	0.549	41	0.048	1.1	152	
			9858	0.184	6	3829	52	0.183	3.9	1738	0.626	50	164	
			11173	0.092	6	2926	9.1	0.062	0.825	186	0.153	4.6	301	
			10664	0.121	5.4	2631	9.3	0.066	1.2	313	0.196	6.8	174	
		15-Mar-22	12751	0.115	5.9	2746	22	0.136	1.6	955	0.567	25	174	
			10349	0.137	6.6	3229	34	0.181	1.4	1273	0.613	35	257	
			11892	0.113	6.8	3664	15	0.109	1.6	363	0.186	8.4	184	
			10638	0.13	5.4	3765	9.1	0.093	1.3	283	0.147	7.4	164	
			14459	0.107	10	3929	11	0.067	0.643	295	0.219	8	216	
		13-Jun-22	10624	0.142	7.9	3604	29	0.199	2	1399	0.865	30	226	
			13663	0.131	8.4	4327	11	0.066	0.977	318	0.187	8.1	185	
			10885	0.115	6.3	3743	3.9	0.041	0.504	41	0.032	1.8	413	
			13180	0.188	6.2	2413	11	0.116	1.6	257	0.206	12	383	
	12230		0.145	5.7	3539	6.2	0.071	0.939	127	0.081	5.3	430		
	9825		0.121	4.2	1911	5.7	0.062	1.7	133	0.094	5.4	269		
14329	0.103		4.6	3140	3.8	0.038	0.954	32	0.025	0.956	320			
13-Sep-22	14640	0.12	9.3	3054	2.2	0.013	0.079	10	0.026	0.469	247			

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-taxa Benthic Invertebrate Tissue Chemistry, FRO LAEMP, 2022

Area	Date	Moisture	Dry Mass	Wet Mass	Aluminum	Arsenic	Antimony	Barium	Boron	Calcium	Cadmium	Copper	Cobalt	
	Units	%	g dw	g ww	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	RG_SCOUTDS	14-Sep-22	73.8	0.2559	0.9771	1162	0.602	0.08	42	1.7	3656	3.2	16	2.5
			82.2	0.1964	1.1035	274	<0.388	0.021	9.9	0.594	2046	2.8	12	0.866
			78.60	0.1951	0.9102	557	0.417	0.039	20	0.742	2080	2.8	16	1.9
			79.8	0.1055	0.5212	435	<0.388	0.031	14	0.854	2623	1.7	13	0.947
		7-Nov-22	76.9	0.2241	0.972	450	0.315	0.025	20	0.845	2980	1	10	0.681
			78.6	0.3189	1.4871	463	0.316	0.029	29	0.934	3546	0.979	12	0.861
			80.2	0.2375	1.2021	228	<0.298	0.015	10	0.4	2607	1.4	11	0.299
			76.8	0.3623	1.5607	147	<0.298	0.03	11	0.435	3348	1.5	17	0.547
			78.7	0.2614	1.2298	216	<0.298	0.026	14	0.49	4030	1.1	17	0.588
			81.8	0.0746	0.4103	1281	1.3	0.593	231	4.9	10912	3.3	21	3.4
		19-Aug-22	81.4	0.1485	0.7971	590	0.737	0.037	25	1.3	4919	4.8	20	3.9
			76.6	0.1122	0.48	1256	0.625	0.047	37	2.2	2583	2.6	13	2.5
	79		0.3149	1.4984	278	<0.395	0.028	19	0.836	3558	0.965	15	0.528	
	8-Dec-22	75.9	0.2534	1.0531	199	<0.395	0.026	12	0.429	2722	1.1	14	0.777	
		80	0.2581	1.2921	170	<0.395	0.026	11	0.552	3382	2.5	12	0.586	
		74.6	0.3674	1.4454	225	<0.395	0.026	14	0.491	2787	0.641	15	0.943	
		77.5	0.2312	1.0275	318	<0.395	0.027	20	0.92	5135	1.5	19	0.56	
		70.2	0.1174	0.3936	1756	<0.56	0.07	36	1.5	1576	0.521	16	2.8	
	RG_FOBSC	20-Jan-22	76.4	0.1097	0.4642	299	<0.56	0.041	18	0.496	1994	1.6	20	2
			72.1	0.0796	0.2855	464	<0.56	0.063	26	0.86	2082	0.77	19	2.1
			76.4	0.0996	0.4224	1048	<0.56	0.066	45	1.1	2227	2.8	27	3.1
			74	0.1265	0.486	331	<0.56	0.059	22	0.567	2181	1.5	19	5.4
			77.5	0.0214	0.095	1257	0.634	0.108	53	1.9	4085	1.2	14	2.1
		16-Feb-22	77.6	0.0639	0.2848	1913	0.531	0.152	117	2.1	6268	1.7	21	18
			77.3	0.0451	0.1987	2692	0.857	0.165	96	2.9	5910	1	21	2.1
			74.9	0.043	0.1712	848	0.531	0.087	47	1.3	2308	1.1	27	3.4
			71.2	0.0449	0.156	5863	1.1	0.229	146	6.2	5407	1.8	17	8.9
			78.1	0.0615	0.2803	5545	0.741	0.157	147	4.9	4960	0.519	20	1.4
		17-Mar-22	85.7	0.0335	0.2347	5914	0.706	0.12	156	5.6	7185	0.681	11	2.5
			79.7	0.0985	0.485	3267	0.547	0.151	92	3.4	4398	1	38	2.5
			76.5	0.1131	0.4823	4541	0.829	0.179	95	4.6	2600	0.908	22	3.2
			74.1	0.0754	0.2916	2273	<0.49	0.164	91	3.7	7628	1.4	36	0.97
		28-Jun-22	78.1	0.1611	0.7345	880	1.5	0.045	25	1.3	3146	9	21	9.9
			73.3	0.1986	0.744	984	1.1	0.053	32	1.8	3203	12	24	12
			78	0.1557	0.7072	694	1.5	0.033	19	1	3522	12	23	9.4
			78.2	0.1175	0.5383	1108	2.1	0.051	32	1.9	3350	13	21	15
	77.2		0.1487	0.6535	1346	1.3	0.046	31	1.5	3436	13	23	13	
	13-Sep-22	79.3	0.0678	0.3268	907	0.534	0.06	48	1.4	3064	5.2	18	2.6	
		78	0.1487	0.6773	733	<0.388	0.039	16	0.662	2344	2.9	16	1.6	
	14-Sep-22	81.4	0.0592	0.3182	854	0.558	0.053	30	1.2	3412	4.7	16	3.3	
74.7		0.172	0.6798	599	0.441	0.043	26	0.977	2310	3.5	14	2.2		
82.5		0.0772	0.4401	575	0.581	0.048	34	0.962	2551	5.3	12	1.9		
7-Nov-22	74.6	0.3751	1.4774	128	<0.298	0.018	9.3	0.381	1290	0.47	9	0.567		
	76.6	0.3164	1.3515	179	<0.298	0.026	10	0.381	1589	0.84	9.3	0.643		
	77.7	0.2425	1.089	123	<0.298	0.014	7	0.299	2046	0.939	11	0.294		
	80.6	0.3584	1.8495	192	<0.298	0.026	12	0.544	2422	0.692	11	0.38		
	79.6	0.3644	1.7863	127	<0.298	0.015	9.3	0.272	2329	0.643	11	0.304		

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Chromium	Iron	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	RG_SCOUTDS	14-Sep-22	5.9	973	2.2	1965	140	0.079	0.505	20	16735
			3.8	282	1.3	1210	40	0.052	0.253	13	8666
			4.4	549	1.8	1357	105	0.055	0.393	17	10385
			6.5	378	1.2	1242	37	0.043	0.309	18	7820
		7-Nov-22	4.1	464	0.902	1436	97	0.022	0.294	9.9	7579
			3	436	1.2	1612	122	<0.021	0.271	10	9413
			3.4	216	0.607	1379	25	<0.021	0.249	6.6	6591
			3.3	220	1.6	1923	43	0.043	0.348	6.5	10742
		19-Aug-22	3.3	266	0.844	2474	38	0.022	0.261	6.4	9837
			58	2322	2.9	3450	140	0.094	1.7	155	8814
			7.2	496	1.2	2257	54	0.102	0.601	25	7777
		8-Dec-22	22	1015	1.4	1326	46	0.056	0.394	42	7929
	4.2		621	1.2	1743	53	<0.03	0.425	9.3	11197	
	4.1		356	0.72	1469	79	0.031	0.356	8.2	9713	
	3.6		365	3.7	1687	65	0.046	0.395	6.5	9176	
	RG_FOBSC	20-Jan-22	3.6	385	0.854	1455	124	0.031	0.356	7.3	8466
			4.7	635	0.815	1732	49	0.039	0.395	9.3	11094
			11	725	1.1	1343	87	0.035	0.291	29	9528
			3.3	231	0.7	1495	53	0.053	0.284	8.6	7939
			3.3	308	1.1	1475	68	0.034	0.26	16	10307
		16-Feb-22	12	700	0.97	1264	91	0.07	0.373	26	9781
			2.7	242	0.646	1190	173	0.051	0.414	20	7978
			14	750	1.3	1588	104	0.043	0.463	34	10626
			23	1240	2	1317	902	0.07	0.76	89	8749
			24	1436	1.8	1575	102	0.043	0.708	59	11116
		17-Mar-22	12	594	1.1	1321	130	0.065	0.459	31	7119
			99	4133	2.5	1878	279	0.078	0.543	226	11527
			42	1859	1.8	1849	75	0.042	0.877	69	7811
			41	2138	3	2160	57	0.051	0.521	74	7952
			19	1129	1.6	2053	83	0.056	0.48	37	8917
		28-Jun-22	52	2538	2	1585	103	0.044	0.521	103	10444
			14	690	1.3	2219	43	0.061	0.63	38	8406
			5.3	522	0.887	1708	78	0.073	0.435	21	14612
	6		704	1	1796	90	0.058	0.466	21	12797	
	4.2		482	0.895	1699	73	0.065	0.311	18	13234	
	13-Sep-22	5.2	676	1.1	1735	103	0.069	0.497	26	13936	
6.1		683	1.1	1848	87	0.073	0.466	26	13169		
5.7		670	1.3	1890	88	0.073	0.418	24	11441		
14-Sep-22	2.8	340	0.844	1550	41	0.045	0.244	11	9187		
	6.8	586	1	1778	67	0.061	0.505	22	10852		
	3.9	451	0.957	1400	126	0.061	0.296	17	8377		
7-Nov-22	3.7	408	0.818	1578	69	0.065	0.296	17	8983		
	2.1	159	0.663	953	87	<0.021	0.261	6	5419		
	2	218	0.721	1146	67	<0.021	0.29	9	6953		
	2.1	153	0.518	1809	49	0.022	0.319	4.3	8582		
	2.2	215	1.4	1573	52	<0.021	0.392	9	12398		
	2.4	156	0.65	1303	25	0.025	0.246	6.8	7646		

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Phosphorus	Silver	Selenium	Sodium	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	14-Sep-22	16725	0.113	10	4005	4.9	0.043	0.731	89	0.077	2.7	343	
		8028	0.063	6.2	4003	2.3	0.019	0.259	18	0.028	0.632	183	
		11625	0.088	8.8	4753	2.7	0.026	0.658	35	0.047	1.4	192	
		10581	0.101	6.7	2925	3.4	0.02	0.274	35	0.036	1.1	165	
	7-Nov-22	11668	0.058	6.2	2942	3.4	0.013	0.434	30	0.044	0.843	166	
		12243	0.065	6.2	4139	3.9	0.014	0.452	32	0.059	0.758	240	
		10171	0.065	5.7	2533	2.6	0.011	0.339	12	0.047	0.425	169	
		14490	0.115	8.9	6327	3.5	0.014	0.272	8.5	0.036	0.298	260	
	19-Aug-22	16153	0.094	6.3	4288	4.4	0.011	0.681	16	0.04	0.398	370	
		7847	0.12	11	1932	20	0.054	0.666	457	0.767	15	496	
		8810	0.109	9.9	1741	5.8	0.016	0.413	74	0.077	1.7	697	
	8-Dec-22	6674	0.089	8.5	1439	3.4	0.018	0.483	170	0.082	4	419	
		14136	0.048	7.8	4543	3.8	0.029	0.62	19	0.097	0.802	208	
		12649	0.059	9.2	3522	2.8	0.012	0.345	13	0.043	0.403	205	
		11527	0.059	7.5	6557	2.2	0.029	0.413	17	0.036	0.409	170	
	RG_SCOUTDS	20-Jan-22	11293	0.059	7.4	2983	3.2	0.013	0.417	14	0.041	0.518	176
			13036	0.067	8.9	4188	4.5	0.027	0.627	24	0.057	0.763	223
			10911	0.082	6	3931	3.4	0.033	0.372	92	0.049	2.6	206
			9662	0.144	7.6	2949	2.3	0.035	0.254	17	0.042	0.492	242
		16-Feb-22	13048	0.061	7.1	3519	2.7	0.038	0.298	34	0.046	1	132
			10523	0.156	8.7	3054	4.1	0.057	0.389	73	0.068	1.9	282
			9025	0.115	7.9	2876	2.9	0.038	0.236	17	0.045	0.579	180
			11973	0.073	5	3359	6.5	0.043	1.1	141	0.119	2.9	226
		17-Mar-22	10189	0.131	7.9	3082	8	0.04	0.629	140	0.105	4.2	202
			13064	0.103	7.4	3978	9.9	0.055	0.797	196	0.154	5.2	200
			9722	0.157	6.7	2482	4.7	0.034	0.403	64	0.071	2.1	198
			11605	0.093	9.1	3028	13	0.094	0.669	421	0.314	11	287
	28-Jun-22	9397	0.11	7.2	2058	13	0.062	0.617	435	0.193	9.1	171	
		7606	0.093	7.3	2345	15	0.058	1.1	470	0.276	9.7	136	
		10439	0.22	9.9	3238	9.5	0.052	0.603	256	0.174	5.8	219	
		10042	0.103	7.3	3569	7.8	0.058	0.386	382	0.181	8.7	192	
	13-Sep-22	10461	0.189	7.3	2419	12	0.088	0.484	158	0.424	3.7	277	
		13343	0.168	6.2	4054	4.1	0.058	0.721	87	0.067	1.8	427	
		13342	0.16	7.2	3767	4	0.08	0.277	118	0.078	2.3	542	
		13195	0.151	6.9	4021	3.9	0.071	0.521	50	0.053	1.3	459	
	14-Sep-22	12418	0.134	7.7	4577	4.8	0.091	0.548	127	0.085	2.8	523	
		13077	0.16	7.4	4231	4	0.105	0.498	101	0.108	2.2	589	
		14548	0.072	13	3664	4.7	0.057	0.784	70	0.085	1.5	429	
		12158	0.076	8.4	3498	3.1	0.027	0.763	63	0.037	1.2	260	
	RG_FOBSC	7-Nov-22	13108	0.068	11	3593	4.9	0.048	1.3	67	0.071	1.4	399
12525			0.068	10	2946	3.1	0.033	0.552	39	0.066	1	361	
11040		0.064	9.7	3253	3.1	0.04	0.545	37	0.059	0.876	310		
8835		0.043	5.9	3189	1.4	0.011	0.158	8.5	0.017	0.272	129		
9372		0.043	6.8	2936	1.9	0.012	0.178	11	0.034	0.321	131		
7-Nov-22	14114	0.04	4.6	2292	1.9	0.009	0.259	7.3	0.026	0.252	158		
	14866	0.036	6.8	6148	2.7	0.016	0.34	11	0.048	0.275	156		
	12291	0.043	6.1	3378	2.4	0.009	0.228	7.1	0.034	0.237	185		

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-taxa Benthic Invertebrate Tissue Chemistry, FRO LAEMP, 2022

Area	Date	Moisture	Dry Mass	Wet Mass	Aluminum	Arsenic	Antimony	Barium	Boron	Calcium	Cadmium	Copper	Cobalt	
	Units	%	g dw	g ww	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	RG_FOBSC	8-Dec-22	76.5	0.3283	1.397	146	<0.395	0.019	8.5	0.306	2331	0.545	10	0.325
			79.1	0.2673	1.2801	135	<0.395	0.013	8.4	0.394	2534	0.872	11	0.462
			80.5	0.2403	1.2333	259	<0.395	0.027	16	0.557	3829	0.834	14	0.401
			77	0.2931	1.2755	299	<0.395	0.027	15	0.557	3065	0.723	16	0.535
			77.3	0.266	1.171	352	<0.395	0.023	21	0.612	2456	1	10	0.758
	RG_FOBBCP	15-Mar-22	76.8	0.0437	0.1882	7573	0.804	0.209	208	6.8	14728	4.9	58	4.6
			76	0.1402	0.583	8020	0.921	0.217	219	6.3	6645	5.9	35	8.9
			80.1	0.0512	0.2576	6488	1	0.17	153	4.8	4896	6.3	23	8
			81.3	0.0729	0.389	3574	0.72	0.096	88	2.8	4441	1.5	24	3.2
			78.8	0.085	0.4004	10387	1.3	0.254	249	8.2	6005	11	28	15
		29-Jun-22	77.5	0.0999	0.4438	1910	1.2	0.047	55	2.9	4930	13	26	11
			73.2	0.1314	0.4895	896	1	0.026	39	1.1	2958	9	17	8
			76.3	0.0975	0.4116	1333	1.1	0.046	35	1.4	3520	12	24	11
			74.9	0.1131	0.4503	1445	0.987	0.039	33	1.6	3755	11	25	17
			72.8	0.1166	0.4282	840	0.883	0.031	43	1.1	2568	8.3	22	5.7
		14-Sep-22	80.5	0.0732	0.38	1434	0.743	0.065	41	2	4191	5.3	15	3.7
			81	0.0838	0.44	1608	0.93	0.099	57	2.7	3913	5.1	14	3.5
			75.7	0.0705	0.2901	771	0.79	0.076	35	1.2	2714	5.8	15	2.5
			79.9	0.0627	0.31	536	0.72	0.055	28	1.1	3146	6.7	15	3.3
		15-Sep-22	79.7	0.0935	0.46	1177	0.871	0.077	54	2.6	3555	5.3	16	2.6
	77.2		0.1885	0.8264	601	<0.498	0.026	16	0.667	2724	6.6	18	7.8	
	RG_FRCP1SW	28-Jun-22	72.8	0.1632	0.6004	2004	1.5	0.088	51	2	3765	6.7	18	4.8
			75.4	0.1159	0.4714	524	0.727	0.03	17	0.693	5089	6.5	26	6.9
			76.4	0.137	0.5817	236	<0.498	0.01	20	0.267	2602	2.7	16	2.4
			74.5	0.1767	0.693	282	<0.498	0.023	9.8	0.32	2200	1.3	15	0.846
		19-Sep-22	81	0.2059	1.0863	152	<0.388	0.02	8.6	0.408	1205	1.4	11	0.736
			74.10	0.3434	1.3281	351	0.388	0.027	19	0.758	2370	0.937	21	0.816
			80.9	0.1625	0.8504	577	<0.388	0.03	23	1	2400	1.2	14	1
			80.4	0.2297	1.1714	373	<0.388	0.03	18	0.738	2251	1.2	16	1
			79.9	0.1573	0.7809	444	0.45	0.032	16	0.798	1898	1.2	14	1.2
			79.4	0.1253	0.6074	964	<0.56	0.055	29	1.3	1820	1.5	11	2.9
	RG_FRSCH2	19-Jan-22	66.8	0.021	0.0632	1733	0.909	0.072	32	2.2	4630	0.714	23	3.4
			75.7	0.1737	0.7158	1033	0.66	0.084	30	1.9	3489	1	18	1.6
			72.8	0.1378	0.5071	297	0.628	0.055	13	0.595	2571	4.3	20	4.3
			58.5	0.0337	0.0812	11120	1.6	0.426	156	11	4395	4	22	22
			80.4	0.0981	0.4999	981	0.745	0.107	33	3.1	3366	2.6	24	4.4
		16-Feb-22	74.8	0.0661	0.2622	6523	1.8	0.309	109	10	6335	2	23	7.7
			78.7	0.0495	0.2323	14335	2.4	0.343	195	14	4391	8.3	25	24
			79.1	0.0474	0.2267	2137	0.874	0.084	61	4.4	7848	0.583	17	4.6
			80.7	0.0419	0.2173	5219	1.3	0.272	97	8	9488	1.6	25	7.1
77.6			0.1068	0.477	2115	0.894	0.111	57	4.3	7455	1.3	19	1.1	
16-Mar-22		76.2	0.1824	0.7666	3035	1.8	0.123	78	5.6	3717	6.3	17	8.2	
		75.8	0.0766	0.3162	3805	1.3	0.15	87	5	4030	6.4	26	12	
		80.1	0.1303	0.6564	4464	1.2	0.131	80	5.6	6052	5.2	16	4.7	
		76.5	0.1051	0.4471	3586	1.1	0.179	77	4.8	4828	3.5	21	3.5	

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Chromium	Iron	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	RG_FOBSC	8-Dec-22	4	238	0.584	1224	31	<0.03	0.27	6.2	7974
			3.2	265	0.958	1210	39	0.039	0.39	13	10037
			4.6	391	1.1	1664	37	<0.03	0.348	13	13444
			7	426	0.968	1484	36	0.034	0.278	13	10523
			3.8	445	0.891	1156	95	<0.03	0.418	15	8587
	RG_FOBBCP	15-Mar-22	59	3080	2.9	2629	258	0.098	1.3	100	10074
			39	2585	3.8	2232	247	0.087	0.657	79	16399
			23	1706	2.5	1826	96	0.096	0.766	59	12936
			16	1093	1.8	1826	131	0.076	0.443	37	11723
			178	4578	3.3	2032	223	0.123	1.4	284	13106
		29-Jun-22	12	1129	1.4	2344	98	0.093	0.733	33	14459
			6.4	543	0.794	1937	77	0.056	0.549	18	13396
			13	857	1.1	1758	104	0.056	0.687	34	12611
			7.6	819	1.1	2590	104	0.084	0.458	24	14367
			9.7	548	0.761	1958	108	0.056	0.733	22	15239
		14-Sep-22	11	868	1.5	1670	94	0.06	0.577	34	11750
			9.2	808	1.5	2138	109	0.069	0.487	34	11690
			7	657	1.1	1902	126	0.069	0.365	27	11069
			4.7	417	0.835	1838	80	0.047	0.557	20	9687
			6.3	659	1.2	2279	135	0.053	0.609	28	11866
	15-Sep-22	7.5	447	0.816	1554	66	0.102	0.412	18	10309	
		24	1468	1.7	1926	91	0.088	0.595	61	14686	
		5.6	406	0.927	2051	63	0.084	0.458	19	12441	
		3.6	195	0.552	1561	33	0.065	0.275	8.9	11281	
		2.9	225	1.1	1243	27	<0.034	0.321	7	11172	
	RG_FRCP1SW	19-Sep-22	2.5	120	0.602	1204	41	<0.033	0.163	7.1	7413
			5.1	246	1.1	1759	89	0.049	0.3	11	10633
			10	192	0.988	1695	56	0.044	0.225	18	7963
			5.9	286	0.915	1400	75	0.055	0.35	12	7291
			5.8	276	0.934	1844	47	<0.033	0.25	13	13244
	RG_FRSch2	19-Jan-22	3.2	340	0.956	1179	46	0.032	0.274	5.9	7844
			54	1512	1.4	2041	53	0.035	0.39	92	10935
			7.6	573	1.2	1971	63	0.038	0.463	16	9700
			3.1	233	0.744	1447	32	0.04	0.429	7.6	11158
			55	3773	3.5	1758	104	0.061	0.763	115	10048
		16-Feb-22	28	1003	1.2	1912	54	0.036	0.858	72	10458
			79	3915	2.7	2334	76	0.06	1.1	171	12379
			233	8232	5.5	2726	201	0.072	0.74	473	13370
			67	2352	1.5	2149	69	0.03	0.335	150	8508
			93	3786	3.1	2509	86	0.06	1.2	238	11296
16-Mar-22		22	1449	1.3	2049	79	0.029	0.661	39	11751	
		33	1524	1.7	1798	163	0.038	0.452	43	12732	
		41	1859	1.8	1718	76	0.05	0.61	64	10498	
		30	1740	2.5	1809	73	0.038	0.475	52	11657	
		17	1096	2.2	1973	67	0.034	0.548	25	12763	

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Phosphorus	Silver	Selenium	Sodium	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	RG_FOBSC	8-Dec-22	10835	0.041	5.4	3499	2.1	0.019	0.225	8.8	0.028	0.325	125
			13212	0.048	7.2	4409	2.3	0.018	0.248	9	0.053	0.269	183
			14865	0.066	7.8	4934	4.2	0.023	0.474	21	0.058	0.591	180
			12579	0.057	7	4652	3.2	0.021	0.371	20	0.045	0.642	268
			10477	0.047	6.4	3155	2.8	0.021	0.328	27	0.056	0.759	140
	RG_FOBBCP	15-Mar-22	13688	0.305	9.1	3965	22	0.197	0.927	526	0.305	14	442
			15109	0.154	8.3	6092	17	0.183	0.727	608	0.299	12	412
			11930	0.116	9.6	4449	13	0.128	1.5	440	0.23	9.7	353
			13954	0.127	11	4598	8.9	0.084	0.523	196	0.136	5.3	319
			12800	0.139	11	3811	23	0.192	1.3	685	0.327	20	534
		29-Jun-22	16809	0.178	8.2	3937	6.9	0.075	1.1	99	0.086	3.9	577
			14194	0.108	8.7	2852	5.1	0.053	0.407	79	0.086	1.7	544
			13502	0.13	6.8	3957	5.4	0.061	0.821	93	0.086	2.7	537
			15029	0.184	7.1	4570	4.6	0.094	0.643	118	0.094	2.9	683
			14055	0.13	8.2	3763	4.5	0.051	1.1	58	0.068	1.8	386
		14-Sep-22	12778	0.094	9.8	3661	6.7	0.05	0.941	95	0.114	2.3	463
			13060	0.082	12	3709	6	0.072	0.816	119	0.14	2.7	398
			13406	0.08	9.5	3591	4.2	0.078	0.606	69	0.071	1.8	456
			14397	0.06	8.8	3192	3.8	0.051	0.596	36	0.065	0.801	462
			14556	0.084	12	3313	5.2	0.066	0.596	74	0.108	1.9	426
	15-Sep-22	11187	0.119	4.6	3285	2.5	0.067	0.314	46	0.046	1.3	494	
		12942	0.173	8.5	3596	5.8	<0.001	0.578	112	<0.001	5.7	252	
		14678	0.14	6	3812	4	0.07	0.422	42	0.08	1.1	432	
		13031	0.13	4.9	3660	2.7	0.035	0.192	11	0.03	0.476	283	
		12977	0.086	5.7	3733	1.9	0.02	0.362	15	0.028	0.553	163	
	RG_FRCP1SW	19-Sep-22	9897	0.038	7	2921	1.6	0.021	0.226	8.2	0.025	0.34	190
			13609	0.108	9.3	3564	3.2	0.023	0.191	21	0.03	0.725	291
			10805	0.078	9	2705	3.2	0.021	0.401	36	0.042	1.2	272
			10467	0.078	8.6	2308	2.7	0.022	0.294	24	0.042	0.769	339
			14011	0.078	9	3969	2.8	0.024	0.317	20	0.035	0.85	271
	RG_FRSCH2	19-Jan-22	7348	0.061	3.9	3331	2.7	0.02	0.306	54	0.085	1.4	210
			12366	0.118	4.3	4122	5.6	0.031	0.449	126	0.118	3.9	279
			12582	0.107	4.3	3615	4.3	0.027	0.571	66	0.118	1.6	224
			10017	0.106	3.5	4042	1.9	0.023	0.17	17	0.134	0.587	213
			7938	0.129	4.9	2959	14	0.13	0.595	872	0.348	21	290
		16-Feb-22	11384	0.148	5.4	4343	5	0.032	0.784	57	0.325	2.5	251
			11354	0.123	4.7	2927	12	0.101	0.764	589	0.416	16	297
			10997	0.149	5.4	3598	14	0.143	1.1	1010	0.501	21	356
			14140	0.164	4.1	3837	9.1	0.032	0.404	162	0.124	5.4	231
			16646	0.186	5.1	4575	15	0.087	0.96	354	0.45	12	359
16-Mar-22		15238	0.124	5.5	5111	8.9	0.035	0.957	135	0.182	4.1	223	
		12702	0.082	6.5	5238	7.4	0.049	0.273	176	0.228	6.2	234	
		10054	0.132	5.3	3731	9.2	0.059	0.489	281	0.208	8.6	321	
		12342	0.1	5.5	4968	9.2	0.054	0.643	273	0.271	7.4	206	
		14532	0.084	5.1	4310	8.7	0.06	0.339	209	0.278	5.5	217	

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-taxa Benthic Invertebrate Tissue Chemistry, FRO LAEMP, 2022

Area	Date	Moisture	Dry Mass	Wet Mass	Aluminum	Arsenic	Antimony	Barium	Boron	Calcium	Cadmium	Copper	Cobalt	
	Units	%	g dw	g ww	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	RG_FRSCH2	28-Jun-22	75.8	0.213	0.8786	251	0.526	0.036	15	0.628	1874	5	15	3.2
			76.8	0.1668	0.7201	2370	1.1	0.095	58	3.3	3403	6.6	16	9.7
			76.7	0.1559	0.6684	631	0.657	0.062	41	1.4	3128	5.6	20	4.2
			74.5	0.1411	0.5541	1469	1.2	0.06	35	2	2639	9.6	23	18
			74	0.1641	0.6311	917	0.963	0.057	48	2	2904	7.2	21	9.3
	14-Sep-22	79.2	0.1333	0.64	866	0.63	0.056	35	1.7	2640	1.6	16	1.4	
		78.7	0.1884	0.88	1813	0.801	0.079	48	2.7	2935	1.2	20	1.6	
		77.7	0.1335	0.5985	916	0.63	0.05	29	1.5	2689	2.1	18	1.7	
		80.9	0.2048	1.0724	1066	0.71	0.048	31	2.4	3083	1.5	17	1.7	
		76.2	0.2843	1.20	244	0.57	0.034	12	0.98	2682	0.90	15.5	1.21	
	7-Dec-22	77.5	0.2236	0.9933	138	0.611	0.03	7.8	0.668	1937	1.5	8.7	0.34	
		78.1	0.2755	1.2597	256	0.815	0.046	15	1.4	3399	2.3	19	0.668	
		79	0.257	1.2221	442	0.815	0.052	16	1.4	2738	1.2	13	0.522	
		77.4	0.1726	0.7622	1148	1.2	0.086	34	3.2	4332	1.8	20	1.2	
		79.3	0.1616	0.7811	434	0.815	0.051	21	1.7	3101	3.5	17	0.924	
	RG_FRUPO	20-Jan-22	72.1	0.1333	0.4773	586	<0.56	0.04	27	0.886	1556	0.59	13	0.773
			78.4	0.1281	0.5933	1071	0.719	0.055	42	2.1	3041	4.4	16	1.9
			77.6	0.0906	0.4051	928	0.884	0.051	30	2.3	3253	6.9	17	2.9
			72.8	0.1097	0.4035	240	<0.56	0.027	20	0.687	2239	0.611	9.2	0.455
			72.5	0.136	0.4948	446	<0.56	0.03	35	1.2	3235	2.6	16	0.584
		17-Feb-22	76.1	0.0932	0.3896	648	0.663	0.045	36	1.2	2456	3.5	18	1.6
			76.6	0.1236	0.5283	1202	0.616	0.09	37	2	5793	1.1	11	1.1
			79.8	0.1322	0.655	2337	0.977	0.158	63	3.7	4479	1.3	15	1.2
			80	0.0531	0.265	1682	0.711	0.162	46	3.5	5944	1.5	15	0.846
			73.5	0.0415	0.1566	1635	0.84	0.095	55	3.2	5168	3.1	20	1.5
		15-Mar-22	79.8	0.0856	0.4244	739	<0.49	0.066	59	1.3	4053	1.4	17	1.1
			77.4	0.171	0.757	937	0.571	0.056	52	1.6	2450	1.6	14	0.53
			78.2	0.0626	0.2873	692	<0.49	0.05	84	1.2	3341	0.807	16	0.977
			76.4	0.1232	0.5225	1579	<0.49	0.057	57	2.1	3747	2.5	9.4	1.4
			81.9	0.1996	1.1026	2213	<0.49	0.078	53	2.9	2640	1.2	8.5	1.7
	29-Jun-22	71	0.4234	1.46	1033	0.727	0.042	38	1.5	4058	2	22	3.4	
		78.9	0.1208	0.5731	1678	1.2	0.043	40	2.3	3484	13	22	9.4	
		75.7	0.1365	0.5614	1326	0.935	0.04	43	1.7	3774	10	22	9.8	
		75.2	0.1569	0.6322	456	0.571	0.018	15	0.693	3337	5.4	14	4	
		79.2	0.1432	0.6875	1025	1	0.033	24	1.3	3155	14	25	9.1	
	18-Sep-22	73.5	0.3248	1.2276	175	<0.388	0.018	12	0.445	1518	0.628	12	0.281	
83.2		0.14	0.8343	213	<0.388	0.023	14	0.78	3051	1.4	15	0.422		
81.10		0.1467	0.78	489	0.463	0.026	21	1.5	2792	1	13	0.366		
79.4		0.2223	1.08	180	<0.388	0.018	14	0.538	2232	1.5	16	0.344		
82.5		0.1371	0.78	168	<0.388	0.018	19	0.557	2630	1.7	15	0.503		
7-Dec-22	73.7	0.2104	0.801	361	0.581	0.037	24	1.4	3194	1.3	13	0.325		
	78.1	0.3919	1.7878	758	0.991	0.082	51	2.6	4195	1.4	12	0.529		
	75.6	0.2327	0.9548	186	0.431	0.021	14	0.951	2257	0.466	7.9	0.217		
	76	0.2349	0.9793	305	0.474	0.033	17	1.1	2588	0.991	13	0.267		
	77.4	0.2245	0.9953	155	<0.395	0.021	18	0.429	2371	0.991	10	0.223		

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Chromium	Iron	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	RG_FRSCH2	28-Jun-22	3.2	231	0.761	1974	189	0.036	0.87	11	11870
			8.9	971	1.2	1864	237	0.058	0.715	23	10789
			3.4	376	0.748	1891	220	0.058	0.777	17	13048
			5.2	713	1.1	1980	137	0.036	0.497	27	12087
			4.9	618	0.969	1823	148	0.051	0.621	24	12169
	14-Sep-22	8	549	1.6	1291	81	0.043	0.535	17	9465	
		15	1110	2.9	1734	69	0.059	0.513	27	10227	
		7.2	542	1.2	1616	46	0.043	0.29	16	10301	
		4.2	531	2	1887	89	0.043	0.357	12	10280	
	7-Dec-22	4.0	205	0.70	1362	31	0.032	0.368	8.4	5335	
		3.6	104	0.473	1112	16	<0.03	0.139	3.6	6049	
		4.6	235	1.1	1920	45	0.034	0.278	6.4	12370	
		7.2	275	1	1504	32	<0.03	0.244	8.8	10087	
		29	919	1.3	2076	42	0.034	0.452	38	12066	
	RG_FRUPO	20-Jan-22	10	378	0.935	1740	57	0.04	0.348	10	9812
			5.5	336	1.1	1032	62	0.03	0.513	7.7	9878
			5.1	563	1.5	1599	36	0.075	0.27	8.3	9152
			5.7	434	1.4	1877	29	0.048	0.327	8	10492
			4.9	260	0.667	1290	45	0.028	0.336	5.1	7827
		17-Feb-22	5.2	323	0.665	1636	50	0.037	0.311	7.5	9302
			10	434	1	1505	37	0.06	0.379	19	13030
			15	741	1.3	1756	29	0.05	0.327	28	11087
			12	1080	2.9	2062	44	0.046	0.559	26	11581
			20	999	1.5	1741	33	0.049	0.681	45	9531
		15-Mar-22	19	920	1.8	2227	37	0.059	0.572	42	14345
			17	608	1.3	1779	54	0.039	0.331	26	11763
			9.5	595	0.841	1190	48	0.03	0.306	18	8783
			14	530	0.766	1708	94	0.033	0.213	26	5927
			11	594	1	1441	40	0.028	0.178	18	5881
		29-Jun-22	24	1118	1.4	1087	41	0.025	0.222	36	5982
			7.8	571	1.4	1593	112	0.046	0.778	19	13455
			11	871	1.2	1750	79	0.065	0.687	28	12124
			10	759	1	1707	90	0.065	0.549	23	12660
			4.8	276	0.712	1209	35	<0.034	0.366	11	8860
		18-Sep-22	6.8	551	0.965	1740	61	0.065	0.504	22	12359
			2.6	160	0.64	1078	21	<0.033	0.253	2.3	9279
4.6			219	0.939	1624	22	<0.033	0.168	5.5	8849	
5.2			322	0.881	1493	20	0.043	0.168	6.2	8303	
4.3			197	0.756	1426	37	<0.033	0.309	4.5	8086	
7-Dec-22		4	170	0.809	1618	28	0.036	0.168	3.8	9088	
		4.9	247	0.603	1417	28	0.031	0.198	3.8	8071	
		5.6	587	0.963	1621	29	0.031	0.257	6.2	9294	
		3.6	131	0.413	1051	15	<0.03	0.119	2.7	6545	
		5	231	0.575	1348	19	<0.03	0.119	3.9	9279	
3.3	115	0.558	1323	31	0.031	0.119	2.7	8181			

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Phosphorus	Silver	Selenium	Sodium	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	RG_FRSCH2	28-Jun-22	11879	0.084	7.7	2942	2.3	0.031	0.287	16	0.04	0.499	324
			9257	0.084	6.2	2613	5.9	0.063	0.154	215	0.137	4.3	461
			10529	0.126	8.3	2785	3.7	0.038	0.448	45	0.134	1.2	400
			12070	0.134	7	3333	3.9	0.068	0.223	109	0.101	2.8	622
			13494	0.076	7.9	3797	5.1	0.054	0.173	77	0.114	1.8	467
	14-Sep-22	10139	0.087	8.9	3352	3.6	0.029	0.427	57	0.171	1.8	186	
		11789	0.093	7.6	4126	5.9	0.041	0.48	198	0.126	4.10	174	
		11946	0.11	7.4	3462	4.1	0.032	0.292	65	0.091	1.6	209	
		12555	0.108	8.9	4932	4.1	0.034	0.327	69	0.094	1.9	162	
		10139	0.154	7.1	2558	2.7	0.017	0.288	19	0.03	0.55	197	
	7-Dec-22	9181	0.061	3.6	2340	1.9	0.012	0.172	8.7	0.052	0.367	150	
		15298	0.142	6.3	5004	3.3	0.021	0.295	17	0.116	0.688	312	
		11981	0.085	5.2	3748	3.2	0.019	0.301	26	0.092	0.922	160	
		14724	0.104	6.4	4478	6.7	0.037	0.315	27	0.155	2.2	200	
		12369	0.104	6.4	4160	2.5	0.022	0.354	28	0.121	0.968	251	
	RG_FRUPO	20-Jan-22	10472	0.068	6.8	3192	2	0.01	0.121	40	0.063	0.893	121
			10330	0.068	7.1	3472	3.9	0.02	0.252	68	0.118	1.7	210
			11733	0.099	6.5	3575	3.8	0.016	0.475	59	0.1	1.4	226
			10133	0.05	5.3	2589	2.3	0.008	0.069	13	0.044	0.571	163
			10310	0.068	7.7	3205	3.6	0.011	0.111	24	0.093	0.806	227
		17-Feb-22	12136	0.089	5.9	4030	3.2	0.014	0.653	34	0.105	1.4	202
			13145	0.096	3.7	4183	6.1	0.034	0.34	108	0.146	3.1	187
			13418	0.085	6.9	7986	6.2	0.058	0.768	163	0.26	4.7	150
			11303	0.088	4.9	2906	7	0.044	0.566	116	0.192	3.4	175
			15148	0.133	7.7	4828	7.6	0.031	0.858	116	0.188	3.7	263
		15-Mar-22	13803	0.108	7.6	4890	4.6	0.019	0.828	51	0.11	1.5	162
			9767	0.081	6.3	3185	3.2	0.017	0.444	62	0.106	1.7	171
			11155	0.112	6.5	2480	5.8	0.017	0.536	53	0.069	1.5	141
			9429	0.071	6	2640	4.7	0.027	0.437	63	0.134	2.7	164
			6918	0.042	4	4251	4.2	0.03	0.435	163	0.128	3.3	92
		29-Jun-22	13690	0.13	7.3	4164	5.3	0.035	0.186	73	0.067	2.3	224
			11427	0.097	7.5	3174	5.2	0.058	0.91	124	0.112	3.3	561
			13170	0.162	6.8	3648	5.5	0.059	0.556	144	0.075	2.6	543
			9847	0.076	4	2805	3.2	0.024	0.363	44	0.026	0.902	297
			13141	0.146	6.8	4065	3.6	0.061	0.873	85	0.107	1.9	589
		18-Sep-22	12299	0.063	7.1	3126	1.9	0.008	0.244	17	0.028	0.524	146
13552			0.063	6.9	2781	2.9	0.009	0.561	14	0.057	0.58	151	
12910			0.063	6.9	2356	2.9	0.012	0.284	33	0.052	1.3	133	
12011			0.082	7.7	2447	2.7	0.008	0.172	6.1	0.039	0.441	132	
11723			0.076	8.9	2801	3.1	0.007	0.368	10	0.047	0.397	219	
7-Dec-22		10542	0.067	5.7	2807	3.4	0.012	0.191	27	0.085	0.796	178	
		9745	0.067	4.8	4003	5.1	0.026	0.2	104	0.157	2.5	101	
		8403	0.025	3.7	2290	2.3	0.006	0.155	12	0.043	0.42	102	
		11352	0.067	5.5	3454	3	0.009	0.219	21	0.064	0.665	141	
		10731	0.05	4.3	3129	3.6	0.008	0.239	9.1	0.043	0.349	182	

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-taxa Benthic Invertebrate Tissue Chemistry, FRO LAEMP, 2022

Area	Date	Moisture	Dry Mass	Wet Mass	Aluminum	Arsenic	Antimony	Barium	Boron	Calcium	Cadmium	Copper	Cobalt	
	Units	%	g dw	g ww	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	RG_FODPO	19-Jan-22	73.5	0.081	0.3061	304	<0.56	0.021	15	0.443	1956	0.328	14	0.792
			76	0.0259	0.1081	3506	1.3	0.126	138	4.1	5573	1.2	13	3.8
			74.7	0.0812	0.3209	1496	<0.56	0.048	43	2	3691	1.5	16	3.5
			74.3	0.1064	0.4138	1999	<0.56	0.059	46	2.1	4214	1.1	21	3.4
			76.2	0.047	0.1972	2001	0.671	0.057	39	3.2	3734	0.96	16	1.8
	RG_FODPO	16-Feb-22	78	0.1296	0.588	2986	0.814	0.097	52	4.2	2875	0.85	16	2.8
			80.9	0.1054	0.5518	1644	0.695	0.094	45	2.8	4057	0.825	16	2.2
			77.1	0.1347	0.5893	1150	0.506	0.077	41	2.1	5525	0.458	15	1.5
			78.9	0.0724	0.3431	3062	0.735	0.153	67	3.7	4792	0.692	17	1.6
			78.4	0.1227	0.567	1909	0.596	0.13	60	2.9	2705	1.1	15	3.8
		16-Mar-22	74.1	0.1853	0.7163	4933	0.977	0.159	93	6.9	4199	0.766	16	4.5
			78.8	0.0953	0.4492	5210	1.1	0.145	111	9.1	13402	3	23	6
			77.3	0.1055	0.4653	908	0.882	0.054	32	2.8	5899	1	16	1.2
			72.2	0.1423	0.5118	3085	0.873	0.137	69	6.5	5463	1.1	17	3.5
		28-Jun-22	76.2	0.2407	1.013	5088	1	0.17	121	6	5023	0.616	18	1.4
			76	0.1419	0.5921	662	0.883	0.042	40	1.9	3560	7.3	19	6.9
			76.9	0.1789	0.7755	467	0.642	0.074	43	1.2	2352	2.1	20	5.4
			76.3	0.1095	0.4628	1738	1.3	0.119	84	2.5	3287	3.2	18	3.7
			74	0.1804	0.694	2463	1.8	0.142	96	3.1	2997	4.7	21	4.6
		18-Sep-22	73.5	0.1261	0.4757	3982	2.2	0.144	92	4.5	3866	6.8	16	6.1
	75.9		0.2113	0.8767	3816	0.941	0.119	77	4.5	2528	2.5	17	2.2	
	76.4		0.0698	0.2952	1482	0.61	0.068	66	2.4	2830	2.5	18	2.4	
	71.2		0.1186	0.4112	1783	0.453	0.1	64	2.2	1840	0.915	10	1.5	
	83.9		0.1189	0.7367	8570	1.4	0.196	122	2.4	4139	1.7	15	3.1	
	7-Dec-22	79.7	0.1643	0.8095	2143	0.941	0.111	51	3.8	2925	1.2	14	1.2	
		75.6	0.4044	1.6597	456	0.407	0.038	18	1.1	3613	0.981	18	0.944	
		75.5	0.2384	0.9744	287	0.407	0.029	16	0.678	2514	0.545	13	0.393	
		78.1	0.1792	0.8191	1580	0.75	0.064	34	3	4711	1.4	21	1.2	
	RG_FO22	20-Jan-22	76	0.231	0.9643	335	<0.395	0.054	12	0.7	2697	1	16	0.684
			80.3	0.2286	1.1612	437	0.717	0.038	16	2.5	3495	0.872	12	0.797
			74.6	0.1369	0.5393	1219	<0.56	0.051	56	1.3	3758	0.518	17	0.862
			77.3	0.0303	0.1334	2125	0.699	0.072	60	2.4	3867	0.673	17	0.701
			75.5	0.1038	0.424	2210	0.801	0.072	84	2.6	3961	0.833	17	1.9
		18-Feb-22	79.8	0.0558	0.2759	716	<0.56	0.027	23	0.952	2265	0.342	12	0.493
			72.1	0.0707	0.2536	2003	0.647	0.07	58	2.3	4468	0.621	27	2.2
			62.7	0.0402	0.1078	6429	1.3	0.214	125	6.9	5274	0.797	22	3.7
			76.7	0.1198	0.5141	3951	2	0.164	116	6.4	4762	0.727	14	3.7
			77.6	0.0663	0.2957	2627	1.1	0.168	91	3.7	5172	0.803	15	1.1
		17-Mar-22	69.7	0.0545	0.1797	6772	0.986	0.145	109	6.9	6385	0.493	14	6.2
			81.5	0.02	0.1083	1478	0.932	0.113	47	2.1	4680	1.1	20	2.1
83.4			0.0669	0.4031	1221	<0.49	0.058	35	2.1	3649	3	21	2.4	
69.3			0.0552	0.1797	244	<0.49	0.02	17	0.554	3886	0.925	17	0.599	
76.9			0.0912	0.394	664	0.6	0.041	56	1.2	2708	0.487	17	1.2	
75.2	0.0677	0.2725	8187	1.3	0.245	158	6.5	4263	0.868	22	2.7			
77.1	0.2068	0.9017	3531	1.1	0.165	102	5.5	6125	0.584	22	2.2			

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Chromium	Iron	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium					
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw					
Mine-Exposed	RG_FODPO	19-Jan-22	5.9	255	0.493	1627	33	0.028	0.197	9.3	7218				
			39	2298	2.5	1661	90	0.05	0.548	83	10719				
			12	711	1.6	1760	50	0.044	0.483	25	7876				
			19	933	1.4	2167	47	0.052	0.381	35	7199				
			18	950	2.2	1539	33	0.023	0.291	36	10325				
	RG_FODPO	16-Feb-22		34	1700	1.5	1983	89	0.048	0.326	87	10574			
				24	948	1.4	2162	55	0.042	0.414	53	10674			
				17	721	1.3	1683	45	0.036	0.469	36	7668			
				37	1493	2.3	1915	78	0.054	1.1	88	10043			
				30	1473	1.3	1666	92	0.048	0.247	68	7169			
		16-Mar-22			37	3183	2.6	1579	173	0.046	0.785	52	11621		
					36	2434	3	2187	98	0.065	0.452	59	11328		
					19	616	1.2	2000	40	0.037	0.356	34	11521		
					77	1969	1.8	2376	75	0.042	0.63	107	9630		
		28-Jun-22			39	2817	2.8	1960	99	0.042	0.795	64	9263		
					5.4	467	0.927	2153	194	0.056	1	24	13619		
					5.2	506	1.1	2828	383	<0.034	1.9	23	18092		
					20	1022	2.1	2776	318	0.044	1.4	49	20612		
					24	1434	1.7	2508	387	0.062	2.1	58	16646		
					80	3201	2.3	2030	211	0.07	1.2	118	14405		
	18-Sep-22						16	1458	2	1508	82	0.047	0.596	31	9656
							15	854	0.974	1897	133	0.034	0.477	31	12591
							12	662	0.752	1215	76	<0.033	0.226	19	8141
							16	2159	1	2145	93	0.069	0.728	54	13737
		11	976	1.7			1529	57	<0.033	0.439	22	9082			
	7-Dec-22			7.5	326	0.799	1821	41	0.039	0.24	11	9406			
				5.7	186	0.593	1526	36	<0.03	0.21	7	8361			
				12	856	1.5	2408	41	0.034	0.33	19	12319			
				5.2	212	0.636	1337	21	<0.03	0.21	5.3	7212			
				7.3	333	0.807	1396	34	<0.03	0.24	9.7	8006			
	RG_FO22	20-Jan-22			14	1897	0.982	1708	87	0.042	0.292	19	8271		
					27	2294	1.6	1724	51	0.043	0.584	40	11023		
					28	3535	1.3	1799	123	0.045	0.442	37	8662		
					6.7	818	0.761	1197	39	0.042	0.203	11	7977		
					43	2683	1.5	2010	57	0.04	0.424	61	13033		
		18-Feb-22				60	4764	2.9	2148	89	0.067	0.796	106	11876	
						54	3511	3	2053	137	0.06	0.662	98	12269	
						19	2988	1.7	1625	136	0.045	0.729	40	7833	
						105	5343	3.3	1617	108	0.062	0.476	169	9743	
						33	2168	2.1	2258	70	0.084	0.606	60	12940	
17-Mar-22					46	1623	4.8	2445	98	0.075	0.651	96	13425		
					13	426	0.588	1612	19	0.037	0.219	19	9503		
					20	1962	0.753	1991	148	0.033	0.301	34	8530		
					173	6517	2.3	1797	163	0.061	1.8	208	9945		
					37	2726	2.4	2164	103	0.103	0.658	62	8556		

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Phosphorus	Silver	Selenium	Sodium	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	RG_FODPO	19-Jan-22	9135	0.053	3.6	2950	3.5	0.01	0.144	17	0.028	0.639	152
			10387	0.08	4.4	4031	8.9	0.059	1.1	284	0.261	7.1	171
			9588	0.078	4.1	3281	7.6	0.029	0.343	113	0.102	2.4	200
			9767	0.092	4.5	2708	6.9	0.026	0.352	124	0.091	3.2	220
			10087	0.092	3.5	3583	4.7	0.032	0.754	151	0.098	3.1	118
	RG_FODPO	16-Feb-22	11607	0.085	6.7	3353	7.4	0.039	0.749	199	0.146	6.5	212
			12758	0.11	6.3	3561	7.2	0.04	1.2	108	0.166	3.8	262
			12200	0.1	4.1	2968	7.6	0.029	0.456	81	0.148	2.6	229
			11074	0.105	5.6	3532	9	0.043	0.817	242	0.21	5.1	184
			9008	0.079	5.3	2704	6.4	0.042	0.489	150	0.175	4.1	238
		16-Mar-22	12700	0.093	7.8	3949	9.9	0.081	0.494	326	0.269	9.5	154
			12776	0.127	7.2	4141	16	0.059	0.724	300	0.337	8	331
			12199	0.096	4.8	3864	6.6	0.018	0.554	64	0.105	1.6	251
			9783	0.103	5.6	2833	8.6	0.049	0.621	245	0.209	6	227
			9016	0.103	6.7	2965	14	0.058	0.582	494	0.344	8.7	200
		28-Jun-22	11600	0.097	9.2	2800	5.6	0.038	0.346	38	0.116	1.3	335
			11832	0.14	12	3292	3.8	0.07	0.241	38	0.111	0.985	339
			14514	0.14	14	4145	7.9	0.154	0.498	176	0.144	3.6	275
			11738	0.151	17	3031	7.5	0.149	0.307	305	0.266	4.6	326
			10767	0.13	22	3005	10	0.185	0.875	368	0.19	8.4	245
	18-Sep-22	9814	0.1	7.4	3825	6.7	0.084	0.347	271	0.184	6.5	202	
		14112	0.092	9.2	3442	4.6	0.045	0.52	116	0.116	2.8	309	
		9319	0.065	5.2	2275	6.8	0.046	0.292	175	0.094	2.9	132	
		9016	0.141	7.1	12232	9.8	0.111	0.448	578	0.29	13	107	
		10367	0.073	6.7	4172	5.2	0.05	0.614	176	0.113	3.5	150	
	7-Dec-22	14223	0.134	5.2	4416	4.3	0.021	0.324	27	0.047	0.871	264	
		12856	0.055	4.6	3563	3.4	0.017	0.186	17	0.039	0.499	146	
		15656	0.12	5.3	5136	6.6	0.053	0.388	108	0.107	2.7	282	
		11443	0.082	4	3183	3	0.019	0.246	23	0.034	0.657	175	
	RG_FO22	20-Jan-22	10972	0.055	3.6	3558	4.1	0.027	0.22	30	0.052	1.1	148
			10295	0.086	7.7	2875	5.2	0.019	0.338	80	0.088	2.7	182
			12219	0.103	7.6	4463	5.8	0.027	0.838	175	0.132	4	172
			10653	0.072	7.9	3281	7.2	0.031	0.351	140	0.139	4.5	178
			8759	0.072	5.2	2375	3.4	0.011	0.308	39	0.058	1.4	176
		18-Feb-22	14327	0.145	6.6	4054	5.4	0.034	0.512	157	0.121	4.4	190
			13456	0.155	7.6	3613	15	0.085	0.531	433	0.286	15	179
			9912	0.137	6.3	5574	9.7	0.094	0.354	284	0.312	9.8	131
			9001	0.091	6.9	2695	7.5	0.061	0.509	183	0.286	6.4	131
			9261	0.109	5.3	2902	9.9	0.079	0.738	489	0.241	15	146
		17-Mar-22	15084	0.153	8.5	4611	6.1	0.044	0.877	87	0.229	3.6	268
			13923	0.137	10	12473	5.3	0.021	0.461	83	0.103	2.9	204
			11138	0.11	6.2	3402	4.5	0.007	0.351	13	0.03	0.571	263
			9518	0.096	9.6	2930	5.9	0.014	0.446	41	0.095	2.3	209
			8065	0.131	8.5	2585	16	0.056	1	445	0.262	13	203
	9470	0.125	10	4150	9.2	0.057	0.452	310	0.346	7.2	198		

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-taxa Benthic Invertebrate Tissue Chemistry, FRO LAEMP, 2022

Area	Date	Moisture	Dry Mass	Wet Mass	Aluminum	Arsenic	Antimony	Barium	Boron	Calcium	Cadmium	Copper	Cobalt	
	Units	%	g dw	g ww	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	9-Sep-22	74.9	0.0882	0.3517	8400	2.3	0.586	164	7.7	4305	3.2	28	3.6	
		77	0.0727	0.316	8087	1.5	0.172	152	8.5	4750	2	15	3.7	
		76.60	0.08	0.34	2922	1.1	0.091	68	3.4	3636	2.9	19	3.6	
		78.9	0.0683	0.32	2719	0.924	0.084	73	3.3	3581	2.7	22	2.8	
		79.5	0.07	0.3638	1736	0.683	0.058	38	2.1	2951	1.4	15	2.2	
	8-Nov-22	81.2	0.2657	1.4099	929	0.391	0.048	26	1.3	1708	0.346	9.4	0.36	
		80.8	0.3161	1.6424	296	0.746	0.052	16	1.2	1560	0.494	13	0.426	
		81.2	0.493	2.6222	609	0.711	0.055	21	1.4	2173	0.544	10	0.395	
		76.5	0.3591	1.529	246	0.426	0.025	15	0.871	2426	0.568	16	0.294	
		78.1	0.2455	1.12	149	<0.298	0.013	15	0.49	1471	0.346	9.8	0.142	
	8-Dec-22	73.9	0.0509	0.1948	3564	1.1	0.18	91	5.1	5566	1.1	19	1.6	
		86.8	0.0475	0.3597	2233	1.1	0.086	62	3.3	2714	0.501	14	1.2	
		75.8	0.1057	0.4362	553	0.489	0.042	30	1.5	2743	0.389	16	0.389	
		86.1	0.0105	0.0754	468	<0.395	0.032	18	0.835	1286	1.1	5.3	1	
		83	0.0084	0.0493	715	0.485	0.054	22	1.3	2322	0.227	6.7	1.2	
	RG_FO22	21-Jan-22	75.7	0.0281	0.1155	2433	0.566	0.056	123	4.5	11426	1.1	17	2.1
			73.4	0.1404	0.5274	121	<0.56	0.01	13	0.459	1366	0.279	11	0.243
			71.3	0.1223	0.4263	683	<0.56	0.04	62	1.1	4493	0.559	20	1.5
			75.5	0.1217	0.4962	498	<0.56	0.031	24	0.816	3109	0.629	19	0.623
			72	0.0552	0.197	579	<0.56	0.022	26	1.2	1852	0.668	14	0.596
		17-Feb-22	70.5	0.09	0.3046	1524	0.832	0.241	55	3.1	5263	1.5	19	1.9
			70.2	0.0927	0.3106	2683	0.778	0.121	68	2.9	6967	0.734	21	1.7
			70	0.1266	0.4222	486	<0.496	0.053	32	1.1	7247	0.759	20	0.374
			78.7	0.0734	0.3448	5958	1.2	0.197	130	6.5	9814	1.8	24	3.7
			70.3	0.0859	0.2888	1285	<0.496	0.065	50	1.7	7858	0.917	19	0.772
		17-Mar-22	75.4	0.1157	0.47	531	<0.49	0.039	28	1.1	3032	1.5	18	0.929
			71.3	0.2128	0.7404	306	<0.49	0.026	19	0.775	3009	1.6	15	0.877
			79.5	0.0562	0.2745	254	<0.49	0.03	32	0.553	2162	0.554	14	0.3
			73.2	0.0962	0.3588	993	<0.49	0.048	74	1.8	8749	0.784	19	1.8
			74.8	0.1446	0.5738	1187	<0.49	0.048	87	1.8	12133	0.87	17	2.4
	10-Sep-22	76.7	0.1831	0.785	2166	1.4	0.117	99	3.3	3274	2.4	19	1.7	
		76.10	0.1173	0.49	2776	0.877	0.106	91	3.8	3411	2.5	15	2.2	
		77.4	0.1236	0.5472	674	0.497	0.04	27	0.942	1569	2.4	13	0.882	
		79.60	0.1057	0.52	959	0.891	0.041	48	2.3	3964	3.8	16	1.5	
		77.9	0.07	0.31	844	0.73	0.054	49	1.7	5306	4	20	1.6	
	6-Dec-22	78	0.1571	0.7134	157	<0.395	0.013	17	0.736	2197	0.816	12	0.197	
74.6		0.2981	1.1754	135	<0.395	0.017	20	0.552	1498	0.699	13	0.376		
75.8		0.2145	0.8851	373	0.517	0.033	30	1.3	4660	0.991	17	0.318		
79		0.1886	0.8976	306	<0.395	0.022	19	0.798	2964	0.932	12	0.471		
76.1		0.265	1.1088	267	<0.395	0.022	31	0.92	2541	0.757	16	0.42		

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Chromium	Iron	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	RG_FO22	9-Sep-22	66	4279	5.5	2219	124	0.124	2	114	13568
			36	3416	5	2056	116	0.057	0.617	67	12094
			23	2991	1.9	1784	172	<0.033	0.538	42	13070
			27	1698	2.4	2109	81	0.046	0.68	47	13655
			34	1289	1.2	1616	54	<0.033	0.364	53	11404
		8-Nov-22	4.4	787	1	1141	46	0.025	0.261	5.8	7883
			3.5	459	0.976	1449	56	0.025	0.319	9.2	11797
			3	529	1.6	1428	55	<0.021	0.261	7.3	11167
			3.2	385	0.545	1559	38	<0.021	0.203	5.2	8688
			2.8	342	0.307	974	41	<0.021	0.087	2.8	6796
		8-Dec-22	70	3558	2.3	2097	106	0.054	1	106	9500
			13	1619	3.7	1482	80	0.047	0.348	19	12960
			13	1153	0.814	1673	48	<0.03	0.278	16	10318
			11	541	0.341	454	36	<0.03	0.104	12	1957
			27	928	0.645	795	31	<0.03	0.309	26	4633
	RG_FOU EW	21-Jan-22	30	1865	1.3	1898	183	0.058	0.513	49	8876
			3	163	0.412	1136	79	0.027	0.165	3.4	7675
			9.3	784	1.4	1453	283	0.035	0.651	16	9703
			8.4	511	0.745	1633	86	0.047	0.301	12	11028
			6.9	427	0.664	1393	66	0.035	0.233	9.5	8657
		17-Feb-22	14	924	1.5	2088	138	0.074	0.368	27	11833
			19	1560	2.2	2144	146	0.06	0.457	37	12050
			6.4	472	1.1	2377	73	0.06	0.379	13	11999
			35	3028	2.9	2415	225	0.084	0.669	71	12439
			13	907	1.3	2305	186	0.079	0.431	20	12208
		17-Mar-22	12	550	0.93	1729	79	0.036	0.235	19	11134
			6.6	394	0.546	1375	117	0.036	0.142	13	7065
			4	326	0.492	1535	151	0.036	0.208	5.5	7358
			16	869	1	1808	294	0.054	0.383	30	10188
			23	1056	1.1	1990	353	0.049	0.367	40	10420
		10-Sep-22	12	1342	1.5	1841	90	0.069	0.752	18	12675
			17	1901	1.3	1770	135	0.069	0.537	32	10776
			5.2	434	0.774	1183	64	0.058	0.403	8.5	9362
			6.4	612	1.3	1872	89	0.05	0.564	14	13405
			4.7	547	1.2	1770	85	0.08	0.51	14	11542
		6-Dec-22	4	188	0.609	1602	50	0.031	0.119	2.8	7652
3.2			243	0.603	1094	123	0.031	0.237	2.9	7846	
4.8			397	0.715	1807	60	<0.03	0.237	4.2	11887	
5.1			287	0.625	1331	87	<0.03	0.158	4.2	7717	
3.9	315		0.776	1244	125	0.039	0.356	3.6	7271		

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.4: Composite-tax

Area	Date	Phosphorus	Silver	Selenium	Sodium	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	
Mine-Exposed	9-Sep-22	10969	0.241	13	4827	14	0.111	0.982	666	0.581	18	194	
		10386	0.144	8.7	4850	11	0.105	0.62	621	0.281	14	173	
		13823	0.112	11	3798	6.8	0.053	0.525	211	0.147	6.2	246	
		14607	0.115	12	5656	6.2	0.049	0.635	200	0.15	5.4	237	
		13082	0.108	9.7	3646	5.2	0.03	0.502	137	0.1	3.2	171	
	8-Nov-22	9478	0.05	5.7	4144	2.8	0.016	0.134	75	0.052	1.6	86	
		11303	0.054	8.1	6601	2.1	0.015	0.173	21	0.038	0.777	89	
		10414	0.068	6.4	5730	2.7	0.016	0.273	52	0.058	1.3	97	
		12955	0.108	5.7	3067	2.9	0.009	0.334	20	0.036	0.543	151	
		7364	0.05	4.4	2429	2.3	0.007	0.159	9.6	0.022	0.386	116	
	8-Dec-22	12627	0.123	9.1	3010	13	0.104	0.683	391	0.193	9.7	172	
		11281	0.085	8.9	9715	5.8	0.068	0.407	169	0.119	5.4	123	
		12401	0.095	5.6	3830	4.2	0.031	0.357	40	0.055	1.7	166	
		2897	0.047	1.8	727	1.6	0.022	0.269	40	0.038	0.998	80	
		5868	0.034	3.5	2041	3.2	0.03	0.891	102	0.069	2.3	68	
	RG_FO22	21-Jan-22	10243	0.112	6.8	2585	11	0.046	0.765	157	0.174	4.4	178
			9777	0.057	5.5	2521	1.6	0.006	0.094	5.3	0.018	0.287	125
			11315	0.159	10	3392	4.4	0.013	0.272	43	0.068	1.4	165
			12748	0.192	6.1	3036	3.1	0.013	0.314	29	0.047	1.1	211
			9907	0.102	5.3	2573	2.9	0.012	0.265	39	0.043	1.1	217
		17-Feb-22	13969	0.202	6.4	4395	8.8	0.083	0.575	101	0.465	4.4	263
			13776	0.208	6.9	3851	8.4	0.047	0.533	209	0.249	5.7	207
			17187	0.192	6.3	4155	6.4	0.023	0.278	32	0.091	1.1	275
			13426	0.234	7.3	4316	12	0.081	0.824	326	0.467	9.8	272
			15688	0.178	6.7	4341	7.7	0.029	0.911	76	0.118	2.6	236
		17-Mar-22	13579	0.166	7.1	4517	4.7	0.031	0.593	33	0.07	1.2	228
			9379	0.086	5	3068	2.6	0.016	0.129	19	0.034	0.749	157
			10663	0.119	9.7	3015	4	0.014	0.475	16	0.049	0.56	196
			15061	0.119	7.9	4485	7.6	0.035	0.416	60	0.094	2.2	186
			15328	0.129	8.2	4517	9.7	0.042	0.329	78	0.114	2.9	182
		10-Sep-22	11625	0.168	13	3665	6.2	0.06	0.428	162	0.211	4.6	237
			13137	0.136	12	3795	7.2	0.081	0.747	247	0.174	6.4	229
			11070	0.09	9	2539	2.7	0.029	0.381	42	0.046	1.4	201
			15286	0.11	10	3474	5.7	0.041	0.649	75	0.098	1.8	242
			13858	0.155	11	3462	7	0.041	0.673	62	0.099	1.6	307
	6-Dec-22	10994	0.084	5.1	2858	2.5	0.008	0.311	9.1	0.022	0.36	183	
9877		0.063	6.1	2970	2	0.008	0.133	8.4	0.026	0.332	162		
15260		0.109	6.2	3930	4.8	0.02	0.399	19	0.053	0.872	169		
11259		0.076	5	2698	3.1	0.012	0.291	17	0.034	0.643	169		
10830		0.084	7.4	2861	3	0.011	0.201	19	0.039	0.774	145		
RG_FOU EW	21-Jan-22	10243	0.112	6.8	2585	11	0.046	0.765	157	0.174	4.4	178	
		9777	0.057	5.5	2521	1.6	0.006	0.094	5.3	0.018	0.287	125	
		11315	0.159	10	3392	4.4	0.013	0.272	43	0.068	1.4	165	
		12748	0.192	6.1	3036	3.1	0.013	0.314	29	0.047	1.1	211	
	17-Feb-22	13969	0.202	6.4	4395	8.8	0.083	0.575	101	0.465	4.4	263	
		13776	0.208	6.9	3851	8.4	0.047	0.533	209	0.249	5.7	207	
		17187	0.192	6.3	4155	6.4	0.023	0.278	32	0.091	1.1	275	
		13426	0.234	7.3	4316	12	0.081	0.824	326	0.467	9.8	272	
	17-Mar-22	15688	0.178	6.7	4341	7.7	0.029	0.911	76	0.118	2.6	236	
		13579	0.166	7.1	4517	4.7	0.031	0.593	33	0.07	1.2	228	
		9379	0.086	5	3068	2.6	0.016	0.129	19	0.034	0.749	157	
		10663	0.119	9.7	3015	4	0.014	0.475	16	0.049	0.56	196	
10-Sep-22	15061	0.119	7.9	4485	7.6	0.035	0.416	60	0.094	2.2	186		
	15328	0.129	8.2	4517	9.7	0.042	0.329	78	0.114	2.9	182		
	11625	0.168	13	3665	6.2	0.06	0.428	162	0.211	4.6	237		
	13137	0.136	12	3795	7.2	0.081	0.747	247	0.174	6.4	229		
6-Dec-22	11070	0.09	9	2539	2.7	0.029	0.381	42	0.046	1.4	201		
	15286	0.11	10	3474	5.7	0.041	0.649	75	0.098	1.8	242		
	13858	0.155	11	3462	7	0.041	0.673	62	0.099	1.6	307		
	10994	0.084	5.1	2858	2.5	0.008	0.311	9.1	0.022	0.36	183		

Note: dw = dry weight. Samples were collected in January, February, and March as part of the FRO-S AWTF commissioning sampling plan.

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID	
Reference	RG_HENUP	12-Sep-22	Planariidae	3	30	0.0131	0.131	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Hydrobatidae	1	10	0.0003	0.003	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Ostracoda	6	60	0.0013	0.013	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Elmidae	2	20	0.0017	0.017	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Baetidae	3	30	0.0495	0.495	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Ephemerellidae	17	170	0.0173	0.173	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Heptageniidae	242	2420	0.2106	2.106	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Capniidae	2	20	0.0036	0.036	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Chloroperlidae	18	180	0.0451	0.451	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Leuctridae	9	90	0.0108	0.108	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Nemouridae	8	80	0.0314	0.314	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Perlodidae	4	40	0.0804	0.804	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Glossosomatidae	10	100	0.0422	0.422	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Hydropsychidae	1	10	0.0321	0.321	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Rhyacophilidae	5	50	0.0046	0.046	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Chironomidae	69	690	0.0291	0.291	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Empididae	15	150	0.0316	0.316	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Ceratopogonidae	1	10	0.0013	0.013	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Pediciidae	1	10	0.0008	0.008	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Psychodidae	14	140	0.0014	0.014	RG_HENUP_HESS-1_2022-09-12
	RG_HENUP	12-Sep-22	Planariidae	1	10	0.0014	0.014	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Sperchontidae	2	20	0.001	0.01	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Ostracoda	1	10	0.0002	0.002	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Ameletidae	1	10	0.0011	0.011	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Baetidae	1	10	0.0021	0.021	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Ephemerellidae	4	40	0.0016	0.016	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Heptageniidae	91	910	0.0705	0.705	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Chloroperlidae	2	20	0.0027	0.027	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Leuctridae	2	20	0.0012	0.012	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Nemouridae	1	10	0.0004	0.004	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Perlodidae	1	10	0.0512	0.512	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Taeniopterygidae	2	20	0.0007	0.007	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Glossosomatidae	1	10	0.0136	0.136	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Hydropsychidae	2	20	0.1004	1.004	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Rhyacophilidae	1	10	0.0224	0.224	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Ceratopogonidae	2	20	0.0011	0.011	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Chironomidae	10	100	0.0136	0.136	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Psychodidae	3	30	0.0007	0.007	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Pisidiidae	1	10	0.0008	0.008	RG_HENUP_HESS-2_2022-09-12
	RG_HENUP	12-Sep-22	Planariidae	2	20	0.0029	0.029	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Hydrobatidae	1	10	0.0001	0.001	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Lebertiidae	2	20	0.0001	0.001	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Hydryphantidae	2	20	0.0001	0.001	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Sperchontidae	3	30	0.0006	0.006	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Ephemerellidae	17	170	0.0562	0.562	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Heptageniidae	515	5150	0.7462	7.462	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Capniidae	2	20	0.0014	0.014	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Chloroperlidae	46	460	0.0958	0.958	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Leuctridae	6	60	0.003	0.03	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Nemouridae	13	130	0.0436	0.436	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Perlodidae	4	40	0.0497	0.497	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Taeniopterygidae	28	280	0.0075	0.075	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Glossosomatidae	39	390	0.1196	1.196	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Hydropsychidae	2	20	0.2576	2.576	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Rhyacophilidae	5	50	0.0616	0.616	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Ceratopogonidae	6	60	0.0024	0.024	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Chironomidae	68	680	0.0559	0.559	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Empididae	20	200	0.0356	0.356	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Psychodidae	21	210	0.0026	0.026	RG_HENUP_HESS-3_2022-09-12
	RG_HENUP	12-Sep-22	Nemata	1	10	0.0009	0.009	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Enchytraeidae	1	10	0.0008	0.008	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Hydryphantidae	1	10	0.0007	0.007	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Ostracoda	2	20	0.0007	0.007	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Ameletidae	5	50	0.0021	0.021	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Baetidae	1	10	0.0015	0.015	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Ephemerellidae	18	180	0.0045	0.045	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Heptageniidae	260	2600	0.1753	1.753	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Chloroperlidae	29	290	0.0772	0.772	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Leuctridae	4	40	0.0058	0.058	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Nemouridae	6	60	0.0253	0.253	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Perlodidae	2	20	0.0533	0.533	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Taeniopterygidae	15	150	0.0054	0.054	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Glossosomatidae	8	80	0.0196	0.196	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Rhyacophilidae	2	20	0.0052	0.052	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Ceratopogonidae	2	20	0.0018	0.018	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Chironomidae	106	1060	0.0284	0.284	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Empididae	9	90	0.0181	0.181	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Psychodidae	10	100	0.0028	0.028	RG_HENUP_HESS-4_2022-09-12
	RG_HENUP	12-Sep-22	Nemata	2	20	0.001	0.01	RG_HENUP_HESS-5_2022-09-12
	RG_HENUP	12-Sep-22	Planariidae	6	60	0.0108	0.108	RG_HENUP_HESS-5_2022-09-12
RG_HENUP	12-Sep-22	Hydryphantidae	2	20	0.0006	0.006	RG_HENUP_HESS-5_2022-09-12	
RG_HENUP	12-Sep-22	Sperchontidae	3	30	0.0013	0.013	RG_HENUP_HESS-5_2022-09-12	
RG_HENUP	12-Sep-22	Baetidae	2	20	0.0009	0.009	RG_HENUP_HESS-5_2022-09-12	
RG_HENUP	12-Sep-22	Ephemerellidae	39	390	0.0499	0.499	RG_HENUP_HESS-5_2022-09-12	
RG_HENUP	12-Sep-22	Heptageniidae	235	2350	0.2222	2.222	RG_HENUP_HESS-5_2022-09-12	
RG_HENUP	12-Sep-22	Capniidae	1	10	0.0003	0.003	RG_HENUP_HESS-5_2022-09-12	
RG_HENUP	12-Sep-22	Chloroperlidae	18	180	0.0348	0.348	RG_HENUP_HESS-5_2022-09-12	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID	
Reference	RG_HENUP	12-Sep-22	Leuctridae	9	90	0.0044	0.044	RG_HENUP_HESS-5_2022-09-12
	RG_HENUP	12-Sep-22	Nemouridae	13	130	0.0386	0.386	RG_HENUP_HESS-5_2022-09-12
	RG_HENUP	12-Sep-22	Perlodidae	4	40	0.0921	0.921	RG_HENUP_HESS-5_2022-09-12
	RG_HENUP	12-Sep-22	Taeniopterygidae	22	220	0.0059	0.059	RG_HENUP_HESS-5_2022-09-12
	RG_HENUP	12-Sep-22	Glossosomatidae	3	30	0.0127	0.127	RG_HENUP_HESS-5_2022-09-12
	RG_HENUP	12-Sep-22	Hydropsychidae	3	30	0.1811	1.811	RG_HENUP_HESS-5_2022-09-12
	RG_HENUP	12-Sep-22	Rhyacophilidae	1	10	0.0085	0.085	RG_HENUP_HESS-5_2022-09-12
	RG_HENUP	12-Sep-22	Chironomidae	70	700	0.0275	0.275	RG_HENUP_HESS-5_2022-09-12
	RG_HENUP	12-Sep-22	Empididae	28	280	0.0509	0.509	RG_HENUP_HESS-5_2022-09-12
	RG_HENUP	12-Sep-22	Psychodidae	7	70	0.0008	0.008	RG_HENUP_HESS-5_2022-09-12
	RG_HENUP	12-Sep-22	Nemata	1	10	0.0001	0.001	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Planariidae	4	40	0.009	0.09	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Hydryphantidae	1	10	0.0002	0.002	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Sperchontidae	1	10	0.0002	0.002	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Ameletidae	2	20	0.0001	0.001	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Baetidae	1	10	0.001	0.01	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Ephemerellidae	27	270	0.02	0.2	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Heptageniidae	297	2970	0.4256	4.256	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Chloroperlidae	15	150	0.0203	0.203	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Leuctridae	7	70	0.0077	0.077	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Nemouridae	36	360	0.1005	1.005	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Perlodidae	5	50	0.0936	0.936	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Taeniopterygidae	23	230	0.0056	0.056	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Glossosomatidae	9	90	0.0382	0.382	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Hydropsychidae	14	140	0.6166	6.166	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Rhyacophilidae	6	60	0.0462	0.462	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Ceratopogonidae	1	10	0.0002	0.002	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Chironomidae	200	2000	0.031	0.31	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Empididae	75	750	0.1945	1.945	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Psychodidae	7	70	0.0007	0.007	RG_HENUP_HESS-6_2022-09-12
	RG_HENUP	12-Sep-22	Planariidae	5	50	0.006	0.06	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Lebertiidae	1	10	0.0003	0.003	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Hydryphantidae	1	10	0.0001	0.001	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Sperchontidae	2	20	0.0001	0.001	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Ostracoda	1	10	0.0001	0.001	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Ameletidae	5	50	0.0011	0.011	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Ephemerellidae	22	220	0.0166	0.166	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Heptageniidae	216	2160	0.1464	1.464	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Capniidae	3	30	0.0004	0.004	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Chloroperlidae	13	130	0.0348	0.348	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Leuctridae	6	60	0.0057	0.057	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Nemouridae	4	40	0.0158	0.158	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Taeniopterygidae	3	30	0.0004	0.004	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Trichoptera	2	20	0.0001	0.001	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Hydropsychidae	1	10	0.187	1.87	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Rhyacophilidae	3	30	0.0384	0.384	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Ceratopogonidae	1	10	0.0001	0.001	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Chironomidae	73	730	0.028	0.28	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Empididae	12	120	0.0189	0.189	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Psychodidae	3	30	0.0005	0.005	RG_HENUP_HESS-7_2022-09-12
	RG_HENUP	12-Sep-22	Nemata	2	20	0.0001	0.001	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Planariidae	3	30	0.0084	0.084	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Lumbriculidae	1	10	0.002	0.02	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Lebertiidae	1	10	0.0003	0.003	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Ostracoda	1	10	0.0002	0.002	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Ameletidae	2	20	0.0001	0.001	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Ephemerellidae	15	150	0.0025	0.025	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Heptageniidae	252	2520	0.2023	2.023	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Capniidae	4	40	0.0008	0.008	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Chloroperlidae	9	90	0.0047	0.047	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Leuctridae	6	60	0.0021	0.021	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Nemouridae	1	10	0.0025	0.025	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Perlodidae	5	50	0.0004	0.004	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Taeniopterygidae	4	40	0.0008	0.008	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Glossosomatidae	4	40	0.0196	0.196	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Hydropsychidae	2	20	0.0963	0.963	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Chironomidae	75	750	0.0182	0.182	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Empididae	14	140	0.033	0.33	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Psychodidae	4	40	0.0003	0.003	RG_HENUP_HESS-8_2022-09-12
	RG_HENUP	12-Sep-22	Sperchontidae	1	10	0.0005	0.005	RG_HENUP_HESS-9_2022-09-12
	RG_HENUP	12-Sep-22	Ostracoda	3	30	0.0007	0.007	RG_HENUP_HESS-9_2022-09-12
	RG_HENUP	12-Sep-22	Ameletidae	19	190	0.0218	0.218	RG_HENUP_HESS-9_2022-09-12
	RG_HENUP	12-Sep-22	Ephemerellidae	6	60	0.0289	0.289	RG_HENUP_HESS-9_2022-09-12
	RG_HENUP	12-Sep-22	Heptageniidae	400	4000	0.4025	4.025	RG_HENUP_HESS-9_2022-09-12
	RG_HENUP	12-Sep-22	Chloroperlidae	8	80	0.0133	0.133	RG_HENUP_HESS-9_2022-09-12
	RG_HENUP	12-Sep-22	Leuctridae	3	30	0.0015	0.015	RG_HENUP_HESS-9_2022-09-12
	RG_HENUP	12-Sep-22	Nemouridae	2	20	0.0095	0.095	RG_HENUP_HESS-9_2022-09-12
	RG_HENUP	12-Sep-22	Perlodidae	3	30	0.0847	0.847	RG_HENUP_HESS-9_2022-09-12
	RG_HENUP	12-Sep-22	Taeniopterygidae	3	30	0.0014	0.014	RG_HENUP_HESS-9_2022-09-12
	RG_HENUP	12-Sep-22	Glossosomatidae	4	40	0.0208	0.208	RG_HENUP_HESS-9_2022-09-12
RG_HENUP	12-Sep-22	Rhyacophilidae	2	20	0.0005	0.005	RG_HENUP_HESS-9_2022-09-12	
RG_HENUP	12-Sep-22	Ceratopogonidae	1	10	0.0008	0.008	RG_HENUP_HESS-9_2022-09-12	
RG_HENUP	12-Sep-22	Chironomidae	65	650	0.0187	0.187	RG_HENUP_HESS-9_2022-09-12	
RG_HENUP	12-Sep-22	Empididae	15	150	0.0392	0.392	RG_HENUP_HESS-9_2022-09-12	
RG_HENUP	12-Sep-22	Psychodidae	4	40	0.001	0.01	RG_HENUP_HESS-9_2022-09-12	
RG_HENUP	12-Sep-22	Planariidae	3	30	0.0007	0.007	RG_HENUP_HESS-10_2022-09-12	
RG_HENUP	12-Sep-22	Lebertiidae	2	20	0.0008	0.008	RG_HENUP_HESS-10_2022-09-12	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID	
Reference	RG_HENUP	12-Sep-22	Ostracoda	1	10	0.0003	0.003	RG_HENUP_HESS-10_2022-09-12
	RG_HENUP	12-Sep-22	Ameletidae	2	20	0.0002	0.002	RG_HENUP_HESS-10_2022-09-12
	RG_HENUP	12-Sep-22	Ephemerellidae	27	270	0.0211	0.211	RG_HENUP_HESS-10_2022-09-12
	RG_HENUP	12-Sep-22	Heptageniidae	666	6660	0.6441	6.441	RG_HENUP_HESS-10_2022-09-12
	RG_HENUP	12-Sep-22	Capniidae	2	20	0.0005	0.005	RG_HENUP_HESS-10_2022-09-12
	RG_HENUP	12-Sep-22	Chloroperlidae	24	240	0.0352	0.352	RG_HENUP_HESS-10_2022-09-12
	RG_HENUP	12-Sep-22	Leuctridae	7	70	0.0065	0.065	RG_HENUP_HESS-10_2022-09-12
	RG_HENUP	12-Sep-22	Nemouridae	13	130	0.059	0.59	RG_HENUP_HESS-10_2022-09-12
	RG_HENUP	12-Sep-22	Perlodidae	11	110	0.2643	2.643	RG_HENUP_HESS-10_2022-09-12
	RG_HENUP	12-Sep-22	Taeniopterygidae	19	190	0.0051	0.051	RG_HENUP_HESS-10_2022-09-12
	RG_HENUP	12-Sep-22	Glossosomatidae	4	40	0.0207	0.207	RG_HENUP_HESS-10_2022-09-12
	RG_HENUP	12-Sep-22	Hydropsychidae	2	20	0.0322	0.322	RG_HENUP_HESS-10_2022-09-12
	RG_HENUP	12-Sep-22	Rhyacophilidae	2	20	0.0028	0.028	RG_HENUP_HESS-10_2022-09-12
	RG_HENUP	12-Sep-22	Chironomidae	221	2210	0.0652	0.652	RG_HENUP_HESS-10_2022-09-12
	RG_HENUP	12-Sep-22	Empididae	14	140	0.0396	0.396	RG_HENUP_HESS-10_2022-09-12
	RG_HENUP	12-Sep-22	Psychodidae	7	70	0.0007	0.007	RG_HENUP_HESS-10_2022-09-12
	RG_FO26	16-Sep-22	Nemata	10	100	0.0014	0.014	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Planariidae	2	20	0.0048	0.048	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Lebertiidae	4	40	0.0014	0.014	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Ostracoda	8	80	0.0018	0.018	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Ameletidae	40	400	0.012	0.12	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Baetidae	40	400	0.0156	0.156	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Ephemerellidae	152	1520	0.0658	0.658	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Heptageniidae	590	5900	0.1936	1.936	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Chloroperlidae	26	260	0.03	0.3	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Leuctridae	2	20	0.0008	0.008	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Nemouridae	22	220	0.0782	0.782	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Perlodidae	10	100	0.0406	0.406	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Taeniopterygidae	2	20	0.0004	0.004	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Trichoptera	22	220	0.5879	5.879	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Trichoptera	34	340	0.002	0.02	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Hydropsychidae	4	40	0.001	0.01	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Limnephilidae	8	80	0.5871	5.871	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Limnephilidae	16	160	0.0018	0.018	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Rhyacophilidae	14	140	0.065	0.65	RG_FO26_HESS-1_2022-09-16
	RG_FO26	16-Sep-22	Uenoidae	7	70	0.5864	5.864	RG_FO26_HESS-1_2022-09-16
RG_FO26	16-Sep-22	Uenoidae	10	100	0.0006	0.006	RG_FO26_HESS-1_2022-09-16	
RG_FO26	16-Sep-22	Ceratopogonidae	12	120	0.0062	0.062	RG_FO26_HESS-1_2022-09-16	
RG_FO26	16-Sep-22	Chironomidae	876	8760	0.7514	7.514	RG_FO26_HESS-1_2022-09-16	
RG_FO26	16-Sep-22	Empididae	4	40	0.002	0.02	RG_FO26_HESS-1_2022-09-16	
RG_FO26	16-Sep-22	Psychodidae	374	3740	0.0688	0.688	RG_FO26_HESS-1_2022-09-16	
RG_FO26	16-Sep-22	Pisidiidae	2	20	0.0012	0.012	RG_FO26_HESS-1_2022-09-16	
RG_FO26	16-Sep-22	Nemata	12	120	0.0052	0.052	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Planariidae	32	320	0.0932	0.932	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Sperchontidae	4	40	0.002	0.02	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Baetidae	48	480	0.0596	0.596	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Ephemerellidae	224	2240	0.1056	1.056	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Heptageniidae	536	5360	0.15	1.5	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Chloroperlidae	48	480	0.0332	0.332	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Nemouridae	24	240	0.1272	1.272	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Perlodidae	24	240	0.0132	0.132	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Taeniopterygidae	8	80	0.0004	0.004	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Trichoptera	8	80	0.0004	0.004	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Hydropsychidae	4	40	0.0008	0.008	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Limnephilidae	4	40	0.0004	0.004	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Rhyacophilidae	24	240	0.272	2.72	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Uenoidae	8	80	0.0012	0.012	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Ceratopogonidae	24	240	0.0088	0.088	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Chironomidae	1056	10560	0.7584	7.584	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Empididae	4	40	0.0024	0.024	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Psychodidae	652	6520	0.1244	1.244	RG_FO26_HESS-2_2022-09-16	
RG_FO26	16-Sep-22	Nemata	36	360	0.004	0.04	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Planariidae	48	480	0.0576	0.576	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Lebertiidae	4	40	0.0032	0.032	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Sperchontidae	4	40	0.0008	0.008	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Ostracoda	4	40	0.0012	0.012	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Baetidae	60	600	0.0292	0.292	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Ephemerellidae	340	3400	0.2176	2.176	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Heptageniidae	1	10	0.0108	0.108	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Heptageniidae	1288	12880	0.1264	1.264	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Capniidae	12	120	0.0044	0.044	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Chloroperlidae	64	640	0.0576	0.576	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Leuctridae	60	600	0.0204	0.204	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Nemouridae	8	80	0.0511	0.511	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Nemouridae	40	400	0.1084	1.084	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Perlodidae	4	40	0.079	0.79	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Perlodidae	12	120	0.0064	0.064	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Taeniopterygidae	12	120	0.0016	0.016	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Trichoptera	44	440	0.0048	0.048	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Hydropsychidae	1	10	0.1819	1.819	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Hydropsychidae	12	120	0.0036	0.036	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Limnephilidae	12	120	0.0024	0.024	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Rhyacophilidae	6	60	0.1212	1.212	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Rhyacophilidae	40	400	0.1456	1.456	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Ceratopogonidae	120	1200	0.0328	0.328	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Chironomidae	1112	11120	0.6596	6.596	RG_FO26_HESS-3_2022-09-16	
RG_FO26	16-Sep-22	Empididae	4	40	0.008	0.08	RG_FO26_HESS-3_2022-09-16	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID	
Reference	RG_FO26	16-Sep-22	Psychodidae	1288	12880	0.2576	2.576	RG_FO26_HESS-3_2022-09-16
	RG_FO26	16-Sep-22	Pisidiidae	12	120	0.0056	0.056	RG_FO26_HESS-3_2022-09-16
	RG_FO26	16-Sep-22	Nemata	4	40	0.0044	0.044	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Sperchontidae	8	80	0.0024	0.024	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Ameletidae	12	120	0.006	0.06	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Baetidae	8	80	0.0316	0.316	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Ephemerellidae	252	2520	0.2592	2.592	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Heptageniidae	4	40	0.0177	0.177	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Heptageniidae	1360	13600	0.5856	5.856	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Chloroperlidae	1	10	0.0072	0.072	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Chloroperlidae	76	760	0.0832	0.832	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Leuctridae	4	40	0.0028	0.028	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Nemouridae	21	210	0.1182	1.182	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Nemouridae	80	800	0.2476	2.476	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Peltoperlidae	1	10	0.0135	0.135	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Perlodidae	3	30	0.0914	0.914	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Perlodidae	4	40	0.0264	0.264	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Taeniopterygidae	48	480	0.0192	0.192	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Hydropsychidae	22	220	2.3908	23.908	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Rhyacophilidae	10	100	0.1827	1.827	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Rhyacophilidae	168	1680	0.4116	4.116	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Chironomidae	240	2400	0.1864	1.864	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Empididae	8	80	0.0288	0.288	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Psychodidae	224	2240	0.126	1.26	RG_FO26_HESS-4_2022-09-16
	RG_FO26	16-Sep-22	Planariidae	2	20	0.005	0.05	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Hydryphantidae	4	40	0.0008	0.008	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Sperchontidae	6	60	0.0022	0.022	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Ostracoda	2	20	0.0008	0.008	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Ameletidae	4	40	0.0042	0.042	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Baetidae	20	200	0.0222	0.222	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Ephemerellidae	166	1660	0.1572	1.572	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Heptageniidae	636	6360	0.2476	2.476	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Chloroperlidae	20	200	0.0354	0.354	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Leuctridae	20	200	0.0076	0.076	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Nemouridae	64	640	0.2374	2.374	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Perlodidae	26	260	0.1262	1.262	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Taeniopterygidae	14	140	0.0008	0.008	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Trichoptera	58	580	0.0016	0.016	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Apataniidae	2	20	0.0004	0.004	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Glossosomatidae	2	20	0.0202	0.202	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Hydropsychidae	32	320	0.3016	3.016	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Rhyacophilidae	38	380	0.1544	1.544	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Uenoidae	14	140	0.0018	0.018	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Ceratopogonidae	14	140	0.0032	0.032	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Chironomidae	118	1180	0.0912	0.912	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Empididae	2	20	0.0022	0.022	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Psychodidae	352	3520	0.065	0.65	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Pisidiidae	2	20	0.0002	0.002	RG_FO26_HESS-5_2022-09-16
	RG_FO26	16-Sep-22	Nemata	24	240	0.0004	0.004	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Planariidae	12	120	0.0088	0.088	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Sperchontidae	8	80	0.0024	0.024	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Ameletidae	4	40	0.0004	0.004	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Baetidae	40	400	0.0244	0.244	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Ephemerellidae	248	2480	0.1616	1.616	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Heptageniidae	1	10	0.0076	0.076	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Heptageniidae	604	6040	0.3008	3.008	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Leuctridae	8	80	0.0024	0.024	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Nemouridae	17	170	0.1108	1.108	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Nemouridae	52	520	0.1556	1.556	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Perlodidae	17	170	0.3344	3.344	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Perlodidae	8	80	0.0016	0.016	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Taeniopterygidae	48	480	0.0028	0.028	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Trichoptera	48	480	0.0028	0.028	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Apataniidae	4	40	0.0004	0.004	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Glossosomatidae	8	80	0.0444	0.444	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Hydropsychidae	2	20	0.0573	0.573	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Hydropsychidae	32	320	0.0064	0.064	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Rhyacophilidae	1	10	0.0165	0.165	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Rhyacophilidae	16	160	0.0516	0.516	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Ceratopogonidae	60	600	0.0184	0.184	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Chironomidae	652	6520	0.3184	3.184	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Psychodidae	660	6600	0.1268	1.268	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Tipulidae	1	10	0.1689	1.689	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Tipulidae	4	40	0.0004	0.004	RG_FO26_HESS-6_2022-09-16
	RG_FO26	16-Sep-22	Nemata	36	360	0.0012	0.012	RG_FO26_HESS-7_2022-09-16
	RG_FO26	16-Sep-22	Planariidae	16	160	0.0356	0.356	RG_FO26_HESS-7_2022-09-16
	RG_FO26	16-Sep-22	Sperchontidae	16	160	0.0016	0.016	RG_FO26_HESS-7_2022-09-16
	RG_FO26	16-Sep-22	Ameletidae	16	160	0.0012	0.012	RG_FO26_HESS-7_2022-09-16
RG_FO26	16-Sep-22	Baetidae	56	560	0.0212	0.212	RG_FO26_HESS-7_2022-09-16	
RG_FO26	16-Sep-22	Ephemerellidae	388	3880	0.1612	1.612	RG_FO26_HESS-7_2022-09-16	
RG_FO26	16-Sep-22	Heptageniidae	784	7840	0.3092	3.092	RG_FO26_HESS-7_2022-09-16	
RG_FO26	16-Sep-22	Chloroperlidae	16	160	0.0084	0.084	RG_FO26_HESS-7_2022-09-16	
RG_FO26	16-Sep-22	Leuctridae	16	160	0.008	0.08	RG_FO26_HESS-7_2022-09-16	
RG_FO26	16-Sep-22	Nemouridae	104	1040	0.3028	3.028	RG_FO26_HESS-7_2022-09-16	
RG_FO26	16-Sep-22	Perlodidae	20	200	0.0416	0.416	RG_FO26_HESS-7_2022-09-16	
RG_FO26	16-Sep-22	Taeniopterygidae	16	160	0.0004	0.004	RG_FO26_HESS-7_2022-09-16	
RG_FO26	16-Sep-22	Trichoptera	220	2200	0.0088	0.088	RG_FO26_HESS-7_2022-09-16	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID	
Reference	RG_FO26	16-Sep-22	Glossosomatidae	4	40	0.0116	0.116	RG_FO26_HESS-7_2022-09-16
	RG_FO26	16-Sep-22	Hydropsychidae	4	40	0.274	2.74	RG_FO26_HESS-7_2022-09-16
	RG_FO26	16-Sep-22	Limnephilidae	12	120	0.0012	0.012	RG_FO26_HESS-7_2022-09-16
	RG_FO26	16-Sep-22	Rhyacophilidae	36	360	0.214	2.14	RG_FO26_HESS-7_2022-09-16
	RG_FO26	16-Sep-22	Uenoidae	56	560	0.0004	0.004	RG_FO26_HESS-7_2022-09-16
	RG_FO26	16-Sep-22	Ceratopogonidae	32	320	0.006	0.06	RG_FO26_HESS-7_2022-09-16
	RG_FO26	16-Sep-22	Chironomidae	976	9760	0.5964	5.964	RG_FO26_HESS-7_2022-09-16
	RG_FO26	16-Sep-22	Empididae	4	40	0.0036	0.036	RG_FO26_HESS-7_2022-09-16
	RG_FO26	16-Sep-22	Pelecorhynchidae	4	40	0.0004	0.004	RG_FO26_HESS-7_2022-09-16
	RG_FO26	16-Sep-22	Psychodidae	680	6800	0.1184	1.184	RG_FO26_HESS-7_2022-09-16
	RG_FO26	16-Sep-22	Pisidiidae	4	40	0.0008	0.008	RG_FO26_HESS-7_2022-09-16
	RG_FO26	16-Sep-22	Planariidae	4	40	0.004	0.04	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Hygrobatidae	4	40	0.0004	0.004	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Hydryphantidae	4	40	0.0016	0.016	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Ostracoda	4	40	0.002	0.02	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Baetidae	24	240	0.0228	0.228	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Ephemerellidae	208	2080	0.116	1.16	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Heptageniidae	1	10	0.0148	0.148	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Heptageniidae	580	5800	0.28	2.8	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Chloroperlidae	40	400	0.0508	0.508	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Leuctridae	16	160	0.0088	0.088	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Nemouridae	52	520	0.208	2.08	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Perlodidae	1	10	0.0252	0.252	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Perlodidae	20	200	0.1584	1.584	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Taeniopterygidae	4	40	0.0004	0.004	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Trichoptera	104	1040	0.006	0.06	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Hydropsychidae	1	10	0.1268	1.268	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Hydropsychidae	8	80	0.13	1.3	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Limnephilidae	8	80	0.0036	0.036	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Rhyacophilidae	36	360	0.0792	0.792	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Uenoidae	28	280	0.0044	0.044	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Ceratopogonidae	20	200	0.006	0.06	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Chironomidae	332	3320	0.1104	1.104	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Psychodidae	976	9760	0.1716	1.716	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Pisidiidae	4	40	0.0008	0.008	RG_FO26_HESS-8_2022-09-16
	RG_FO26	16-Sep-22	Nemata	8	80	0.0014	0.014	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Planariidae	8	80	0.0184	0.184	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Sperchontidae	4	40	0.0018	0.018	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Baetidae	8	80	0.0286	0.286	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Ephemerellidae	98	980	0.0842	0.842	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Heptageniidae	1	10	0.0064	0.064	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Heptageniidae	554	5540	0.2332	2.332	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Chloroperlidae	8	80	0.0048	0.048	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Leuctridae	16	160	0.0096	0.096	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Nemouridae	9	90	0.059	0.59	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Nemouridae	26	260	0.1416	1.416	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Perlodidae	4	40	0.0608	0.608	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Perlodidae	10	100	0.0356	0.356	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Taeniopterygidae	12	120	0.0042	0.042	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Trichoptera	36	360	0.0028	0.028	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Glossosomatidae	2	20	0.001	0.01	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Hydropsychidae	2	20	0.1232	1.232	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Hydropsychidae	8	80	0.0036	0.036	RG_FO26_HESS-9_2022-09-16
	RG_FO26	16-Sep-22	Rhyacophilidae	12	120	0.0324	0.324	RG_FO26_HESS-9_2022-09-16
RG_FO26	16-Sep-22	Ceratopogonidae	40	400	0.0008	0.008	RG_FO26_HESS-9_2022-09-16	
RG_FO26	16-Sep-22	Chironomidae	100	1000	0.0474	0.474	RG_FO26_HESS-9_2022-09-16	
RG_FO26	16-Sep-22	Psychodidae	348	3480	0.0688	0.688	RG_FO26_HESS-9_2022-09-16	
RG_FO26	16-Sep-22	Tipulidae	2	20	0.001	0.01	RG_FO26_HESS-9_2022-09-16	
RG_FO26	16-Sep-22	Nemata	16	160	0.0032	0.032	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Planariidae	28	280	0.0492	0.492	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Lebertiidae	4	40	0.0004	0.004	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Ameletidae	24	240	0.0052	0.052	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Baetidae	84	840	0.0956	0.956	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Ephemerellidae	364	3640	0.1976	1.976	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Heptageniidae	3	30	0.0243	0.243	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Heptageniidae	1372	13720	0.4172	4.172	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Capniidae	8	80	0.0032	0.032	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Chloroperlidae	56	560	0.0532	0.532	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Leuctridae	64	640	0.0168	0.168	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Nemouridae	14	140	0.0868	0.868	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Nemouridae	56	560	0.2156	2.156	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Perlodidae	3	30	0.0523	0.523	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Perlodidae	16	160	0.0064	0.064	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Trichoptera	112	1120	0.0068	0.068	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Hydropsychidae	2	20	0.1465	1.465	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Hydropsychidae	16	160	0.0856	0.856	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Limnephilidae	4	40	0.0004	0.004	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Rhyacophilidae	6	60	0.0851	0.851	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Rhyacophilidae	76	760	0.182	1.82	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Ceratopogonidae	100	1000	0.0304	0.304	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Chironomidae	340	3400	0.1224	1.224	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Psychodidae	1300	13000	0.2252	2.252	RG_FO26_HESS-10_2022-09-16	
RG_FO26	16-Sep-22	Pisidiidae	8	80	0.002	0.02	RG_FO26_HESS-10_2022-09-16	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID
Mine-Exposed	RG_FOUCL	16-Sep-22	Nemata	2	20	0.0002	0.002	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Planariidae	2	20	0.0054	0.054	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Enchytraeidae	2	20	0.0002	0.002	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Lebertiidae	4	40	0.0008	0.008	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Ostracoda	10	100	0.0022	0.022	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Ameletidae	4	40	0.0008	0.008	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Baetidae	8	80	0.0174	0.174	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Ephemerellidae	58	580	0.0822	0.822	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Heptageniidae	768	7680	0.4498	4.498	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Chloroperlidae	34	340	0.0612	0.612	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Leuctridae	6	60	0.0056	0.056	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Nemouridae	12	120	0.0244	0.244	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Perlodidae	1	10	0.0274	0.274	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Perlodidae	12	120	0.0874	0.874	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Taeniopterygidae	10	100	0.0018	0.018	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Glossosomatidae	2	20	0.0049	0.049	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Glossosomatidae	6	60	0.033	0.33	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Hydropsychidae	1	10	0.0835	0.835	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Rhyacophilidae	24	240	0.1144	1.144	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Ceratopogonidae	10	100	0.0038	0.038	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Chironomidae	18	180	0.0038	0.038	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Psychodidae	368	3680	0.1136	1.136	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Simuliidae	2	20	0.002	0.02	RG_FOUCL_HESS-1_2022-09-16
	RG_FOUCL	16-Sep-22	Nemata	8	80	0.0004	0.004	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Planariidae	12	120	0.0724	0.724	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Lebertiidae	4	40	0.0012	0.012	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Ostracoda	8	80	0.0004	0.004	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Baetidae	12	120	0.0596	0.596	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Ephemerellidae	152	1520	0.1148	1.148	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Heptageniidae	1208	12080	0.5296	5.296	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Chloroperlidae	44	440	0.0528	0.528	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Leuctridae	8	80	0.0124	0.124	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Nemouridae	24	240	0.0764	0.764	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Perlodidae	16	160	0.0776	0.776	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Taeniopterygidae	4	40	0.0008	0.008	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Apataniidae	4	40	0.004	0.04	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Glossosomatidae	4	40	0.008	0.08	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Rhyacophilidae	32	320	0.0188	0.188	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Ceratopogonidae	20	200	0.0048	0.048	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Chironomidae	16	160	0.0068	0.068	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Psychodidae	892	8920	0.2984	2.984	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Limoniidae	3	30	0.663	6.63	RG_FOUCL_HESS-2_2022-09-16
	RG_FOUCL	16-Sep-22	Nemata	12	120	0.0054	0.054	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Planariidae	6	60	0.0236	0.236	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Enchytraeidae	4	40	0.0002	0.002	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Baetidae	6	60	0.0208	0.208	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Ephemerellidae	120	1200	0.0694	0.694	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Heptageniidae	776	7760	0.4204	4.204	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Capniidae	2	20	0.0002	0.002	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Chloroperlidae	8	80	0.0042	0.042	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Leuctridae	12	120	0.0112	0.112	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Nemouridae	12	120	0.0288	0.288	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Perlodidae	14	140	0.0684	0.684	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Taeniopterygidae	8	80	0.0012	0.012	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Glossosomatidae	6	60	0.0328	0.328	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Hydropsychidae	2	20	0.1554	1.554	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Limnephilidae	2	20	0.0004	0.004	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Rhyacophilidae	10	100	0.0024	0.024	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Ceratopogonidae	20	200	0.0042	0.042	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Chironomidae	8	80	0.0032	0.032	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Psychodidae	186	1860	0.0606	0.606	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Limoniidae	1	10	0.2602	2.602	RG_FOUCL_HESS-3_2022-09-16
	RG_FOUCL	16-Sep-22	Planariidae	36	360	0.0814	0.814	RG_FOUCL_HESS-4_2022-09-16
	RG_FOUCL	16-Sep-22	Lebertiidae	2	20	0.0006	0.006	RG_FOUCL_HESS-4_2022-09-16
	RG_FOUCL	16-Sep-22	Ameletidae	4	40	0.0008	0.008	RG_FOUCL_HESS-4_2022-09-16
	RG_FOUCL	16-Sep-22	Baetidae	10	100	0.0086	0.086	RG_FOUCL_HESS-4_2022-09-16
	RG_FOUCL	16-Sep-22	Ephemerellidae	96	960	0.0522	0.522	RG_FOUCL_HESS-4_2022-09-16
	RG_FOUCL	16-Sep-22	Heptageniidae	690	6900	0.4676	4.676	RG_FOUCL_HESS-4_2022-09-16
	RG_FOUCL	16-Sep-22	Chloroperlidae	22	220	0.0282	0.282	RG_FOUCL_HESS-4_2022-09-16
	RG_FOUCL	16-Sep-22	Leuctridae	2	20	0.001	0.01	RG_FOUCL_HESS-4_2022-09-16
	RG_FOUCL	16-Sep-22	Nemouridae	10	100	0.019	0.19	RG_FOUCL_HESS-4_2022-09-16
	RG_FOUCL	16-Sep-22	Perlodidae	24	240	0.1356	1.356	RG_FOUCL_HESS-4_2022-09-16
	RG_FOUCL	16-Sep-22	Taeniopterygidae	8	80	0.0014	0.014	RG_FOUCL_HESS-4_2022-09-16
	RG_FOUCL	16-Sep-22	Glossosomatidae	4	40	0.0088	0.088	RG_FOUCL_HESS-4_2022-09-16
	RG_FOUCL	16-Sep-22	Rhyacophilidae	20	200	0.0078	0.078	RG_FOUCL_HESS-4_2022-09-16
	RG_FOUCL	16-Sep-22	Chironomidae	56	560	0.0176	0.176	RG_FOUCL_HESS-4_2022-09-16
	RG_FOUCL	16-Sep-22	Psychodidae	26	260	0.0052	0.052	RG_FOUCL_HESS-4_2022-09-16
	RG_FOUCL	16-Sep-22	Nemata	2	20	0.0002	0.002	RG_FOUCL_HESS-5_2022-09-16
	RG_FOUCL	16-Sep-22	Planariidae	14	140	0.031	0.31	RG_FOUCL_HESS-5_2022-09-16
	RG_FOUCL	16-Sep-22	Lebertiidae	2	20	0.0002	0.002	RG_FOUCL_HESS-5_2022-09-16
RG_FOUCL	16-Sep-22	Ostracoda	4	40	0.001	0.01	RG_FOUCL_HESS-5_2022-09-16	
RG_FOUCL	16-Sep-22	Baetidae	10	100	0.0184	0.184	RG_FOUCL_HESS-5_2022-09-16	
RG_FOUCL	16-Sep-22	Ephemerellidae	26	260	0.0206	0.206	RG_FOUCL_HESS-5_2022-09-16	
RG_FOUCL	16-Sep-22	Heptageniidae	484	4840	0.2814	2.814	RG_FOUCL_HESS-5_2022-09-16	
RG_FOUCL	16-Sep-22	Capniidae	2	20	0.0012	0.012	RG_FOUCL_HESS-5_2022-09-16	
RG_FOUCL	16-Sep-22	Chloroperlidae	12	120	0.0148	0.148	RG_FOUCL_HESS-5_2022-09-16	
RG_FOUCL	16-Sep-22	Leuctridae	4	40	0.005	0.05	RG_FOUCL_HESS-5_2022-09-16	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID
Mine-Exposed	RG_FOUCL	16-Sep-22	Nemouridae	22	220	0.0614	0.614	RG_FOUCL_HESS-5_2022-09-16
	RG_FOUCL	16-Sep-22	Perlodidae	8	80	0.0854	0.854	RG_FOUCL_HESS-5_2022-09-16
	RG_FOUCL	16-Sep-22	Taeniopterygidae	2	20	0.0002	0.002	RG_FOUCL_HESS-5_2022-09-16
	RG_FOUCL	16-Sep-22	Rhyacophilidae	20	200	0.1114	1.114	RG_FOUCL_HESS-5_2022-09-16
	RG_FOUCL	16-Sep-22	Ceratopogonidae	2	20	0.0002	0.002	RG_FOUCL_HESS-5_2022-09-16
	RG_FOUCL	16-Sep-22	Chironomidae	14	140	0.0052	0.052	RG_FOUCL_HESS-5_2022-09-16
	RG_FOUCL	16-Sep-22	Psychodidae	358	3580	0.1334	1.334	RG_FOUCL_HESS-5_2022-09-16
	RG_FOUCL	16-Sep-22	Limoniidae	2	20	0.1316	1.316	RG_FOUCL_HESS-5_2022-09-16
	RG_FOUCL	16-Sep-22	Nemata	6	60	0.0022	0.022	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Planariidae	22	220	0.0492	0.492	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Ostracoda	2	20	0.0004	0.004	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Ephemerellidae	38	380	0.0286	0.286	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Heptageniidae	472	4720	0.1802	1.802	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Capniidae	4	40	0.0028	0.028	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Chloroperlidae	96	960	0.1194	1.194	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Leuctridae	4	40	0.0048	0.048	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Nemouridae	14	140	0.0118	0.118	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Perlodidae	4	40	0.0392	0.392	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Taeniopterygidae	8	80	0.0022	0.022	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Glossosomatidae	2	20	0.0072	0.072	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Hydropsychidae	4	40	0.0016	0.016	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Rhyacophilidae	8	80	0.0308	0.308	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Ceratopogonidae	8	80	0.0026	0.026	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Chironomidae	32	320	0.0166	0.166	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Muscidae	2	20	0.0002	0.002	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Psychodidae	286	2860	0.0664	0.664	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Simuliidae	4	40	0.0132	0.132	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Limoniidae	1	10	0.3029	3.029	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Limoniidae	2	20	0.0278	0.278	RG_FOUCL_HESS-6_2022-09-16
	RG_FOUCL	16-Sep-22	Planariidae	56	560	0.091	0.91	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Naididae	6	60	0.0012	0.012	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Ostracoda	2	20	0.0006	0.006	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Baetidae	16	160	0.0416	0.416	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Ephemerellidae	682	6820	0.0824	0.824	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Heptageniidae	666	6660	0.2418	2.418	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Chloroperlidae	44	440	0.048	0.48	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Leuctridae	6	60	0.004	0.04	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Perlodidae	4	40	0.0811	0.811	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Perlodidae	20	200	0.1752	1.752	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Taeniopterygidae	4	40	0.0008	0.008	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Glossosomatidae	6	60	0.0012	0.012	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Limnephilidae	2	20	0.0004	0.004	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Rhyacophilidae	46	460	0.0584	0.584	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Ceratopogonidae	14	140	0.006	0.06	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Chironomidae	28	280	0.0158	0.158	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Empididae	2	20	0.0024	0.024	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Psychodidae	390	3900	0.109	1.09	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Pisidiidae	2	20	0.0004	0.004	RG_FOUCL_HESS-7_2022-09-16
	RG_FOUCL	16-Sep-22	Nemata	8	80	0.0066	0.066	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Planariidae	38	380	0.1532	1.532	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Naididae	8	80	0.001	0.01	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Lebertiidae	4	40	0.001	0.01	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Sperchontidae	2	20	0.0008	0.008	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Ostracoda	22	220	0.0068	0.068	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Ameletidae	4	40	0.001	0.01	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Baetidae	6	60	0.0164	0.164	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Ephemerellidae	226	2260	0.0742	0.742	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Heptageniidae	824	8240	0.2736	2.736	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Chloroperlidae	40	400	0.0822	0.822	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Leuctridae	28	280	0.0298	0.298	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Nemouridae	12	120	0.0312	0.312	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Perlodidae	12	120	0.091	0.91	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Apataniidae	4	40	0.0022	0.022	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Glossosomatidae	2	20	0.0006	0.006	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Hydropsychidae	1	10	0.093	0.93	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Limnephilidae	8	80	0.0036	0.036	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Rhyacophilidae	12	120	0.0666	0.666	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Ceratopogonidae	18	180	0.006	0.06	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Chironomidae	34	340	0.0168	0.168	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Psychodidae	672	6720	0.2074	2.074	RG_FOUCL_HESS-8_2022-09-16
	RG_FOUCL	16-Sep-22	Planariidae	12	120	0.0632	0.632	RG_FOUCL_HESS-9_2022-09-16
	RG_FOUCL	16-Sep-22	Enchytraeidae	4	40	0.0008	0.008	RG_FOUCL_HESS-9_2022-09-16
	RG_FOUCL	16-Sep-22	Ostracoda	20	200	0.0056	0.056	RG_FOUCL_HESS-9_2022-09-16
	RG_FOUCL	16-Sep-22	Ameletidae	4	40	0.0012	0.012	RG_FOUCL_HESS-9_2022-09-16
	RG_FOUCL	16-Sep-22	Baetidae	8	80	0.0344	0.344	RG_FOUCL_HESS-9_2022-09-16
	RG_FOUCL	16-Sep-22	Ephemerellidae	72	720	0.102	1.02	RG_FOUCL_HESS-9_2022-09-16
	RG_FOUCL	16-Sep-22	Heptageniidae	996	9960	0.3708	3.708	RG_FOUCL_HESS-9_2022-09-16
	RG_FOUCL	16-Sep-22	Chloroperlidae	88	880	0.2884	2.884	RG_FOUCL_HESS-9_2022-09-16
RG_FOUCL	16-Sep-22	Leuctridae	16	160	0.0152	0.152	RG_FOUCL_HESS-9_2022-09-16	
RG_FOUCL	16-Sep-22	Nemouridae	16	160	0.0404	0.404	RG_FOUCL_HESS-9_2022-09-16	
RG_FOUCL	16-Sep-22	Perlodidae	40	400	0.2248	2.248	RG_FOUCL_HESS-9_2022-09-16	
RG_FOUCL	16-Sep-22	Apataniidae	8	80	0.0068	0.068	RG_FOUCL_HESS-9_2022-09-16	
RG_FOUCL	16-Sep-22	Limnephilidae	1	10	0.2653	2.653	RG_FOUCL_HESS-9_2022-09-16	
RG_FOUCL	16-Sep-22	Rhyacophilidae	24	240	0.1916	1.916	RG_FOUCL_HESS-9_2022-09-16	
RG_FOUCL	16-Sep-22	Ceratopogonidae	8	80	0.004	0.04	RG_FOUCL_HESS-9_2022-09-16	
RG_FOUCL	16-Sep-22	Chironomidae	44	440	0.0204	0.204	RG_FOUCL_HESS-9_2022-09-16	
RG_FOUCL	16-Sep-22	Psychodidae	504	5040	0.1516	1.516	RG_FOUCL_HESS-9_2022-09-16	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID
Mine-Exposed	RG_FOUCL	16-Sep-22	Nemata	4	40	0.0004	0.004	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Planariidae	36	360	0.084	0.84	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Naididae	4	40	0.0004	0.004	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Lebertiidae	8	80	0.0012	0.012	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Ostracoda	28	280	0.0092	0.092	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Ameletidae	36	360	0.0252	0.252	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Baetidae	12	120	0.0292	0.292	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Ephemerellidae	304	3040	0.1228	1.228	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Heptageniidae	1920	19200	0.4604	4.604	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Chloroperlidae	36	360	0.058	0.58	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Leuctridae	12	120	0.0264	0.264	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Nemouridae	12	120	0.0248	0.248	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Perlodidae	20	200	0.16	1.6	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Apataniidae	4	40	0.0064	0.064	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Glossosomatidae	4	40	0.0164	0.164	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Limnephilidae	12	120	0.0012	0.012	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Rhyacophilidae	48	480	0.0476	0.476	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Ceratopogonidae	28	280	0.0092	0.092	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Chironomidae	20	200	0.01	0.1	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Empididae	4	40	0.0024	0.024	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Muscidae	4	40	0.0008	0.008	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Psychodidae	1048	10480	0.3012	3.012	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUCL	16-Sep-22	Pisidiidae	4	40	0.0004	0.004	RG_FOUCL_HESS-10_2022-09-16
	RG_FOUNGD	15-Sep-22	Nemata	4	40	0.0034	0.034	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Planariidae	7	70	0.0171	0.171	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Enchytraeidae	1	10	0.0006	0.006	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Lebertiidae	6	60	0.002	0.02	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Ostracoda	4	40	0.0013	0.013	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Ameletidae	1	10	0.0006	0.006	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Baetidae	2	20	0.0089	0.089	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Ephemerellidae	59	590	0.026	0.26	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Heptageniidae	140	1400	0.0705	0.705	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Chloroperlidae	14	140	0.0134	0.134	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Leuctridae	1	10	0.0006	0.006	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Nemouridae	3	30	0.0103	0.103	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Perlodidae	6	60	0.0217	0.217	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Taeniopterygidae	1	10	0.0001	0.001	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Trichoptera	1	10	0.0001	0.001	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Apataniidae	1	10	0.0003	0.003	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Glossosomatidae	2	20	0.0029	0.029	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Limnephilidae	16	160	0.0033	0.033	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Rhyacophilidae	16	160	0.1053	1.053	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Ceratopogonidae	15	150	0.0044	0.044	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Chironomidae	2	20	0.0016	0.016	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Empididae	3	30	0.0043	0.043	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Psychodidae	250	2500	0.0728	0.728	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Limoniidae	4	40	0.3391	3.391	RG_FOUNGD_HESS-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Planariidae	15	150	0.0359	0.359	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Lumbricidae	1	10	0.0073	0.073	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Lebertiidae	3	30	0.0005	0.005	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Ostracoda	3	30	0.0005	0.005	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Elmidae	2	20	0.0002	0.002	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Ameletidae	4	40	0.0164	0.164	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Baetidae	4	40	0.008	0.08	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Ephemerellidae	21	210	0.0135	0.135	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Heptageniidae	160	1600	0.059	0.59	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Leuctridae	2	20	0.0019	0.019	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Nemouridae	2	20	0.0079	0.079	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Perlodidae	7	70	0.0303	0.303	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Apataniidae	3	30	0.0009	0.009	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Glossosomatidae	1	10	0.0011	0.011	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Hydropsychidae	1	10	0.0672	0.672	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Limnephilidae	8	80	0.0006	0.006	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Rhyacophilidae	15	150	0.0509	0.509	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Ceratopogonidae	1	10	0.0001	0.001	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Chironomidae	2	20	0.0006	0.006	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Empididae	1	10	0.0029	0.029	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Psychodidae	127	1270	0.0308	0.308	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Limoniidae	1	10	0.0273	0.273	RG_FOUNGD_HESS-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Nemata	5	50	0.0017	0.017	RG_FOUNGD_HESS-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Planariidae	8	80	0.0074	0.074	RG_FOUNGD_HESS-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Naididae	1	10	0.0001	0.001	RG_FOUNGD_HESS-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Lebertiidae	3	30	0.001	0.01	RG_FOUNGD_HESS-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Ostracoda	16	160	0.0035	0.035	RG_FOUNGD_HESS-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Ameletidae	11	110	0.0185	0.185	RG_FOUNGD_HESS-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Baetidae	3	30	0.0036	0.036	RG_FOUNGD_HESS-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Ephemerellidae	13	130	0.0008	0.008	RG_FOUNGD_HESS-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Heptageniidae	157	1570	0.0324	0.324	RG_FOUNGD_HESS-3_2022-09-15
RG_FOUNGD	15-Sep-22	Chloroperlidae	11	110	0.0062	0.062	RG_FOUNGD_HESS-3_2022-09-15	
RG_FOUNGD	15-Sep-22	Leuctridae	4	40	0.0026	0.026	RG_FOUNGD_HESS-3_2022-09-15	
RG_FOUNGD	15-Sep-22	Nemouridae	1	10	0.0024	0.024	RG_FOUNGD_HESS-3_2022-09-15	
RG_FOUNGD	15-Sep-22	Perlodidae	4	40	0.0001	0.001	RG_FOUNGD_HESS-3_2022-09-15	
RG_FOUNGD	15-Sep-22	Taeniopterygidae	1	10	0.0001	0.001	RG_FOUNGD_HESS-3_2022-09-15	
RG_FOUNGD	15-Sep-22	Apataniidae	1	10	0.0001	0.001	RG_FOUNGD_HESS-3_2022-09-15	
RG_FOUNGD	15-Sep-22	Limnephilidae	5	50	0.0002	0.002	RG_FOUNGD_HESS-3_2022-09-15	
RG_FOUNGD	15-Sep-22	Rhyacophilidae	9	90	0.0033	0.033	RG_FOUNGD_HESS-3_2022-09-15	
RG_FOUNGD	15-Sep-22	Ceratopogonidae	2	20	0.0001	0.001	RG_FOUNGD_HESS-3_2022-09-15	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID
Mine-Exposed	RG_FOUNGD	15-Sep-22	Chironomidae	2	20	0.0001	0.001	RG_FOUNGD_HESS-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Psychodidae	265	2650	0.0597	0.597	RG_FOUNGD_HESS-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Stratiomyidae	1	10	0.006	0.06	RG_FOUNGD_HESS-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Limoniidae	2	20	0.0022	0.022	RG_FOUNGD_HESS-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Pisidiidae	1	10	0.0001	0.001	RG_FOUNGD_HESS-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Planariidae	1	10	0.0003	0.003	RG_FOUNGD_HESS-4_2022-09-15
	RG_FOUNGD	15-Sep-22	Lebertiidae	1	10	0.0001	0.001	RG_FOUNGD_HESS-4_2022-09-15
	RG_FOUNGD	15-Sep-22	Ostracoda	2	20	0.0004	0.004	RG_FOUNGD_HESS-4_2022-09-15
	RG_FOUNGD	15-Sep-22	Ameletidae	1	10	0.0001	0.001	RG_FOUNGD_HESS-4_2022-09-15
	RG_FOUNGD	15-Sep-22	Ephemerellidae	19	190	0.0131	0.131	RG_FOUNGD_HESS-4_2022-09-15
	RG_FOUNGD	15-Sep-22	Heptageniidae	126	1260	0.0821	0.821	RG_FOUNGD_HESS-4_2022-09-15
	RG_FOUNGD	15-Sep-22	Chloroperlidae	42	420	0.0391	0.391	RG_FOUNGD_HESS-4_2022-09-15
	RG_FOUNGD	15-Sep-22	Leuctridae	17	170	0.0153	0.153	RG_FOUNGD_HESS-4_2022-09-15
	RG_FOUNGD	15-Sep-22	Perlodidae	6	60	0.0103	0.103	RG_FOUNGD_HESS-4_2022-09-15
	RG_FOUNGD	15-Sep-22	Glossosomatidae	1	10	0.0001	0.001	RG_FOUNGD_HESS-4_2022-09-15
	RG_FOUNGD	15-Sep-22	Rhyacophilidae	11	110	0.0121	0.121	RG_FOUNGD_HESS-4_2022-09-15
	RG_FOUNGD	15-Sep-22	Ceratopogonidae	4	40	0.0009	0.009	RG_FOUNGD_HESS-4_2022-09-15
	RG_FOUNGD	15-Sep-22	Chironomidae	3	30	0.0001	0.001	RG_FOUNGD_HESS-4_2022-09-15
	RG_FOUNGD	15-Sep-22	Psychodidae	78	780	0.0195	0.195	RG_FOUNGD_HESS-4_2022-09-15
	RG_FOUNGD	15-Sep-22	Nemata	2	20	0.0022	0.022	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Planariidae	12	120	0.013	0.13	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Lebertiidae	16	160	0.005	0.05	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Ostracoda	24	240	0.0062	0.062	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Ameletidae	16	160	0.0058	0.058	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Ephemerellidae	36	360	0.0056	0.056	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Heptageniidae	150	1500	0.0374	0.374	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Capniidae	4	40	0.0002	0.002	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Chloroperlidae	1	10	0.0056	0.056	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Chloroperlidae	12	120	0.0176	0.176	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Leuctridae	10	100	0.0086	0.086	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Perlodidae	2	20	0.0155	0.155	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Perlodidae	2	20	0.0002	0.002	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Limnephilidae	6	60	0.0006	0.006	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Rhyacophilidae	4	40	0.0554	0.554	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Rhyacophilidae	12	120	0.0068	0.068	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Ceratopogonidae	2	20	0.0008	0.008	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Chironomidae	4	40	0.0002	0.002	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Psychodidae	446	4460	0.0786	0.786	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Limoniidae	4	40	0.0102	0.102	RG_FOUNGD_HESS-5_2022-09-15
	RG_FOUNGD	15-Sep-22	Planariidae	13	130	0.0173	0.173	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Lebertiidae	2	20	0.0006	0.006	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Ameletidae	1	10	0.0002	0.002	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Baetidae	4	40	0.0115	0.115	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Ephemerellidae	51	510	0.0647	0.647	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Heptageniidae	259	2590	0.1339	1.339	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Chloroperlidae	19	190	0.0162	0.162	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Nemouridae	4	40	0.0154	0.154	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Perlodidae	16	160	0.0694	0.694	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Glossosomatidae	2	20	0.0005	0.005	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Hydropsychidae	2	20	0.1633	1.633	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Rhyacophilidae	47	470	0.091	0.91	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Ceratopogonidae	19	190	0.0047	0.047	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Chironomidae	3	30	0.0005	0.005	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Empididae	2	20	0.0008	0.008	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Psychodidae	285	2850	0.0872	0.872	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Limoniidae	2	20	0.0557	0.557	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Pisidiidae	1	10	0.0003	0.003	RG_FOUNGD_HESS-6_2022-09-15
	RG_FOUNGD	15-Sep-22	Planariidae	36	360	0.027	0.27	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Lebertiidae	4	40	0.0012	0.012	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Ostracoda	12	120	0.0044	0.044	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Ameletidae	2	20	0.0208	0.208	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Baetidae	4	40	0.001	0.01	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Ephemerellidae	70	700	0.0224	0.224	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Heptageniidae	424	4240	0.1574	1.574	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Capniidae	2	20	0.0014	0.014	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Chloroperlidae	46	460	0.041	0.41	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Leuctridae	8	80	0.0098	0.098	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Nemouridae	10	100	0.0368	0.368	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Perlodidae	8	80	0.1498	1.498	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Perlodidae	10	100	0.009	0.09	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Glossosomatidae	4	40	0.0006	0.006	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Rhyacophilidae	3	30	0.0551	0.551	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Rhyacophilidae	36	360	0.0708	0.708	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Ceratopogonidae	24	240	0.0064	0.064	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Chironomidae	4	40	0.003	0.03	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Empididae	4	40	0.0018	0.018	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Psychodidae	344	3440	0.0998	0.998	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Simuliidae	2	20	0.006	0.06	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Limoniidae	1	10	0.1031	1.031	RG_FOUNGD_HESS-7_2022-09-15
	RG_FOUNGD	15-Sep-22	Limoniidae	4	40	0.0234	0.234	RG_FOUNGD_HESS-7_2022-09-15
RG_FOUNGD	15-Sep-22	Pisidiidae	2	20	0.001	0.01	RG_FOUNGD_HESS-7_2022-09-15	
RG_FOUNGD	15-Sep-22	Nemata	8	80	0.0064	0.064	RG_FOUNGD_HESS-8_2022-09-15	
RG_FOUNGD	15-Sep-22	Planariidae	19	190	0.0409	0.409	RG_FOUNGD_HESS-8_2022-09-15	
RG_FOUNGD	15-Sep-22	Lumbricidae	1	10	0.0387	0.387	RG_FOUNGD_HESS-8_2022-09-15	
RG_FOUNGD	15-Sep-22	Lebertiidae	4	40	0.0012	0.012	RG_FOUNGD_HESS-8_2022-09-15	
RG_FOUNGD	15-Sep-22	Ostracoda	14	140	0.0034	0.034	RG_FOUNGD_HESS-8_2022-09-15	
RG_FOUNGD	15-Sep-22	Ameletidae	4	40	0.0018	0.018	RG_FOUNGD_HESS-8_2022-09-15	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID
Mine-Exposed	RG_FOUNGD	15-Sep-22	Baetidae	7	70	0.0221	0.221	RG_FOUNGD_HESS-8_2022-09-15
	RG_FOUNGD	15-Sep-22	Ephemereillidae	12	120	0.0083	0.083	RG_FOUNGD_HESS-8_2022-09-15
	RG_FOUNGD	15-Sep-22	Heptageniidae	321	3210	0.1209	1.209	RG_FOUNGD_HESS-8_2022-09-15
	RG_FOUNGD	15-Sep-22	Chloroperlidae	21	210	0.0331	0.331	RG_FOUNGD_HESS-8_2022-09-15
	RG_FOUNGD	15-Sep-22	Leuctridae	1	10	0.0009	0.009	RG_FOUNGD_HESS-8_2022-09-15
	RG_FOUNGD	15-Sep-22	Nemouridae	4	40	0.0098	0.098	RG_FOUNGD_HESS-8_2022-09-15
	RG_FOUNGD	15-Sep-22	Perlodidae	5	50	0.0161	0.161	RG_FOUNGD_HESS-8_2022-09-15
	RG_FOUNGD	15-Sep-22	Apataniidae	3	30	0.0023	0.023	RG_FOUNGD_HESS-8_2022-09-15
	RG_FOUNGD	15-Sep-22	Glossosomatidae	2	20	0.0004	0.004	RG_FOUNGD_HESS-8_2022-09-15
	RG_FOUNGD	15-Sep-22	Limnephilidae	4	40	0.001	0.01	RG_FOUNGD_HESS-8_2022-09-15
	RG_FOUNGD	15-Sep-22	Rhyacophilidae	24	240	0.1122	1.122	RG_FOUNGD_HESS-8_2022-09-15
	RG_FOUNGD	15-Sep-22	Ceratopogonidae	3	30	0.0007	0.007	RG_FOUNGD_HESS-8_2022-09-15
	RG_FOUNGD	15-Sep-22	Chironomidae	1	10	0.0001	0.001	RG_FOUNGD_HESS-8_2022-09-15
	RG_FOUNGD	15-Sep-22	Empididae	1	10	0.0004	0.004	RG_FOUNGD_HESS-8_2022-09-15
	RG_FOUNGD	15-Sep-22	Psychodidae	333	3330	0.0874	0.874	RG_FOUNGD_HESS-8_2022-09-15
	RG_FOUNGD	15-Sep-22	Limoniidae	2	20	0.2999	2.999	RG_FOUNGD_HESS-8_2022-09-15
	RG_FOUNGD	15-Sep-22	Nemata	2	20	0.0018	0.018	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Planariidae	18	180	0.0396	0.396	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Enchytraeidae	6	60	0.0006	0.006	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Trombidiformes	2	20	0.0002	0.002	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Lebertiidae	8	80	0.0014	0.014	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Ostracoda	20	200	0.0046	0.046	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Elmidae	2	20	0.001	0.01	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Ameletidae	4	40	0.006	0.06	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Ephemereillidae	20	200	0.0156	0.156	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Heptageniidae	284	2840	0.1016	1.016	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Chloroperlidae	28	280	0.0544	0.544	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Leuctridae	2	20	0.0006	0.006	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Nemouridae	6	60	0.0118	0.118	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Perlodidae	1	10	0.0173	0.173	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Perlodidae	12	120	0.1462	1.462	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Taeniopterygidae	2	20	0.0006	0.006	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Apataniidae	4	40	0.0024	0.024	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Hydropsychidae	1	10	0.1047	1.047	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Hydroptilidae	2	20	0.0006	0.006	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Limnephilidae	4	40	0.0014	0.014	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Rhyacophilidae	8	80	0.0178	0.178	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Ceratopogonidae	4	40	0.001	0.01	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Chironomidae	4	40	0.0024	0.024	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Psychodidae	918	9180	0.2326	2.326	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Limoniidae	1	10	0.3638	3.638	RG_FOUNGD_HESS-9_2022-09-15
	RG_FOUNGD	15-Sep-22	Nemata	1	10	0.0328	0.328	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Planariidae	10	100	0.006	0.06	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Lumbricidae	1	10	0.0642	0.642	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Lebertiidae	6	60	0.0006	0.006	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Ostracoda	30	300	0.0084	0.084	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Ameletidae	4	40	0.0008	0.008	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Baetidae	4	40	0.012	0.12	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Ephemereillidae	34	340	0.0094	0.094	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Heptageniidae	262	2620	0.1226	1.226	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Chloroperlidae	22	220	0.0516	0.516	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Nemouridae	8	80	0.0164	0.164	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Perlodidae	4	40	0.0471	0.471	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Perlodidae	14	140	0.0188	0.188	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Apataniidae	4	40	0.001	0.01	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Limnephilidae	16	160	0.0056	0.056	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Rhyacophilidae	1	10	0.0174	0.174	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Rhyacophilidae	20	200	0.027	0.27	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Ceratopogonidae	2	20	0.0002	0.002	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Chironomidae	2	20	0.0006	0.006	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Psychodidae	780	7800	0.2212	2.212	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Stratiomyidae	2	20	0.0002	0.002	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Limoniidae	2	20	0.0014	0.014	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUNGD	15-Sep-22	Pisidiidae	10	100	0.0014	0.014	RG_FOUNGD_HESS-10_2022-09-15
	RG_FOUKI	13-Sep-22	Nemata	1	10	0.0001	0.001	RG_FOUKI_HESS-1_2022-09-13
	RG_FOUKI	13-Sep-22	Planariidae	2	20	0.0023	0.023	RG_FOUKI_HESS-1_2022-09-13
	RG_FOUKI	13-Sep-22	Enchytraeidae	3	30	0.0011	0.011	RG_FOUKI_HESS-1_2022-09-13
	RG_FOUKI	13-Sep-22	Naididae	15	150	0.0027	0.027	RG_FOUKI_HESS-1_2022-09-13
	RG_FOUKI	13-Sep-22	Lebertiidae	1	10	0.0001	0.001	RG_FOUKI_HESS-1_2022-09-13
	RG_FOUKI	13-Sep-22	Ostracoda	3	30	0.0007	0.007	RG_FOUKI_HESS-1_2022-09-13
	RG_FOUKI	13-Sep-22	Elmidae	2	20	0.0007	0.007	RG_FOUKI_HESS-1_2022-09-13
	RG_FOUKI	13-Sep-22	Ameletidae	1	10	0.003	0.03	RG_FOUKI_HESS-1_2022-09-13
	RG_FOUKI	13-Sep-22	Baetidae	3	30	0.0104	0.104	RG_FOUKI_HESS-1_2022-09-13
	RG_FOUKI	13-Sep-22	Ephemereillidae	8	80	0.0117	0.117	RG_FOUKI_HESS-1_2022-09-13
	RG_FOUKI	13-Sep-22	Heptageniidae	152	1520	0.1145	1.145	RG_FOUKI_HESS-1_2022-09-13
	RG_FOUKI	13-Sep-22	Capniidae	2	20	0.0027	0.027	RG_FOUKI_HESS-1_2022-09-13
	RG_FOUKI	13-Sep-22	Chloroperlidae	1	10	0.0001	0.001	RG_FOUKI_HESS-1_2022-09-13
	RG_FOUKI	13-Sep-22	Nemouridae	1	10	0.0054	0.054	RG_FOUKI_HESS-1_2022-09-13
RG_FOUKI	13-Sep-22	Perlodidae	7	70	0.0331	0.331	RG_FOUKI_HESS-1_2022-09-13	
RG_FOUKI	13-Sep-22	Taeniopterygidae	1	10	0.0001	0.001	RG_FOUKI_HESS-1_2022-09-13	
RG_FOUKI	13-Sep-22	Apataniidae	1	10	0.0004	0.004	RG_FOUKI_HESS-1_2022-09-13	
RG_FOUKI	13-Sep-22	Glossosomatidae	1	10	0.0026	0.026	RG_FOUKI_HESS-1_2022-09-13	
RG_FOUKI	13-Sep-22	Hydropsychidae	1	10	0.0013	0.013	RG_FOUKI_HESS-1_2022-09-13	
RG_FOUKI	13-Sep-22	Rhyacophilidae	4	40	0.035	0.35	RG_FOUKI_HESS-1_2022-09-13	
RG_FOUKI	13-Sep-22	Ceratopogonidae	5	50	0.0018	0.018	RG_FOUKI_HESS-1_2022-09-13	
RG_FOUKI	13-Sep-22	Chironomidae	27	270	0.0194	0.194	RG_FOUKI_HESS-1_2022-09-13	
RG_FOUKI	13-Sep-22	Empididae	5	50	0.0078	0.078	RG_FOUKI_HESS-1_2022-09-13	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID	
Mine-Exposed	RG_FOUKI	13-Sep-22	Psychodidae	397	3970	0.1401	1.401	RG_FOUKI_HESS-1_2022-09-13
	RG_FOUKI	13-Sep-22	Simuliidae	1	10	0.002	0.02	RG_FOUKI_HESS-1_2022-09-13
	RG_FOUKI	13-Sep-22	Pisidiidae	1	10	0.0017	0.017	RG_FOUKI_HESS-1_2022-09-13
	RG_FOUKI	13-Sep-22	Nemata	2	20	0.0002	0.002	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Planariidae	10	100	0.0398	0.398	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Planariidae	1	10	0.0172	0.172	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Enchytraeidae	2	20	0.0014	0.014	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Lumbricidae	1	10	0.1187	1.187	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Naididae	66	660	0.006	0.06	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Lebertiidae	24	240	0.0094	0.094	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Ostracoda	32	320	0.0078	0.078	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Elmidae	6	60	0.0036	0.036	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Baetidae	2	20	0.0084	0.084	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Ephemerellidae	10	100	0.007	0.07	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Heptageniidae	1	10	0.0084	0.084	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Heptageniidae	342	3420	0.1116	1.116	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Capniidae	4	40	0.0024	0.024	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Chloroperlidae	2	20	0.0014	0.014	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Perlodidae	2	20	0.0072	0.072	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Apataniidae	8	80	0.006	0.06	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Hydropsychidae	2	20	0.0012	0.012	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Hydroptilidae	2	20	0.0004	0.004	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Limnephilidae	4	40	0.0012	0.012	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Rhyacophilidae	1	10	0.0115	0.115	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Rhyacophilidae	2	20	0.0192	0.192	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Ceratopogonidae	16	160	0.006	0.06	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Chironomidae	44	440	0.046	0.46	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Empididae	20	200	0.0436	0.436	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Psychodidae	1052	10520	0.3422	3.422	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Pisidiidae	2	20	0.0016	0.016	RG_FOUKI_HESS-2_2022-09-13
	RG_FOUKI	13-Sep-22	Nemata	6	60	0.003	0.03	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Planariidae	10	100	0.0492	0.492	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Naididae	54	540	0.006	0.06	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Lebertiidae	14	140	0.0034	0.034	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Ostracoda	26	260	0.0044	0.044	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Elmidae	2	20	0.0002	0.002	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Baetidae	2	20	0.0168	0.168	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Ephemerellidae	14	140	0.0152	0.152	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Heptageniidae	504	5040	0.2094	2.094	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Capniidae	2	20	0.005	0.05	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Chloroperlidae	6	60	0.0158	0.158	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Nemouridae	8	80	0.029	0.29	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Perlodidae	8	80	0.2222	2.222	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Apataniidae	6	60	0.0034	0.034	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Glossosomatidae	20	200	0.0022	0.022	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Rhyacophilidae	12	120	0.0492	0.492	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Ceratopogonidae	20	200	0.0024	0.024	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Chironomidae	70	700	0.074	0.74	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Psychodidae	1578	15780	0.5518	5.518	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Pisidiidae	2	20	0.0002	0.002	RG_FOUKI_HESS-3_2022-09-13
	RG_FOUKI	13-Sep-22	Nemata	2	20	0.0044	0.044	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Planariidae	6	60	0.0068	0.068	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Naididae	60	600	0.007	0.07	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Lebertiidae	16	160	0.0036	0.036	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Sperchontidae	2	20	0.001	0.01	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Ostracoda	2	20	0.0002	0.002	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Ameletidae	2	20	0.0134	0.134	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Baetidae	4	40	0.0158	0.158	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Ephemerellidae	10	100	0.0086	0.086	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Heptageniidae	354	3540	0.1498	1.498	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Capniidae	6	60	0.005	0.05	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Nemouridae	2	20	0.0062	0.062	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Perlodidae	8	80	0.2521	2.521	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Perlodidae	6	60	0.0028	0.028	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Taeniopterygidae	2	20	0.001	0.01	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Apataniidae	2	20	0.0018	0.018	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Rhyacophilidae	1	10	0.0223	0.223	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Rhyacophilidae	14	140	0.039	0.39	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Ceratopogonidae	10	100	0.0054	0.054	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Chironomidae	64	640	0.0268	0.268	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Empididae	6	60	0.0128	0.128	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Psychodidae	812	8120	0.2772	2.772	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Pisidiidae	2	20	0.0012	0.012	RG_FOUKI_HESS-4_2022-09-13
	RG_FOUKI	13-Sep-22	Nemata	2	20	0.0018	0.018	RG_FOUKI_HESS-5_2022-09-13
	RG_FOUKI	13-Sep-22	Planariidae	8	80	0.055	0.55	RG_FOUKI_HESS-5_2022-09-13
	RG_FOUKI	13-Sep-22	Enchytraeidae	4	40	0.0014	0.014	RG_FOUKI_HESS-5_2022-09-13
	RG_FOUKI	13-Sep-22	Naididae	22	220	0.0086	0.086	RG_FOUKI_HESS-5_2022-09-13
	RG_FOUKI	13-Sep-22	Lebertiidae	12	120	0.0044	0.044	RG_FOUKI_HESS-5_2022-09-13
RG_FOUKI	13-Sep-22	Ostracoda	6	60	0.0026	0.026	RG_FOUKI_HESS-5_2022-09-13	
RG_FOUKI	13-Sep-22	Baetidae	6	60	0.0256	0.256	RG_FOUKI_HESS-5_2022-09-13	
RG_FOUKI	13-Sep-22	Ephemerellidae	10	100	0.0384	0.384	RG_FOUKI_HESS-5_2022-09-13	
RG_FOUKI	13-Sep-22	Heptageniidae	2	20	0.307	3.07	RG_FOUKI_HESS-5_2022-09-13	
RG_FOUKI	13-Sep-22	Heptageniidae	356	3560	0.1158	1.158	RG_FOUKI_HESS-5_2022-09-13	
RG_FOUKI	13-Sep-22	Capniidae	14	140	0.028	0.28	RG_FOUKI_HESS-5_2022-09-13	
RG_FOUKI	13-Sep-22	Chloroperlidae	4	40	0.028	0.28	RG_FOUKI_HESS-5_2022-09-13	
RG_FOUKI	13-Sep-22	Nemouridae	2	20	0.0002	0.002	RG_FOUKI_HESS-5_2022-09-13	
RG_FOUKI	13-Sep-22	Perlodidae	3	30	0.1935	1.935	RG_FOUKI_HESS-5_2022-09-13	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID
Mine-Exposed	RG_FOUKI	13-Sep-22	Perlodidae	4	40	0.0104	0.104	RG_FOUKI_HESS-5_2022-09-13
	RG_FOUKI	13-Sep-22	Taeniopterygidae	2	20	0.0004	0.004	RG_FOUKI_HESS-5_2022-09-13
	RG_FOUKI	13-Sep-22	Glossosomatidae	4	40	0.0012	0.012	RG_FOUKI_HESS-5_2022-09-13
	RG_FOUKI	13-Sep-22	Hydropsychidae	12	120	0.0406	0.406	RG_FOUKI_HESS-5_2022-09-13
	RG_FOUKI	13-Sep-22	Rhyacophilidae	10	100	0.058	0.58	RG_FOUKI_HESS-5_2022-09-13
	RG_FOUKI	13-Sep-22	Ceratopogonidae	2	20	0.0022	0.022	RG_FOUKI_HESS-5_2022-09-13
	RG_FOUKI	13-Sep-22	Chironomidae	42	420	0.0248	0.248	RG_FOUKI_HESS-5_2022-09-13
	RG_FOUKI	13-Sep-22	Empididae	2	20	0.0064	0.064	RG_FOUKI_HESS-5_2022-09-13
	RG_FOUKI	13-Sep-22	Psychodidae	812	8120	0.2506	2.506	RG_FOUKI_HESS-5_2022-09-13
	RG_FOUKI	13-Sep-22	Nemata	2	20	0.0034	0.034	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Planariidae	6	60	0.028	0.28	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Naididae	24	240	0.0026	0.026	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Lebertiidae	6	60	0.0018	0.018	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Ostracoda	6	60	0.0018	0.018	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Baetidae	4	40	0.0164	0.164	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Ephemerellidae	6	60	0.0068	0.068	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Heptageniidae	3	30	0.0217	0.217	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Heptageniidae	322	3220	0.053	0.53	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Capniidae	2	20	0.0024	0.024	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Chloroperlidae	2	20	0.002	0.02	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Perlodidae	7	70	0.1296	1.296	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Perlodidae	4	40	0.0012	0.012	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Trichoptera	2	20	0.0004	0.004	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Glossosomatidae	2	20	0.0002	0.002	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Hydropsychidae	2	20	0.0002	0.002	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Rhyacophilidae	1	10	0.0176	0.176	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Chironomidae	50	500	0.015	0.15	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Empididae	2	20	0.0052	0.052	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Psychodidae	444	4440	0.1454	1.454	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Limoniidae	1	10	0.3053	3.053	RG_FOUKI_HESS-6_2022-09-13
	RG_FOUKI	13-Sep-22	Nemata	4	40	0.0038	0.038	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Planariidae	12	120	0.0304	0.304	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Enchytraeidae	6	60	0.001	0.01	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Naididae	78	780	0.0092	0.092	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Lebertiidae	26	260	0.008	0.08	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Ostracoda	18	180	0.0056	0.056	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Collembola	2	20	0.0004	0.004	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Ameletidae	2	20	0.0104	0.104	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Baetidae	4	40	0.0066	0.066	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Ephemerellidae	32	320	0.0244	0.244	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Heptageniidae	276	2760	0.1436	1.436	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Capniidae	6	60	0.0032	0.032	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Nemouridae	2	20	0.0004	0.004	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Perlodidae	8	80	0.026	0.26	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Apataniidae	2	20	0.0006	0.006	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Hydroptilidae	4	40	0.001	0.01	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Rhyacophilidae	2	20	0.0402	0.402	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Uenoidae	2	20	0.0002	0.002	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Ceratopogonidae	10	100	0.0032	0.032	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Chironomidae	50	500	0.0284	0.284	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Empididae	22	220	0.05	0.5	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Psychodidae	704	7040	0.1774	1.774	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Pisidiidae	2	20	0.0008	0.008	RG_FOUKI_HESS-7_2022-09-13
	RG_FOUKI	13-Sep-22	Nemata	2	20	0.0004	0.004	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Planariidae	6	60	0.0026	0.026	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Enchytraeidae	4	40	0.0018	0.018	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Naididae	32	320	0.0034	0.034	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Lebertiidae	4	40	0.001	0.01	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Sperchontidae	2	20	0.0004	0.004	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Ostracoda	12	120	0.003	0.03	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Elmidae	2	20	0.001	0.01	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Baetidae	8	80	0.0236	0.236	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Ephemerellidae	8	80	0.0166	0.166	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Heptageniidae	454	4540	0.215	2.15	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Capniidae	2	20	0.0016	0.016	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Chloroperlidae	4	40	0.0218	0.218	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Nemouridae	2	20	0.0014	0.014	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Perlodidae	10	100	0.12	1.2	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Brachycentridae	2	20	0.001	0.01	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Glossosomatidae	8	80	0.0008	0.008	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Rhyacophilidae	6	60	0.0092	0.092	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Ceratopogonidae	10	100	0.0056	0.056	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Chironomidae	20	200	0.0044	0.044	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Empididae	4	40	0.0068	0.068	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Psychodidae	1060	10600	0.5224	5.224	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Limoniidae	2	20	0.002	0.02	RG_FOUKI_HESS-8_2022-09-13
	RG_FOUKI	13-Sep-22	Nemata	4	40	0.0018	0.018	RG_FOUKI_HESS-9_2022-09-13
	RG_FOUKI	13-Sep-22	Planariidae	12	120	0.0414	0.414	RG_FOUKI_HESS-9_2022-09-13
RG_FOUKI	13-Sep-22	Naididae	106	1060	0.0074	0.074	RG_FOUKI_HESS-9_2022-09-13	
RG_FOUKI	13-Sep-22	Lebertiidae	16	160	0.0056	0.056	RG_FOUKI_HESS-9_2022-09-13	
RG_FOUKI	13-Sep-22	Ostracoda	6	60	0.0018	0.018	RG_FOUKI_HESS-9_2022-09-13	
RG_FOUKI	13-Sep-22	Ameletidae	2	20	0.0194	0.194	RG_FOUKI_HESS-9_2022-09-13	
RG_FOUKI	13-Sep-22	Ephemerellidae	8	80	0.003	0.03	RG_FOUKI_HESS-9_2022-09-13	
RG_FOUKI	13-Sep-22	Heptageniidae	3	30	0.0209	0.209	RG_FOUKI_HESS-9_2022-09-13	
RG_FOUKI	13-Sep-22	Heptageniidae	438	4380	0.178	1.78	RG_FOUKI_HESS-9_2022-09-13	
RG_FOUKI	13-Sep-22	Capniidae	6	60	0.0042	0.042	RG_FOUKI_HESS-9_2022-09-13	
RG_FOUKI	13-Sep-22	Chloroperlidae	1	10	0.0037	0.037	RG_FOUKI_HESS-9_2022-09-13	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID
Mine-Exposed	RG_FOUKI	13-Sep-22	Chloroperlidae	2	20	0.0018	0.018	RG_FOUKI_HESS-9_2022-09-13
	RG_FOUKI	13-Sep-22	Nemouridae	1	10	0.0065	0.065	RG_FOUKI_HESS-9_2022-09-13
	RG_FOUKI	13-Sep-22	Nemouridae	2	20	0.0034	0.034	RG_FOUKI_HESS-9_2022-09-13
	RG_FOUKI	13-Sep-22	Perlodidae	10	100	0.1499	1.499	RG_FOUKI_HESS-9_2022-09-13
	RG_FOUKI	13-Sep-22	Perlodidae	2	20	0.0014	0.014	RG_FOUKI_HESS-9_2022-09-13
	RG_FOUKI	13-Sep-22	Taeniopterygidae	4	40	0.001	0.01	RG_FOUKI_HESS-9_2022-09-13
	RG_FOUKI	13-Sep-22	Rhyacophilidae	1	10	0.0116	0.116	RG_FOUKI_HESS-9_2022-09-13
	RG_FOUKI	13-Sep-22	Rhyacophilidae	2	20	0.002	0.02	RG_FOUKI_HESS-9_2022-09-13
	RG_FOUKI	13-Sep-22	Ceratopogonidae	10	100	0.0058	0.058	RG_FOUKI_HESS-9_2022-09-13
	RG_FOUKI	13-Sep-22	Chironomidae	30	300	0.0198	0.198	RG_FOUKI_HESS-9_2022-09-13
	RG_FOUKI	13-Sep-22	Empididae	4	40	0.0096	0.096	RG_FOUKI_HESS-9_2022-09-13
	RG_FOUKI	13-Sep-22	Pelecorhyncidae	2	20	0.0076	0.076	RG_FOUKI_HESS-9_2022-09-13
	RG_FOUKI	13-Sep-22	Psychodidae	890	8900	0.2972	2.972	RG_FOUKI_HESS-9_2022-09-13
	RG_FOUKI	13-Sep-22	Limoniidae	1	10	0.2276	2.276	RG_FOUKI_HESS-9_2022-09-13
	RG_FOUKI	13-Sep-22	Nemata	4	40	0.004	0.04	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Planariidae	14	140	0.0312	0.312	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Enchytraeidae	2	20	0.0002	0.002	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Naididae	128	1280	0.0096	0.096	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Lebertiidae	54	540	0.0214	0.214	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Ostracoda	12	120	0.0026	0.026	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Dytiscidae	2	20	0.0208	0.208	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Ameletidae	6	60	0.027	0.27	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Ephemerellidae	24	240	0.0342	0.342	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Heptageniidae	378	3780	0.121	1.21	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Capniidae	4	40	0.0032	0.032	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Chloroperlidae	2	20	0.0142	0.142	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Perlodidae	7	70	0.1725	1.725	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Perlodidae	8	80	0.0026	0.026	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Hydropsychidae	3	30	0.2576	2.576	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Rhyacophilidae	1	10	0.0199	0.199	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Rhyacophilidae	2	20	0.0186	0.186	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Ceratopogonidae	22	220	0.0082	0.082	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Chironomidae	176	1760	0.0462	0.462	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Empididae	34	340	0.0798	0.798	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Psychodidae	1064	10640	0.2958	2.958	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Limoniidae	1	10	0.1396	1.396	RG_FOUKI_HESS-10_2022-09-13
	RG_FOUKI	13-Sep-22	Pisidiidae	2	20	0.0002	0.002	RG_FOUKI_HESS-10_2022-09-13
	RG_FOBKS	12-Sep-22	Nemata	3	30	0.0028	0.028	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Planariidae	6	60	0.0021	0.021	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Enchytraeidae	1	10	0.0002	0.002	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Naididae	10	100	0.0017	0.017	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Lebertiidae	4	40	0.0016	0.016	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Ostracoda	1	10	0.0001	0.001	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Elmidae	1	10	0.0001	0.001	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Baetidae	3	30	0.0057	0.057	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Ephemerellidae	5	50	0.0032	0.032	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Heptageniidae	142	1420	0.1118	1.118	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Chloroperlidae	1	10	0.0004	0.004	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Nemouridae	4	40	0.0005	0.005	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Perlidae	3	30	0.4933	4.933	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Perlodidae	5	50	0.0342	0.342	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Taeniopterygidae	4	40	0.0001	0.001	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Glossosomatidae	4	40	0.0151	0.151	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Hydropsychidae	2	20	0.0048	0.048	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Rhyacophilidae	3	30	0.0072	0.072	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Ceratopogonidae	4	40	0.0009	0.009	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Chironomidae	3	30	0.0037	0.037	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Empididae	2	20	0.0005	0.005	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Psychodidae	108	1080	0.034	0.34	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Pisidiidae	1	10	0.0001	0.001	RG_FOBKS_HESS-1_2022-09-12
	RG_FOBKS	12-Sep-22	Enchytraeidae	7	70	0.0016	0.016	RG_FOBKS_HESS-2_2022-09-12
	RG_FOBKS	12-Sep-22	Naididae	17	170	0.001	0.01	RG_FOBKS_HESS-2_2022-09-12
	RG_FOBKS	12-Sep-22	Lebertiidae	5	50	0.0015	0.015	RG_FOBKS_HESS-2_2022-09-12
	RG_FOBKS	12-Sep-22	Ostracoda	1	10	0.0003	0.003	RG_FOBKS_HESS-2_2022-09-12
	RG_FOBKS	12-Sep-22	Elmidae	1	10	0.0001	0.001	RG_FOBKS_HESS-2_2022-09-12
	RG_FOBKS	12-Sep-22	Baetidae	2	20	0.0094	0.094	RG_FOBKS_HESS-2_2022-09-12
	RG_FOBKS	12-Sep-22	Ephemerellidae	4	40	0.0039	0.039	RG_FOBKS_HESS-2_2022-09-12
	RG_FOBKS	12-Sep-22	Heptageniidae	163	1630	0.0561	0.561	RG_FOBKS_HESS-2_2022-09-12
	RG_FOBKS	12-Sep-22	Chloroperlidae	1	10	0.0001	0.001	RG_FOBKS_HESS-2_2022-09-12
	RG_FOBKS	12-Sep-22	Nemouridae	1	10	0.0001	0.001	RG_FOBKS_HESS-2_2022-09-12
	RG_FOBKS	12-Sep-22	Perlodidae	9	90	0.082	0.82	RG_FOBKS_HESS-2_2022-09-12
	RG_FOBKS	12-Sep-22	Taeniopterygidae	4	40	0.0004	0.004	RG_FOBKS_HESS-2_2022-09-12
	RG_FOBKS	12-Sep-22	Rhyacophilidae	5	50	0.0348	0.348	RG_FOBKS_HESS-2_2022-09-12
	RG_FOBKS	12-Sep-22	Ceratopogonidae	3	30	0.0004	0.004	RG_FOBKS_HESS-2_2022-09-12
	RG_FOBKS	12-Sep-22	Chironomidae	5	50	0.0047	0.047	RG_FOBKS_HESS-2_2022-09-12
	RG_FOBKS	12-Sep-22	Empididae	2	20	0.0041	0.041	RG_FOBKS_HESS-2_2022-09-12
	RG_FOBKS	12-Sep-22	Psychodidae	78	780	0.0197	0.197	RG_FOBKS_HESS-2_2022-09-12
	RG_FOBKS	12-Sep-22	Pisidiidae	2	20	0.0003	0.003	RG_FOBKS_HESS-2_2022-09-12
RG_FOBKS	12-Sep-22	Nemata	1	10	0.0001	0.001	RG_FOBKS_HESS-3_2022-09-12	
RG_FOBKS	12-Sep-22	Planariidae	1	10	0.0003	0.003	RG_FOBKS_HESS-3_2022-09-12	
RG_FOBKS	12-Sep-22	Enchytraeidae	5	50	0.0014	0.014	RG_FOBKS_HESS-3_2022-09-12	
RG_FOBKS	12-Sep-22	Naididae	16	160	0.0005	0.005	RG_FOBKS_HESS-3_2022-09-12	
RG_FOBKS	12-Sep-22	Lebertiidae	13	130	0.0039	0.039	RG_FOBKS_HESS-3_2022-09-12	
RG_FOBKS	12-Sep-22	Ostracoda	5	50	0.001	0.01	RG_FOBKS_HESS-3_2022-09-12	
RG_FOBKS	12-Sep-22	Ameletidae	1	10	0.0116	0.116	RG_FOBKS_HESS-3_2022-09-12	
RG_FOBKS	12-Sep-22	Baetidae	2	20	0.0076	0.076	RG_FOBKS_HESS-3_2022-09-12	
RG_FOBKS	12-Sep-22	Ephemerellidae	7	70	0.0035	0.035	RG_FOBKS_HESS-3_2022-09-12	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID	
Mine-Exposed	RG_FOBKS	12-Sep-22	Heptageniidae	200	2000	0.0671	0.671	RG_FOBKS_HESS-3_2022-09-12
	RG_FOBKS	12-Sep-22	Chloroperlidae	2	20	0.0028	0.028	RG_FOBKS_HESS-3_2022-09-12
	RG_FOBKS	12-Sep-22	Nemouridae	1	10	0.0005	0.005	RG_FOBKS_HESS-3_2022-09-12
	RG_FOBKS	12-Sep-22	Perlodidae	5	50	0.0379	0.379	RG_FOBKS_HESS-3_2022-09-12
	RG_FOBKS	12-Sep-22	Apataniidae	3	30	0.0016	0.016	RG_FOBKS_HESS-3_2022-09-12
	RG_FOBKS	12-Sep-22	Brachycentridae	1	10	0.0001	0.001	RG_FOBKS_HESS-3_2022-09-12
	RG_FOBKS	12-Sep-22	Glossosomatidae	2	20	0.0007	0.007	RG_FOBKS_HESS-3_2022-09-12
	RG_FOBKS	12-Sep-22	Rhyacophilidae	4	40	0.0047	0.047	RG_FOBKS_HESS-3_2022-09-12
	RG_FOBKS	12-Sep-22	Ceratopogonidae	3	30	0.001	0.01	RG_FOBKS_HESS-3_2022-09-12
	RG_FOBKS	12-Sep-22	Chironomidae	5	50	0.0016	0.016	RG_FOBKS_HESS-3_2022-09-12
	RG_FOBKS	12-Sep-22	Empididae	4	40	0.0075	0.075	RG_FOBKS_HESS-3_2022-09-12
	RG_FOBKS	12-Sep-22	Psychodidae	285	2850	0.0554	0.554	RG_FOBKS_HESS-3_2022-09-12
	RG_FOBKS	12-Sep-22	Nemata	1	10	0.0011	0.011	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Planariidae	1	10	0.0047	0.047	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Enchytraeidae	1	10	0.0001	0.001	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Naididae	19	190	0.002	0.02	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Lebertiidae	4	40	0.0005	0.005	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Ostracoda	1	10	0.0001	0.001	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Elmidae	1	10	0.0009	0.009	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Baetidae	1	10	0.0034	0.034	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Ephemerellidae	3	30	0.0026	0.026	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Heptageniidae	195	1950	0.0867	0.867	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Nemouridae	2	20	0.0015	0.015	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Perlodidae	9	90	0.0669	0.669	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Taeniopterygidae	2	20	0.0001	0.001	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Rhyacophilidae	2	20	0.0086	0.086	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Ceratopogonidae	6	60	0.0016	0.016	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Empididae	1	10	0.0001	0.001	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Chironomidae	5	50	0.0036	0.036	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Psychodidae	240	2400	0.0835	0.835	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Limoniidae	1	10	0.0004	0.004	RG_FOBKS_HESS-4_2022-09-12
	RG_FOBKS	12-Sep-22	Nemata	5	50	0.0038	0.038	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Planariidae	2	20	0.0006	0.006	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Enchytraeidae	41	410	0.0157	0.157	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Naididae	24	240	0.0017	0.017	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Lebertiidae	2	20	0.0005	0.005	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Ostracoda	2	20	0.0005	0.005	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Baetidae	1	10	0.0029	0.029	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Ephemerellidae	13	130	0.0064	0.064	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Heptageniidae	256	2560	0.1175	1.175	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Chloroperlidae	2	20	0.0018	0.018	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Nemouridae	4	40	0.0081	0.081	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Perlodidae	18	180	0.0448	0.448	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Taeniopterygidae	3	30	0.0004	0.004	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Glossosomatidae	5	50	0.0012	0.012	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Hydropsychidae	11	110	0.028	0.28	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Limnephilidae	1	10	0.0001	0.001	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Rhyacophilidae	9	90	0.044	0.44	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Ceratopogonidae	6	60	0.0015	0.015	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Chironomidae	18	180	0.007	0.07	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Empididae	3	30	0.0041	0.041	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Psychodidae	256	2560	0.0597	0.597	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Limoniidae	1	10	0.0005	0.005	RG_FOBKS_HESS-5_2022-09-12
	RG_FOBKS	12-Sep-22	Nemata	1	10	0.0014	0.014	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Planariidae	1	10	0.0024	0.024	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Enchytraeidae	2	20	0.0001	0.001	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Naididae	11	110	0.0021	0.021	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Lebertiidae	1	10	0.0001	0.001	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Ostracoda	2	20	0.0003	0.003	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Ephemerellidae	3	30	0.0013	0.013	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Heptageniidae	132	1320	0.0707	0.707	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Capniidae	1	10	0.0001	0.001	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Chloroperlidae	1	10	0.0006	0.006	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Nemouridae	2	20	0.0039	0.039	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Perlodidae	12	120	0.0739	0.739	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Taeniopterygidae	2	20	0.0001	0.001	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Hydropsychidae	2	20	0.0052	0.052	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Rhyacophilidae	2	20	0.0015	0.015	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Chironomidae	9	90	0.0039	0.039	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Empididae	3	30	0.0038	0.038	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Psychodidae	50	500	0.0103	0.103	RG_FOBKS_HESS-6_2022-09-12
	RG_FOBKS	12-Sep-22	Nemata	1	10	0.0006	0.006	RG_FOBKS_HESS-7_2022-09-12
	RG_FOBKS	12-Sep-22	Planariidae	1	10	0.0072	0.072	RG_FOBKS_HESS-7_2022-09-12
	RG_FOBKS	12-Sep-22	Enchytraeidae	5	50	0.0012	0.012	RG_FOBKS_HESS-7_2022-09-12
	RG_FOBKS	12-Sep-22	Naididae	9	90	0.0005	0.005	RG_FOBKS_HESS-7_2022-09-12
	RG_FOBKS	12-Sep-22	Lebertiidae	9	90	0.0023	0.023	RG_FOBKS_HESS-7_2022-09-12
	RG_FOBKS	12-Sep-22	Ostracoda	2	20	0.0004	0.004	RG_FOBKS_HESS-7_2022-09-12
	RG_FOBKS	12-Sep-22	Ephemerellidae	12	120	0.0066	0.066	RG_FOBKS_HESS-7_2022-09-12
RG_FOBKS	12-Sep-22	Heptageniidae	211	2110	0.0796	0.796	RG_FOBKS_HESS-7_2022-09-12	
RG_FOBKS	12-Sep-22	Chloroperlidae	2	20	0.0031	0.031	RG_FOBKS_HESS-7_2022-09-12	
RG_FOBKS	12-Sep-22	Perlodidae	17	170	0.1701	1.701	RG_FOBKS_HESS-7_2022-09-12	
RG_FOBKS	12-Sep-22	Taeniopterygidae	3	30	0.0002	0.002	RG_FOBKS_HESS-7_2022-09-12	
RG_FOBKS	12-Sep-22	Rhyacophilidae	15	150	0.0321	0.321	RG_FOBKS_HESS-7_2022-09-12	
RG_FOBKS	12-Sep-22	Ceratopogonidae	2	20	0.001	0.01	RG_FOBKS_HESS-7_2022-09-12	
RG_FOBKS	12-Sep-22	Chironomidae	8	80	0.0131	0.131	RG_FOBKS_HESS-7_2022-09-12	
RG_FOBKS	12-Sep-22	Empididae	1	10	0.004	0.04	RG_FOBKS_HESS-7_2022-09-12	
RG_FOBKS	12-Sep-22	Psychodidae	235	2350	0.0847	0.847	RG_FOBKS_HESS-7_2022-09-12	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID
Mine-Exposed	RG_FOBKS	12-Sep-22	Limoniidae	1	10	0.0016	0.016	RG_FOBKS_HESS-7_2022-09-12
	RG_FOBKS	12-Sep-22	Nemata	3	30	0.0018	0.018	RG_FOBKS_HESS-8_2022-09-12
	RG_FOBKS	12-Sep-22	Planariidae	1	10	0.0028	0.028	RG_FOBKS_HESS-8_2022-09-12
	RG_FOBKS	12-Sep-22	Naididae	5	50	0.0006	0.006	RG_FOBKS_HESS-8_2022-09-12
	RG_FOBKS	12-Sep-22	Lebertiidae	8	80	0.0024	0.024	RG_FOBKS_HESS-8_2022-09-12
	RG_FOBKS	12-Sep-22	Baetidae	1	10	0.0021	0.021	RG_FOBKS_HESS-8_2022-09-12
	RG_FOBKS	12-Sep-22	Ephemerellidae	7	70	0.0066	0.066	RG_FOBKS_HESS-8_2022-09-12
	RG_FOBKS	12-Sep-22	Heptageniidae	65	650	0.0655	0.655	RG_FOBKS_HESS-8_2022-09-12
	RG_FOBKS	12-Sep-22	Periodidae	6	60	0.003	0.03	RG_FOBKS_HESS-8_2022-09-12
	RG_FOBKS	12-Sep-22	Glossosomatidae	1	10	0.0023	0.023	RG_FOBKS_HESS-8_2022-09-12
	RG_FOBKS	12-Sep-22	Hydropsychidae	2	20	0.0019	0.019	RG_FOBKS_HESS-8_2022-09-12
	RG_FOBKS	12-Sep-22	Rhyacophilidae	6	60	0.0388	0.388	RG_FOBKS_HESS-8_2022-09-12
	RG_FOBKS	12-Sep-22	Chironomidae	3	30	0.0075	0.075	RG_FOBKS_HESS-8_2022-09-12
	RG_FOBKS	12-Sep-22	Empididae	1	10	0.0011	0.011	RG_FOBKS_HESS-8_2022-09-12
	RG_FOBKS	12-Sep-22	Psychodidae	59	590	0.0175	0.175	RG_FOBKS_HESS-8_2022-09-12
	RG_FOBKS	12-Sep-22	Planariidae	4	40	0.0018	0.018	RG_FOBKS_HESS-9_2022-09-12
	RG_FOBKS	12-Sep-22	Naididae	3	30	0.0004	0.004	RG_FOBKS_HESS-9_2022-09-12
	RG_FOBKS	12-Sep-22	Lebertiidae	2	20	0.0006	0.006	RG_FOBKS_HESS-9_2022-09-12
	RG_FOBKS	12-Sep-22	Ephemerellidae	2	20	0.0021	0.021	RG_FOBKS_HESS-9_2022-09-12
	RG_FOBKS	12-Sep-22	Heptageniidae	72	720	0.0243	0.243	RG_FOBKS_HESS-9_2022-09-12
	RG_FOBKS	12-Sep-22	Capniidae	1	10	0.0009	0.009	RG_FOBKS_HESS-9_2022-09-12
	RG_FOBKS	12-Sep-22	Periodidae	3	30	0.014	0.14	RG_FOBKS_HESS-9_2022-09-12
	RG_FOBKS	12-Sep-22	Taeniopterygidae	1	10	0.0001	0.001	RG_FOBKS_HESS-9_2022-09-12
	RG_FOBKS	12-Sep-22	Hydropsychidae	3	30	0.0112	0.112	RG_FOBKS_HESS-9_2022-09-12
	RG_FOBKS	12-Sep-22	Rhyacophilidae	6	60	0.0032	0.032	RG_FOBKS_HESS-9_2022-09-12
	RG_FOBKS	12-Sep-22	Chironomidae	2	20	0.0009	0.009	RG_FOBKS_HESS-9_2022-09-12
	RG_FOBKS	12-Sep-22	Empididae	1	10	0.0015	0.015	RG_FOBKS_HESS-9_2022-09-12
	RG_FOBKS	12-Sep-22	Psychodidae	59	590	0.0183	0.183	RG_FOBKS_HESS-9_2022-09-12
	RG_FOBKS	12-Sep-22	Planariidae	1	10	0.0025	0.025	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Naididae	6	60	0.0014	0.014	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Lebertiidae	32	320	0.0052	0.052	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Ostracoda	3	30	0.0004	0.004	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Elmidae	2	20	0.0005	0.005	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Ephemerellidae	4	40	0.002	0.02	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Heptageniidae	185	1850	0.0522	0.522	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Capniidae	2	20	0.0009	0.009	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Chloroperlidae	4	40	0.0041	0.041	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Nemouridae	1	10	0.0031	0.031	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Perlidae	2	20	0.0143	0.143	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Periodidae	14	140	0.1501	1.501	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Taeniopterygidae	1	10	0.0001	0.001	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Hydropsychidae	1	10	0.1214	1.214	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Rhyacophilidae	7	70	0.0109	0.109	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Ceratopogonidae	4	40	0.0006	0.006	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Chironomidae	13	130	0.0091	0.091	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Empididae	4	40	0.0057	0.057	RG_FOBKS_HESS-10_2022-09-12
	RG_FOBKS	12-Sep-22	Psychodidae	308	3080	0.1179	1.179	RG_FOBKS_HESS-10_2022-09-12
	RG_SCOUTDS	13-Sep-22	Nemata	6	60	0.0016	0.016	RG_SCOUTDS_HESS-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Planariidae	6	60	0.0054	0.054	RG_SCOUTDS_HESS-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Naididae	78	780	0.006	0.06	RG_SCOUTDS_HESS-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Lebertiidae	104	1040	0.0288	0.288	RG_SCOUTDS_HESS-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Sperchontidae	4	40	0.0022	0.022	RG_SCOUTDS_HESS-1_2022-09-13
RG_SCOUTDS	13-Sep-22	Ostracoda	18	180	0.0064	0.064	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Elmidae	8	80	0.0104	0.104	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Ephemerellidae	36	360	0.0576	0.576	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Heptageniidae	282	2820	0.091	0.91	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Chloroperlidae	22	220	0.0112	0.112	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Leuctridae	4	40	0.0054	0.054	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Nemouridae	6	60	0.0012	0.012	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Periodidae	10	100	0.1832	1.832	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Trichoptera	2	20	0.0002	0.002	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Apataniidae	10	100	0.0096	0.096	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Glossosomatidae	10	100	0.013	0.13	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Rhyacophilidae	10	100	0.1958	1.958	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Ceratopogonidae	20	200	0.0048	0.048	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Chironomidae	34	340	0.0266	0.266	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Empididae	4	40	0.009	0.09	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Psychodidae	720	7200	0.241	2.41	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Limoniidae	1	10	0.0457	0.457	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Limoniidae	4	40	0.0726	0.726	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Pisidiidae	6	60	0.0026	0.026	RG_SCOUTDS_HESS-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Planariidae	20	200	0.026	0.26	RG_SCOUTDS_HESS-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Enchytraeidae	4	40	0.0012	0.012	RG_SCOUTDS_HESS-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Lumbricidae	4	40	0.0252	0.252	RG_SCOUTDS_HESS-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Naididae	72	720	0.0136	0.136	RG_SCOUTDS_HESS-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Lebertiidae	28	280	0.006	0.06	RG_SCOUTDS_HESS-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Ostracoda	56	560	0.0192	0.192	RG_SCOUTDS_HESS-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Ameletidae	4	40	0.0208	0.208	RG_SCOUTDS_HESS-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Baetidae	4	40	0.0236	0.236	RG_SCOUTDS_HESS-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Ephemerellidae	36	360	0.0616	0.616	RG_SCOUTDS_HESS-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Heptageniidae	484	4840	0.2892	2.892	RG_SCOUTDS_HESS-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Capniidae	4	40	0.0024	0.024	RG_SCOUTDS_HESS-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Chloroperlidae	8	80	0.0124	0.124	RG_SCOUTDS_HESS-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Nemouridae	52	520	0.0404	0.404	RG_SCOUTDS_HESS-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Periodidae	32	320	0.0508	0.508	RG_SCOUTDS_HESS-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Apataniidae	28	280	0.03	0.3	RG_SCOUTDS_HESS-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Brachycentridae	8	80	0.0016	0.016	RG_SCOUTDS_HESS-2_2022-09-13	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID	
Mine-Exposed	RG_SCOUTDS	13-Sep-22	Hydropsychidae	16	160	0.0196	0.196	RG_SCOUTDS_HESS-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Limnephilidae	4	40	0.0008	0.008	RG_SCOUTDS_HESS-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Rhyacophilidae	8	80	0.0004	0.004	RG_SCOUTDS_HESS-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ceratopogonidae	16	160	0.0104	0.104	RG_SCOUTDS_HESS-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Chironomidae	112	1120	0.0952	0.952	RG_SCOUTDS_HESS-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Empididae	16	160	0.0164	0.164	RG_SCOUTDS_HESS-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Psychodidae	1260	12600	0.4276	4.276	RG_SCOUTDS_HESS-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Limoniidae	8	80	0.0216	0.216	RG_SCOUTDS_HESS-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Naididae	56	560	0.0074	0.074	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Lebertiidae	70	700	0.0156	0.156	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ostracoda	2	20	0.0006	0.006	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Elmidae	4	40	0.0006	0.006	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ephemerellidae	32	320	0.0466	0.466	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Heptageniidae	330	3300	0.2938	2.938	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Chloroperlidae	20	200	0.0194	0.194	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Nemouridae	6	60	0.0002	0.002	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Perlodidae	3	30	0.1035	1.035	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Perlodidae	12	120	0.0624	0.624	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Taeniopterygidae	8	80	0.001	0.01	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Apataniidae	8	80	0.0058	0.058	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Glossosomatidae	6	60	0.0016	0.016	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Hydropsychidae	2	20	0.0088	0.088	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Rhyacophilidae	8	80	0.0896	0.896	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ceratopogonidae	20	200	0.006	0.06	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Chironomidae	22	220	0.0076	0.076	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Empididae	4	40	0.0082	0.082	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Psychodidae	682	6820	0.2184	2.184	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Pisidiidae	2	20	0.001	0.01	RG_SCOUTDS_HESS-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Nemata	3	30	0.0033	0.033	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Planariidae	2	20	0.0026	0.026	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Enchytraeidae	4	40	0.0006	0.006	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Lumbricidae	2	20	0.0617	0.617	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Naididae	13	130	0.0012	0.012	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Lebertiidae	29	290	0.009	0.09	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Sperchontidae	1	10	0.0006	0.006	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ostracoda	18	180	0.0038	0.038	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Elmidae	3	30	0.0013	0.013	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ameletidae	6	60	0.0656	0.656	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Baetidae	1	10	0.0042	0.042	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ephemerellidae	9	90	0.0262	0.262	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Heptageniidae	142	1420	0.1223	1.223	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Capniidae	1	10	0.0003	0.003	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Chloroperlidae	1	10	0.0007	0.007	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Nemouridae	4	40	0.008	0.08	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Perlidae	2	20	0.0453	0.453	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Perlodidae	9	90	0.0434	0.434	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Taeniopterygidae	2	20	0.0002	0.002	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Trichoptera	1	10	0.0001	0.001	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Apataniidae	2	20	0.0022	0.022	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Hydroptilidae	1	10	0.0007	0.007	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Rhyacophilidae	4	40	0.0416	0.416	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ceratopogonidae	4	40	0.001	0.01	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Chironomidae	23	230	0.0181	0.181	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Empididae	15	150	0.0225	0.225	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Psychodidae	754	7540	0.2625	2.625	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Simuliidae	1	10	0.0029	0.029	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Pisidiidae	3	30	0.0015	0.015	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Tipulidae	1	10	0.002	0.02	RG_SCOUTDS_HESS-4_2022-09-13
	RG_SCOUTDS	13-Sep-22	Nemata	2	20	0.0032	0.032	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Planariidae	6	60	0.013	0.13	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Enchytraeidae	6	60	0.0004	0.004	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Naididae	44	440	0.0058	0.058	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Lebertiidae	36	360	0.0112	0.112	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ostracoda	46	460	0.0126	0.126	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Elmidae	6	60	0.0012	0.012	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Baetidae	4	40	0.0206	0.206	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ephemerellidae	38	380	0.1048	1.048	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Heptageniidae	170	1700	0.1908	1.908	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Chloroperlidae	4	40	0.0054	0.054	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Nemouridae	12	120	0.01	0.1	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Perlodidae	1	10	0.0409	0.409	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Perlodidae	16	160	0.076	0.76	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Apataniidae	20	200	0.025	0.25	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Rhyacophilidae	4	40	0.0048	0.048	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ceratopogonidae	32	320	0.0136	0.136	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Chironomidae	14	140	0.006	0.06	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Empididae	16	160	0.0288	0.288	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Psychodidae	1310	13100	0.579	5.79	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Limoniidae	1	10	0.3447	3.447	RG_SCOUTDS_HESS-5_2022-09-13
	RG_SCOUTDS	13-Sep-22	Pisidiidae	4	40	0.001	0.01	RG_SCOUTDS_HESS-5_2022-09-13
RG_SCOUTDS	13-Sep-22	Nemata	4	40	0.0006	0.006	RG_SCOUTDS_HESS-6_2022-09-13	
RG_SCOUTDS	13-Sep-22	Planariidae	10	100	0.0062	0.062	RG_SCOUTDS_HESS-6_2022-09-13	
RG_SCOUTDS	13-Sep-22	Enchytraeidae	16	160	0.0044	0.044	RG_SCOUTDS_HESS-6_2022-09-13	
RG_SCOUTDS	13-Sep-22	Lumbricidae	1	10	0.1601	1.601	RG_SCOUTDS_HESS-6_2022-09-13	
RG_SCOUTDS	13-Sep-22	Lumbricidae	2	20	0.0034	0.034	RG_SCOUTDS_HESS-6_2022-09-13	
RG_SCOUTDS	13-Sep-22	Naididae	126	1260	0.0124	0.124	RG_SCOUTDS_HESS-6_2022-09-13	
RG_SCOUTDS	13-Sep-22	Lebertiidae	22	220	0.0058	0.058	RG_SCOUTDS_HESS-6_2022-09-13	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID
Mine-Exposed	RG_SCOUTDS	13-Sep-22	Elmidae	2	20	0.0002	0.002	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Baetidae	2	20	0.0002	0.002	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ephemerellidae	52	520	0.083	0.83	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Heptageniidae	410	4100	0.2532	2.532	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Capniidae	6	60	0.0046	0.046	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Nemouridae	4	40	0.0008	0.008	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Perlodidae	4	40	0.1802	1.802	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Perlodidae	42	420	0.0028	0.028	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Taeniopterygidae	6	60	0.001	0.01	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Glossosomatidae	2	20	0.0002	0.002	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Hydropsychidae	6	60	0.008	0.08	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Rhyacophilidae	20	200	0.1588	1.588	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ceratopogonidae	10	100	0.0036	0.036	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Chironomidae	54	540	0.0264	0.264	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Empididae	8	80	0.0138	0.138	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Psychodidae	898	8980	0.492	4.92	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Pisidiidae	2	20	0.0016	0.016	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Simuliidae	2	20	0.0062	0.062	RG_SCOUTDS_HESS-6_2022-09-13
	RG_SCOUTDS	13-Sep-22	Nemata	2	20	0.0004	0.004	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Planariidae	4	40	0.0096	0.096	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Enchytraeidae	6	60	0.0014	0.014	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Naididae	38	380	0.0038	0.038	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Lebertiidae	30	300	0.0076	0.076	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ostracoda	2	20	0.0002	0.002	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Elmidae	2	20	0.0026	0.026	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ephemerellidae	52	520	0.126	1.26	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Heptageniidae	398	3980	0.1484	1.484	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Capniidae	6	60	0.0066	0.066	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Chloroperlidae	2	20	0.0024	0.024	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Nemouridae	14	140	0.0044	0.044	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Perlodidae	1	10	0.0512	0.512	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Perlodidae	40	400	0.1764	1.764	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Taeniopterygidae	8	80	0.0046	0.046	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Apataniidae	18	180	0.0244	0.244	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Glossosomatidae	2	20	0.0006	0.006	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Rhyacophilidae	12	120	0.057	0.57	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Chironomidae	14	140	0.0128	0.128	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Empididae	8	80	0.0154	0.154	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Psychodidae	696	6960	0.3754	3.754	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Pisidiidae	2	20	0.0002	0.002	RG_SCOUTDS_HESS-7_2022-09-13
	RG_SCOUTDS	13-Sep-22	Nemata	5	50	0.0067	0.067	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Planariidae	10	100	0.0203	0.203	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Enchytraeidae	4	40	0.0009	0.009	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Naididae	26	260	0.003	0.03	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Lebertiidae	39	390	0.0097	0.097	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ostracoda	4	40	0.0023	0.023	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Elmidae	3	30	0.0014	0.014	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ameletidae	2	20	0.0235	0.235	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Baetidae	1	10	0.0014	0.014	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ephemerellidae	41	410	0.0706	0.706	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Heptageniidae	128	1280	0.0532	0.532	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Chloroperlidae	2	20	0.0003	0.003	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Nemouridae	1	10	0.0001	0.001	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Perlodidae	18	180	0.1712	1.712	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Taeniopterygidae	2	20	0.0001	0.001	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Apataniidae	6	60	0.0052	0.052	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Glossosomatidae	3	30	0.0005	0.005	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Rhyacophilidae	14	140	0.0748	0.748	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Uenoidae	1	10	0.0001	0.001	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ceratopogonidae	7	70	0.0028	0.028	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Chironomidae	8	80	0.011	0.11	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Empididae	13	130	0.0236	0.236	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Psychodidae	518	5180	0.2612	2.612	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Limoniidae	1	10	0.0001	0.001	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Pisidiidae	5	50	0.003	0.03	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Nemata	2	20	0.0002	0.002	RG_SCOUTDS_HESS-8_2022-09-13
	RG_SCOUTDS	13-Sep-22	Planariidae	2	20	0.003	0.03	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Enchytraeidae	12	120	0.0049	0.049	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Lumbricidae	1	10	0.0029	0.029	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Naididae	90	900	0.0086	0.086	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Lebertiidae	20	200	0.0048	0.048	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Sperchontidae	1	10	0.0001	0.001	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ostracoda	2	20	0.0011	0.011	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Elmidae	3	30	0.0005	0.005	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Baetidae	2	20	0.0093	0.093	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ephemerellidae	34	340	0.0649	0.649	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Heptageniidae	163	1630	0.1101	1.101	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Capniidae	2	20	0.0001	0.001	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Chloroperlidae	1	10	0.0017	0.017	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Nemouridae	15	150	0.0098	0.098	RG_SCOUTDS_HESS-9_2022-09-13
RG_SCOUTDS	13-Sep-22	Peltoperlidae	1	10	0.0001	0.001	RG_SCOUTDS_HESS-9_2022-09-13	
RG_SCOUTDS	13-Sep-22	Perlodidae	23	230	0.0576	0.576	RG_SCOUTDS_HESS-9_2022-09-13	
RG_SCOUTDS	13-Sep-22	Taeniopterygidae	6	60	0.0015	0.015	RG_SCOUTDS_HESS-9_2022-09-13	
RG_SCOUTDS	13-Sep-22	Apataniidae	1	10	0.0009	0.009	RG_SCOUTDS_HESS-9_2022-09-13	
RG_SCOUTDS	13-Sep-22	Glossosomatidae	3	30	0.0005	0.005	RG_SCOUTDS_HESS-9_2022-09-13	
RG_SCOUTDS	13-Sep-22	Hydropsychidae	2	20	0.0009	0.009	RG_SCOUTDS_HESS-9_2022-09-13	
RG_SCOUTDS	13-Sep-22	Rhyacophilidae	9	90	0.04	0.4	RG_SCOUTDS_HESS-9_2022-09-13	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID
Mine-Exposed	RG_SCOUTDS	13-Sep-22	Ceratopogonidae	13	130	0.0063	0.063	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Chironomidae	15	150	0.0098	0.098	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Empididae	2	20	0.0055	0.055	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Psychodidae	602	6020	0.2896	2.896	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Pisidiidae	3	30	0.0008	0.008	RG_SCOUTDS_HESS-9_2022-09-13
	RG_SCOUTDS	13-Sep-22	Nemata	5	50	0.0053	0.053	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Planariidae	5	50	0.0105	0.105	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Enchytraeidae	9	90	0.002	0.02	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Naididae	74	740	0.0063	0.063	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Hygrobatidae	1	10	0.0001	0.001	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Lebertiidae	17	170	0.0048	0.048	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ostracoda	17	170	0.0047	0.047	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Dytiscidae	1	10	0.0012	0.012	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Elmidae	2	20	0.0004	0.004	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ameletidae	3	30	0.0219	0.219	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Baetidae	7	70	0.0253	0.253	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ephemerellidae	41	410	0.0551	0.551	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Heptageniidae	207	2070	0.2543	2.543	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Capniidae	6	60	0.0017	0.017	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Chloroperlidae	5	50	0.008	0.08	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Nemouridae	12	120	0.0035	0.035	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Perlidae	3	30	1.1786	11.786	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Perlodidae	18	180	0.0807	0.807	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Taeniopterygidae	2	20	0.0005	0.005	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Apataniidae	1	10	0.0008	0.008	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Rhyacophilidae	6	60	0.0492	0.492	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Ceratopogonidae	9	90	0.0031	0.031	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Chironomidae	14	140	0.0075	0.075	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Empididae	7	70	0.0119	0.119	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Psychodidae	826	8260	0.2926	2.926	RG_SCOUTDS_HESS-10_2022-09-13
	RG_SCOUTDS	13-Sep-22	Pisidiidae	2	20	0.0009	0.009	RG_SCOUTDS_HESS-10_2022-09-13
	RG_FOBSC	13-Sep-22	Nemata	1	10	0.0001	0.001	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Planariidae	1	10	0.001	0.01	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Enchytraeidae	2	20	0.0008	0.008	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Naididae	15	150	0.0013	0.013	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Lebertiidae	8	80	0.0034	0.034	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Hydryphantidae	1	10	0.0006	0.006	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Ostracoda	9	90	0.0019	0.019	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Ameletidae	1	10	0.0001	0.001	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Ephemerellidae	7	70	0.0137	0.137	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Heptageniidae	175	1750	0.1162	1.162	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Chloroperlidae	3	30	0.0043	0.043	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Nemouridae	4	40	0.0004	0.004	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Perlodidae	6	60	0.0105	0.105	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Taeniopterygidae	5	50	0.0005	0.005	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Trichoptera	1	10	0.0001	0.001	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Apataniidae	2	20	0.0026	0.026	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Glossosomatidae	1	10	0.0001	0.001	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Hydropsychidae	1	10	0.001	0.01	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Rhyacophilidae	1	10	0.0103	0.103	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Chironomidae	19	190	0.0148	0.148	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Ceratopogonidae	2	20	0.0012	0.012	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Muscidae	3	30	0.0903	0.903	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Pelecorynchidae	1	10	0.0021	0.021	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Psychodidae	634	6340	0.2475	2.475	RG_FOBSC_HESS-1_2022-09-13
	RG_FOBSC	13-Sep-22	Nemata	4	40	0.005	0.05	RG_FOBSC_HESS-2_2022-09-13
	RG_FOBSC	13-Sep-22	Planariidae	2	20	0.0004	0.004	RG_FOBSC_HESS-2_2022-09-13
	RG_FOBSC	13-Sep-22	Enchytraeidae	16	160	0.0058	0.058	RG_FOBSC_HESS-2_2022-09-13
	RG_FOBSC	13-Sep-22	Naididae	18	180	0.002	0.02	RG_FOBSC_HESS-2_2022-09-13
	RG_FOBSC	13-Sep-22	Lebertiidae	10	100	0.0028	0.028	RG_FOBSC_HESS-2_2022-09-13
	RG_FOBSC	13-Sep-22	Ostracoda	2	20	0.0002	0.002	RG_FOBSC_HESS-2_2022-09-13
	RG_FOBSC	13-Sep-22	Baetidae	4	40	0.0616	0.616	RG_FOBSC_HESS-2_2022-09-13
	RG_FOBSC	13-Sep-22	Ephemerellidae	2	20	0.0146	0.146	RG_FOBSC_HESS-2_2022-09-13
	RG_FOBSC	13-Sep-22	Heptageniidae	4	40	0.0467	0.467	RG_FOBSC_HESS-2_2022-09-13
	RG_FOBSC	13-Sep-22	Heptageniidae	176	1760	0.0884	0.884	RG_FOBSC_HESS-2_2022-09-13
	RG_FOBSC	13-Sep-22	Chloroperlidae	6	60	0.006	0.06	RG_FOBSC_HESS-2_2022-09-13
	RG_FOBSC	13-Sep-22	Leuctridae	2	20	0.0028	0.028	RG_FOBSC_HESS-2_2022-09-13
	RG_FOBSC	13-Sep-22	Nemouridae	14	140	0.0034	0.034	RG_FOBSC_HESS-2_2022-09-13
	RG_FOBSC	13-Sep-22	Perlidae	1	10	0.0389	0.389	RG_FOBSC_HESS-2_2022-09-13
	RG_FOBSC	13-Sep-22	Perlodidae	1	10	0.0418	0.418	RG_FOBSC_HESS-2_2022-09-13
	RG_FOBSC	13-Sep-22	Perlodidae	18	180	0.0178	0.178	RG_FOBSC_HESS-2_2022-09-13
RG_FOBSC	13-Sep-22	Taeniopterygidae	2	20	0.0002	0.002	RG_FOBSC_HESS-2_2022-09-13	
RG_FOBSC	13-Sep-22	Glossosomatidae	2	20	0.0008	0.008	RG_FOBSC_HESS-2_2022-09-13	
RG_FOBSC	13-Sep-22	Hydropsychidae	8	80	0.0146	0.146	RG_FOBSC_HESS-2_2022-09-13	
RG_FOBSC	13-Sep-22	Rhyacophilidae	1	10	0.0288	0.288	RG_FOBSC_HESS-2_2022-09-13	
RG_FOBSC	13-Sep-22	Rhyacophilidae	2	20	0.0032	0.032	RG_FOBSC_HESS-2_2022-09-13	
RG_FOBSC	13-Sep-22	Ceratopogonidae	8	80	0.0038	0.038	RG_FOBSC_HESS-2_2022-09-13	
RG_FOBSC	13-Sep-22	Chironomidae	30	300	0.0296	0.296	RG_FOBSC_HESS-2_2022-09-13	
RG_FOBSC	13-Sep-22	Empididae	6	60	0.0148	0.148	RG_FOBSC_HESS-2_2022-09-13	
RG_FOBSC	13-Sep-22	Psychodidae	642	6420	0.3268	3.268	RG_FOBSC_HESS-2_2022-09-13	
RG_FOBSC	13-Sep-22	Pisidiidae	2	20	0.0002	0.002	RG_FOBSC_HESS-2_2022-09-13	
RG_FOBSC	13-Sep-22	Nemata	2	20	0.0002	0.002	RG_FOBSC_HESS-3_2022-09-13	
RG_FOBSC	13-Sep-22	Enchytraeidae	154	1540	0.0506	0.506	RG_FOBSC_HESS-3_2022-09-13	
RG_FOBSC	13-Sep-22	Naididae	52	520	0.006	0.06	RG_FOBSC_HESS-3_2022-09-13	
RG_FOBSC	13-Sep-22	Lebertiidae	32	320	0.008	0.08	RG_FOBSC_HESS-3_2022-09-13	
RG_FOBSC	13-Sep-22	Ostracoda	6	60	0.0008	0.008	RG_FOBSC_HESS-3_2022-09-13	
RG_FOBSC	13-Sep-22	Elmidae	2	20	0.0042	0.042	RG_FOBSC_HESS-3_2022-09-13	
RG_FOBSC	13-Sep-22	Baetidae	4	40	0.0158	0.158	RG_FOBSC_HESS-3_2022-09-13	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID
Mine-Exposed	RG_FOBSC	13-Sep-22	Ephemereleididae	42	420	0.1132	1.132	RG_FOBSC_HESS-3_2022-09-13
	RG_FOBSC	13-Sep-22	Heptageniidae	3	30	0.0314	0.314	RG_FOBSC_HESS-3_2022-09-13
	RG_FOBSC	13-Sep-22	Heptageniidae	238	2380	0.3158	3.158	RG_FOBSC_HESS-3_2022-09-13
	RG_FOBSC	13-Sep-22	Capniidae	2	20	0.0006	0.006	RG_FOBSC_HESS-3_2022-09-13
	RG_FOBSC	13-Sep-22	Chloroperlidae	4	40	0.0146	0.146	RG_FOBSC_HESS-3_2022-09-13
	RG_FOBSC	13-Sep-22	Nemouridae	12	120	0.0216	0.216	RG_FOBSC_HESS-3_2022-09-13
	RG_FOBSC	13-Sep-22	Perlodidae	3	30	0.0911	0.911	RG_FOBSC_HESS-3_2022-09-13
	RG_FOBSC	13-Sep-22	Perlodidae	8	80	0.037	0.37	RG_FOBSC_HESS-3_2022-09-13
	RG_FOBSC	13-Sep-22	Taeniopterygidae	2	20	0.0002	0.002	RG_FOBSC_HESS-3_2022-09-13
	RG_FOBSC	13-Sep-22	Apataniidae	6	60	0.007	0.07	RG_FOBSC_HESS-3_2022-09-13
	RG_FOBSC	13-Sep-22	Glossosomatidae	22	220	0.0046	0.046	RG_FOBSC_HESS-3_2022-09-13
	RG_FOBSC	13-Sep-22	Hydropsychidae	30	300	0.1224	1.224	RG_FOBSC_HESS-3_2022-09-13
	RG_FOBSC	13-Sep-22	Rhyacophilidae	10	100	0.0488	0.488	RG_FOBSC_HESS-3_2022-09-13
	RG_FOBSC	13-Sep-22	Ceratopogonidae	8	80	0.007	0.07	RG_FOBSC_HESS-3_2022-09-13
	RG_FOBSC	13-Sep-22	Chironomidae	30	300	0.0342	0.342	RG_FOBSC_HESS-3_2022-09-13
	RG_FOBSC	13-Sep-22	Empididae	10	100	0.0156	0.156	RG_FOBSC_HESS-3_2022-09-13
	RG_FOBSC	13-Sep-22	Psychodidae	588	5880	0.1942	1.942	RG_FOBSC_HESS-3_2022-09-13
	RG_FOBSC	13-Sep-22	Nemata	1	10	0.0019	0.019	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Planariidae	2	20	0.0044	0.044	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Enchytraeidae	19	190	0.0108	0.108	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Naididae	21	210	0.0021	0.021	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Lebertiidae	5	50	0.0014	0.014	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Ostracoda	7	70	0.0024	0.024	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Elmidae	1	10	0.0002	0.002	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Ameletidae	3	30	0.0147	0.147	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Baetidae	1	10	0.0033	0.033	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Ephemereleididae	13	130	0.0139	0.139	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Heptageniidae	203	2030	0.0761	0.761	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Capniidae	2	20	0.0015	0.015	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Leptophlebiidae	1	10	0.0006	0.006	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Chloroperlidae	3	30	0.0062	0.062	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Nemouridae	1	10	0.0003	0.003	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Perlodidae	9	90	0.0281	0.281	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Taeniopterygidae	1	10	0.0001	0.001	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Apataniidae	3	30	0.002	0.02	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Glossosomatidae	2	20	0.0009	0.009	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Rhyacophilidae	7	70	0.0297	0.297	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Uenoidae	1	10	0.0009	0.009	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Ceratopogonidae	4	40	0.0031	0.031	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Chironomidae	12	120	0.0124	0.124	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Empididae	2	20	0.0028	0.028	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Psychodidae	621	6210	0.253	2.53	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Pediciidae	1	10	0.0003	0.003	RG_FOBSC_HESS-4_2022-09-13
	RG_FOBSC	13-Sep-22	Nemata	4	40	0.0084	0.084	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Planariidae	4	40	0.012	0.12	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Enchytraeidae	18	180	0.004	0.04	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Naididae	46	460	0.0044	0.044	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Lebertiidae	12	120	0.0038	0.038	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Ostracoda	4	40	0.0004	0.004	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Baetidae	4	40	0.013	0.13	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Ephemereleididae	32	320	0.063	0.63	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Heptageniidae	1	10	0.0133	0.133	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Heptageniidae	286	2860	0.2176	2.176	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Capniidae	10	100	0.0078	0.078	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Chloroperlidae	4	40	0.01	0.1	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Nemouridae	28	280	0.025	0.25	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Perlodidae	4	40	0.1563	1.563	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Perlodidae	20	200	0.0126	0.126	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Taeniopterygidae	6	60	0.0008	0.008	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Apataniidae	8	80	0.0102	0.102	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Glossosomatidae	72	720	0.0384	0.384	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Hydropsychidae	30	300	0.0768	0.768	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Rhyacophilidae	16	160	0.0174	0.174	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Ceratopogonidae	4	40	0.003	0.03	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Chironomidae	28	280	0.0136	0.136	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Empididae	4	40	0.007	0.07	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Psychodidae	1004	10040	0.4748	4.748	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Simuliidae	4	40	0.0076	0.076	RG_FOBSC_HESS-5_2022-09-13
	RG_FOBSC	13-Sep-22	Nemata	10	100	0.0092	0.092	RG_FOBSC_HESS-6_2022-09-13
	RG_FOBSC	13-Sep-22	Planariidae	4	40	0.001	0.01	RG_FOBSC_HESS-6_2022-09-13
	RG_FOBSC	13-Sep-22	Enchytraeidae	2	20	0.0002	0.002	RG_FOBSC_HESS-6_2022-09-13
	RG_FOBSC	13-Sep-22	Naididae	18	180	0.001	0.01	RG_FOBSC_HESS-6_2022-09-13
RG_FOBSC	13-Sep-22	Lebertiidae	2	20	0.0002	0.002	RG_FOBSC_HESS-6_2022-09-13	
RG_FOBSC	13-Sep-22	Ostracoda	2	20	0.0002	0.002	RG_FOBSC_HESS-6_2022-09-13	
RG_FOBSC	13-Sep-22	Elmidae	2	20	0.0002	0.002	RG_FOBSC_HESS-6_2022-09-13	
RG_FOBSC	13-Sep-22	Ephemereleididae	1	10	0.007	0.07	RG_FOBSC_HESS-6_2022-09-13	
RG_FOBSC	13-Sep-22	Ephemereleididae	16	160	0.0506	0.506	RG_FOBSC_HESS-6_2022-09-13	
RG_FOBSC	13-Sep-22	Heptageniidae	14	140	0.0696	0.696	RG_FOBSC_HESS-6_2022-09-13	
RG_FOBSC	13-Sep-22	Heptageniidae	40	400	0.0839	0.839	RG_FOBSC_HESS-6_2022-09-13	
RG_FOBSC	13-Sep-22	Chloroperlidae	2	20	0.0014	0.014	RG_FOBSC_HESS-6_2022-09-13	
RG_FOBSC	13-Sep-22	Nemouridae	8	80	0.0014	0.014	RG_FOBSC_HESS-6_2022-09-13	
RG_FOBSC	13-Sep-22	Perlodidae	1	10	0.0355	0.355	RG_FOBSC_HESS-6_2022-09-13	
RG_FOBSC	13-Sep-22	Perlodidae	12	120	0.0322	0.322	RG_FOBSC_HESS-6_2022-09-13	
RG_FOBSC	13-Sep-22	Taeniopterygidae	6	60	0.0012	0.012	RG_FOBSC_HESS-6_2022-09-13	
RG_FOBSC	13-Sep-22	Glossosomatidae	2	20	0.0032	0.032	RG_FOBSC_HESS-6_2022-09-13	
RG_FOBSC	13-Sep-22	Hydropsychidae	1	10	0.1581	1.581	RG_FOBSC_HESS-6_2022-09-13	
RG_FOBSC	13-Sep-22	Hydropsychidae	14	140	0.0458	0.458	RG_FOBSC_HESS-6_2022-09-13	
RG_FOBSC	13-Sep-22	Rhyacophilidae	24	240	0.0152	0.152	RG_FOBSC_HESS-6_2022-09-13	
RG_FOBSC	13-Sep-22	Chironomidae	40	400	0.0072	0.072	RG_FOBSC_HESS-6_2022-09-13	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID
Mine-Exposed	RG_FOBSC	13-Sep-22	Empididae	4	40	0.0018	0.018	RG_FOBSC_HESS-6_2022-09-13
	RG_FOBSC	13-Sep-22	Ceratopogonidae	6	60	0.0018	0.018	RG_FOBSC_HESS-6_2022-09-13
	RG_FOBSC	13-Sep-22	Psychodidae	754	7540	0.4818	4.818	RG_FOBSC_HESS-6_2022-09-13
	RG_FOBSC	13-Sep-22	Simuliidae	20	200	0.0844	0.844	RG_FOBSC_HESS-6_2022-09-13
	RG_FOBSC	13-Sep-22	Nemata	5	50	0.0059	0.059	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Planariidae	3	30	0.0202	0.202	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Enchytraeidae	19	190	0.0053	0.053	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Naididae	21	210	0.0014	0.014	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Lebertiidae	9	90	0.0022	0.022	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Ostracoda	1	10	0.0001	0.001	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Elmidae	1	10	0.0016	0.016	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Baetidae	15	150	0.007	0.07	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Ephemerellidae	27	270	0.0513	0.513	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Heptageniidae	236	2360	0.0796	0.796	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Capniidae	1	10	0.0006	0.006	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Chloroperlidae	1	10	0.0009	0.009	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Nemouridae	12	120	0.0042	0.042	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Perlodidae	10	100	0.0044	0.044	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Taeniopterygidae	7	70	0.0029	0.029	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Brachycentridae	1	10	0.0001	0.001	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Glossosomatidae	15	150	0.0037	0.037	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Hydropsychidae	8	80	0.0222	0.222	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Rhyacophilidae	18	180	0.043	0.43	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Ceratopogonidae	5	50	0.0042	0.042	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Chironomidae	24	240	0.0138	0.138	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Empididae	3	30	0.0056	0.056	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Psychodidae	193	1930	0.0514	0.514	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Simuliidae	1	10	0.0013	0.013	RG_FOBSC_HESS-7_2022-09-13
	RG_FOBSC	13-Sep-22	Nemata	4	40	0.0006	0.006	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Planariidae	2	20	0.0074	0.074	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Enchytraeidae	16	160	0.0038	0.038	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Naididae	6	60	0.0012	0.012	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Lebertiidae	10	100	0.003	0.03	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Ostracoda	6	60	0.0012	0.012	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Ephemerellidae	8	80	0.011	0.11	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Heptageniidae	110	1100	0.114	1.14	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Chloroperlidae	2	20	0.0022	0.022	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Perlodidae	4	40	0.011	0.11	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Taeniopterygidae	6	60	0.0012	0.012	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Gerridae	2	20	0.0044	0.044	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Apataniidae	2	20	0.0016	0.016	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Glossosomatidae	2	20	0.0046	0.046	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Rhyacophilidae	2	20	0.0002	0.002	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Ceratopogonidae	10	100	0.0034	0.034	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Chironomidae	6	60	0.0036	0.036	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Empididae	6	60	0.0096	0.096	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Psychodidae	716	7160	0.2548	2.548	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Pediciidae	2	20	0.0014	0.014	RG_FOBSC_HESS-8_2022-09-13
	RG_FOBSC	13-Sep-22	Nemata	4	40	0.0035	0.035	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Planariidae	3	30	0.0016	0.016	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Enchytraeidae	2	20	0.0002	0.002	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Naididae	11	110	0.0012	0.012	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Lebertiidae	13	130	0.0065	0.065	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Ostracoda	6	60	0.0014	0.014	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Ameletidae	2	20	0.0008	0.008	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Baetidae	6	60	0.0247	0.247	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Ephemerellidae	6	60	0.0117	0.117	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Heptageniidae	173	1730	0.1096	1.096	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Capniidae	1	10	0.0009	0.009	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Nemouridae	3	30	0.003	0.03	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Perlodidae	8	80	0.096	0.96	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Taeniopterygidae	2	20	0.0006	0.006	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Apataniidae	6	60	0.0055	0.055	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Hydropsychidae	2	20	0.2456	2.456	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Rhyacophilidae	3	30	0.0021	0.021	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Ceratopogonidae	6	60	0.0042	0.042	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Chironomidae	8	80	0.0102	0.102	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Empididae	1	10	0.0016	0.016	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Psychodidae	149	1490	0.0404	0.404	RG_FOBSC_HESS-9_2022-09-13
	RG_FOBSC	13-Sep-22	Nemata	2	20	0.0009	0.009	RG_FOBSC_HESS-10_2022-09-13
	RG_FOBSC	13-Sep-22	Planariidae	1	10	0.0039	0.039	RG_FOBSC_HESS-10_2022-09-13
RG_FOBSC	13-Sep-22	Enchytraeidae	1	10	0.0001	0.001	RG_FOBSC_HESS-10_2022-09-13	
RG_FOBSC	13-Sep-22	Naididae	12	120	0.0001	0.001	RG_FOBSC_HESS-10_2022-09-13	
RG_FOBSC	13-Sep-22	Lebertiidae	11	110	0.0017	0.017	RG_FOBSC_HESS-10_2022-09-13	
RG_FOBSC	13-Sep-22	Ostracoda	2	20	0.0001	0.001	RG_FOBSC_HESS-10_2022-09-13	
RG_FOBSC	13-Sep-22	Ephemerellidae	4	40	0.0085	0.085	RG_FOBSC_HESS-10_2022-09-13	
RG_FOBSC	13-Sep-22	Heptageniidae	71	710	0.0355	0.355	RG_FOBSC_HESS-10_2022-09-13	
RG_FOBSC	13-Sep-22	Chloroperlidae	1	10	0.0005	0.005	RG_FOBSC_HESS-10_2022-09-13	
RG_FOBSC	13-Sep-22	Nemouridae	1	10	0.0046	0.046	RG_FOBSC_HESS-10_2022-09-13	
RG_FOBSC	13-Sep-22	Perlodidae	5	50	0.0397	0.397	RG_FOBSC_HESS-10_2022-09-13	
RG_FOBSC	13-Sep-22	Apataniidae	1	10	0.0001	0.001	RG_FOBSC_HESS-10_2022-09-13	
RG_FOBSC	13-Sep-22	Glossosomatidae	8	80	0.0014	0.014	RG_FOBSC_HESS-10_2022-09-13	
RG_FOBSC	13-Sep-22	Hydropsychidae	1	10	0.0011	0.011	RG_FOBSC_HESS-10_2022-09-13	
RG_FOBSC	13-Sep-22	Rhyacophilidae	2	20	0.008	0.08	RG_FOBSC_HESS-10_2022-09-13	
RG_FOBSC	13-Sep-22	Ceratopogonidae	1	10	0.0001	0.001	RG_FOBSC_HESS-10_2022-09-13	
RG_FOBSC	13-Sep-22	Chironomidae	7	70	0.0253	0.253	RG_FOBSC_HESS-10_2022-09-13	
RG_FOBSC	13-Sep-22	Empididae	2	20	0.0004	0.004	RG_FOBSC_HESS-10_2022-09-13	
RG_FOBSC	13-Sep-22	Psychodidae	104	1040	0.0314	0.314	RG_FOBSC_HESS-10_2022-09-13	
RG_FOBSC	13-Sep-22	Simuliidae	1	10	0.0027	0.027	RG_FOBSC_HESS-10_2022-09-13	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID	
Mine-Exposed	RG_FOBCP	14-Sep-22	Nemata	20	200	0.018	0.18	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Planariidae	2	20	0.006	0.06	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Enchytraeidae	6	60	0.0014	0.014	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Naididae	2	20	0.0002	0.002	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Lebertiidae	4	40	0.0008	0.008	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Baetidae	20	200	0.076	0.76	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Ephemerellidae	22	220	0.0652	0.652	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Heptageniidae	134	1340	0.243	2.43	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Chloroperlidae	2	20	0.0034	0.034	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Nemouridae	42	420	0.0196	0.196	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Perlodidae	70	700	0.156	1.56	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Taeniopterygidae	20	200	0.0038	0.038	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Brachycentridae	6	60	0.0656	0.656	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Glossosomatidae	2	20	0.0006	0.006	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Hydropsychidae	46	460	0.1136	1.136	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Rhyacophilidae	8	80	0.033	0.33	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Ceratopogonidae	4	40	0.0016	0.016	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Chironomidae	52	520	0.012	0.12	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Empididae	2	20	0.0052	0.052	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Psychodidae	368	3680	0.1514	1.514	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Simuliidae	64	640	0.3272	3.272	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Pediciidae	2	20	0.0028	0.028	RG_FOBCP_HESS-1_2022-09-14
	RG_FOBCP	14-Sep-22	Nemata	6	60	0.0034	0.034	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Planariidae	4	40	0.0067	0.067	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Lebertiidae	16	160	0.0027	0.027	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Ostracoda	2	20	0.0012	0.012	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Ameletidae	1	10	0.0001	0.001	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Baetidae	8	80	0.0301	0.301	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Ephemerellidae	23	230	0.0528	0.528	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Heptageniidae	230	2300	0.2801	2.801	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Capniidae	11	110	0.0076	0.076	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Chloroperlidae	5	50	0.0059	0.059	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Nemouridae	39	390	0.0221	0.221	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Perlidae	1	10	0.0038	0.038	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Perlodidae	49	490	0.0271	0.271	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Taeniopterygidae	16	160	0.0016	0.016	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Apataniidae	6	60	0.006	0.06	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Glossosomatidae	3	30	0.0011	0.011	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Hydropsychidae	8	80	0.0167	0.167	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Rhyacophilidae	4	40	0.0408	0.408	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Ceratopogonidae	1	10	0.0004	0.004	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Chironomidae	21	210	0.013	0.13	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Empididae	4	40	0.0066	0.066	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Psychodidae	325	3250	0.0849	0.849	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Simuliidae	2	20	0.0058	0.058	RG_FOBCP_HESS-2_2022-09-14
	RG_FOBCP	14-Sep-22	Nemata	6	60	0.0023	0.023	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Planariidae	3	30	0.0016	0.016	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Enchytraeidae	4	40	0.002	0.02	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Naididae	3	30	0.0007	0.007	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Lebertiidae	6	60	0.0019	0.019	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Elmidae	1	10	0.0107	0.107	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Baetidae	7	70	0.0248	0.248	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Ephemerellidae	14	140	0.0417	0.417	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Heptageniidae	74	740	0.1277	1.277	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Chloroperlidae	3	30	0.0049	0.049	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Nemouridae	26	260	0.0096	0.096	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Perlidae	1	10	0.3287	3.287	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Perlodidae	31	310	0.0455	0.455	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Taeniopterygidae	10	100	0.0027	0.027	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Brachycentridae	3	30	0.0006	0.006	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Glossosomatidae	6	60	0.0245	0.245	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Hydropsychidae	28	280	0.0766	0.766	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Rhyacophilidae	9	90	0.0041	0.041	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Ceratopogonidae	6	60	0.0025	0.025	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Chironomidae	36	360	0.0163	0.163	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Empididae	1	10	0.0017	0.017	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Psychodidae	175	1750	0.0499	0.499	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Simuliidae	2	20	0.0141	0.141	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Pediciidae	1	10	0.0006	0.006	RG_FOBCP_HESS-3_2022-09-14
	RG_FOBCP	14-Sep-22	Nemata	2	20	0.0014	0.014	RG_FOBCP_HESS-4_2022-09-14
	RG_FOBCP	14-Sep-22	Planariidae	6	60	0.0086	0.086	RG_FOBCP_HESS-4_2022-09-14
	RG_FOBCP	14-Sep-22	Enchytraeidae	12	120	0.0028	0.028	RG_FOBCP_HESS-4_2022-09-14
	RG_FOBCP	14-Sep-22	Naididae	4	40	0.0004	0.004	RG_FOBCP_HESS-4_2022-09-14
	RG_FOBCP	14-Sep-22	Lebertiidae	48	480	0.013	0.13	RG_FOBCP_HESS-4_2022-09-14
	RG_FOBCP	14-Sep-22	Ostracoda	2	20	0.001	0.01	RG_FOBCP_HESS-4_2022-09-14
	RG_FOBCP	14-Sep-22	Ameletidae	1	10	0.0129	0.129	RG_FOBCP_HESS-4_2022-09-14
	RG_FOBCP	14-Sep-22	Ameletidae	2	20	0.0108	0.108	RG_FOBCP_HESS-4_2022-09-14
	RG_FOBCP	14-Sep-22	Baetidae	2	20	0.0072	0.072	RG_FOBCP_HESS-4_2022-09-14
	RG_FOBCP	14-Sep-22	Ephemerellidae	30	300	0.0586	0.586	RG_FOBCP_HESS-4_2022-09-14
	RG_FOBCP	14-Sep-22	Heptageniidae	3	30	0.0271	0.271	RG_FOBCP_HESS-4_2022-09-14
RG_FOBCP	14-Sep-22	Heptageniidae	52	520	0.0262	0.262	RG_FOBCP_HESS-4_2022-09-14	
RG_FOBCP	14-Sep-22	Capniidae	2	20	0.0018	0.018	RG_FOBCP_HESS-4_2022-09-14	
RG_FOBCP	14-Sep-22	Nemouridae	10	100	0.0018	0.018	RG_FOBCP_HESS-4_2022-09-14	
RG_FOBCP	14-Sep-22	Perlodidae	34	340	0.0164	0.164	RG_FOBCP_HESS-4_2022-09-14	
RG_FOBCP	14-Sep-22	Apataniidae	16	160	0.0136	0.136	RG_FOBCP_HESS-4_2022-09-14	
RG_FOBCP	14-Sep-22	Hydropsychidae	4	40	0.004	0.04	RG_FOBCP_HESS-4_2022-09-14	
RG_FOBCP	14-Sep-22	Rhyacophilidae	2	20	0.0004	0.004	RG_FOBCP_HESS-4_2022-09-14	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID
Mine-Exposed	RG_FOBCP	14-Sep-22	Chironomidae	14	140	0.0234	0.234	RG_FOBCP_HESS-4_2022-09-14
	RG_FOBCP	14-Sep-22	Empididae	12	120	0.0172	0.172	RG_FOBCP_HESS-4_2022-09-14
	RG_FOBCP	14-Sep-22	Psychodidae	982	9820	0.3852	3.852	RG_FOBCP_HESS-4_2022-09-14
	RG_FOBCP	14-Sep-22	Pediciidae	12	120	0.009	0.09	RG_FOBCP_HESS-4_2022-09-14
	RG_FOBCP	14-Sep-22	Nemata	16	160	0.0106	0.106	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Planariidae	3	30	0.0045	0.045	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Enchytraeidae	1	10	0.0004	0.004	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Naididae	2	20	0.0003	0.003	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Lebertiidae	4	40	0.0007	0.007	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Baetidae	8	80	0.0257	0.257	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Ephemerellidae	11	110	0.0279	0.279	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Heptageniidae	188	1880	0.2736	2.736	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Capniidae	4	40	0.0009	0.009	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Chloroperlidae	3	30	0.0051	0.051	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Nemouridae	26	260	0.0096	0.096	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Periodidae	66	660	0.1436	1.436	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Taeniopterygidae	20	200	0.0037	0.037	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Apataniidae	1	10	0.0014	0.014	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Brachycentridae	2	20	0.0001	0.001	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Glossosomatidae	3	30	0.0048	0.048	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Hydropsychidae	40	400	0.0883	0.883	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Limnephilidae	1	10	0.0001	0.001	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Rhyacophilidae	14	140	0.2461	2.461	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Ceratopogonidae	3	30	0.001	0.01	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Chironomidae	22	220	0.0095	0.095	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Empididae	2	20	0.0028	0.028	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Psychodidae	303	3030	0.0907	0.907	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Simuliidae	1	10	0.0011	0.011	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Pediciidae	1	10	0.0003	0.003	RG_FOBCP_HESS-5_2022-09-14
	RG_FOBCP	14-Sep-22	Nemata	14	140	0.0062	0.062	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Enchytraeidae	2	20	0.0006	0.006	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Lebertiidae	10	100	0.0016	0.016	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Ephemerellidae	54	540	0.1206	1.206	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Heptageniidae	6	60	0.0678	0.678	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Heptageniidae	244	2440	0.2604	2.604	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Capniidae	2	20	0.0016	0.016	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Chloroperlidae	8	80	0.0218	0.218	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Nemouridae	42	420	0.166	1.66	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Perlidae	2	20	0.6562	6.562	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Periodidae	44	440	0.019	0.19	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Taeniopterygidae	16	160	0.0028	0.028	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Apataniidae	2	20	0.0022	0.022	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Glossosomatidae	4	40	0.011	0.11	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Hydropsychidae	26	260	0.0846	0.846	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Rhyacophilidae	5	50	0.0751	0.751	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Rhyacophilidae	16	160	0.0086	0.086	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Ceratopogonidae	2	20	0.0002	0.002	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Chironomidae	14	140	0.0038	0.038	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Psychodidae	302	3020	0.085	0.85	RG_FOBCP_HESS-6_2022-09-14
	RG_FOBCP	14-Sep-22	Nemata	11	110	0.0073	0.073	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Planariidae	1	10	0.0004	0.004	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Enchytraeidae	1	10	0.0013	0.013	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Naididae	1	10	0.0002	0.002	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Lebertiidae	5	50	0.0013	0.013	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Ostracoda	1	10	0.0003	0.003	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Elmidae	1	10	0.0002	0.002	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Baetidae	9	90	0.0184	0.184	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Ephemerellidae	16	160	0.0312	0.312	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Heptageniidae	94	940	0.084	0.84	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Capniidae	1	10	0.0001	0.001	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Chloroperlidae	2	20	0.0014	0.014	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Nemouridae	37	370	0.0142	0.142	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Perlidae	3	30	0.043	0.43	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Periodidae	29	290	0.0524	0.524	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Taeniopterygidae	11	110	0.0017	0.017	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Glossosomatidae	2	20	0.0162	0.162	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Hydropsychidae	45	450	0.0793	0.793	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Rhyacophilidae	29	290	0.0618	0.618	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Ceratopogonidae	3	30	0.0013	0.013	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Chironomidae	59	590	0.025	0.25	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Empididae	1	10	0.0022	0.022	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Pelecorynchidae	1	10	0.0003	0.003	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Psychodidae	185	1850	0.0535	0.535	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Simuliidae	21	210	0.0809	0.809	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Limoniidae	1	10	0.0015	0.015	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Pediciidae	2	20	0.0021	0.021	RG_FOBCP_HESS-7_2022-09-14
	RG_FOBCP	14-Sep-22	Nemata	2	20	0.004	0.04	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Planariidae	2	20	0.0034	0.034	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Enchytraeidae	4	40	0.0016	0.016	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Naididae	2	20	0.0014	0.014	RG_FOBCP_HESS-8_2022-09-14
RG_FOBCP	14-Sep-22	Lebertiidae	18	180	0.0062	0.062	RG_FOBCP_HESS-8_2022-09-14	
RG_FOBCP	14-Sep-22	Hydryphantidae	2	20	0.0004	0.004	RG_FOBCP_HESS-8_2022-09-14	
RG_FOBCP	14-Sep-22	Ostracoda	4	40	0.0016	0.016	RG_FOBCP_HESS-8_2022-09-14	
RG_FOBCP	14-Sep-22	Elmidae	2	20	0.0024	0.024	RG_FOBCP_HESS-8_2022-09-14	
RG_FOBCP	14-Sep-22	Baetidae	10	100	0.024	0.24	RG_FOBCP_HESS-8_2022-09-14	
RG_FOBCP	14-Sep-22	Ephemerellidae	12	120	0.0312	0.312	RG_FOBCP_HESS-8_2022-09-14	
RG_FOBCP	14-Sep-22	Heptageniidae	1	10	0.0084	0.084	RG_FOBCP_HESS-8_2022-09-14	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID
Mine-Exposed	RG_FOBCP	14-Sep-22	Heptageniidae	148	1480	0.1294	1.294	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Capniidae	10	100	0.004	0.04	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Chloroperlidae	8	80	0.013	0.13	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Nemouridae	72	720	0.053	0.53	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Perlidae	1	10	0.1455	1.455	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Perlodidae	3	30	0.0501	0.501	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Perlodidae	72	720	0.0378	0.378	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Taeniopterygidae	8	80	0.0014	0.014	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Brachycentridae	4	40	0.0006	0.006	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Glossosomatidae	12	120	0.0724	0.724	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Hydropsychidae	40	400	0.08	0.8	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Rhyacophilidae	3	30	0.0436	0.436	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Rhyacophilidae	6	60	0.0296	0.296	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Ceratopogonidae	6	60	0.0018	0.018	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Chironomidae	8	80	0.0122	0.122	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Psychodidae	316	3160	0.084	0.84	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Simuliidae	4	40	0.014	0.14	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Pediciidae	4	40	0.0114	0.114	RG_FOBCP_HESS-8_2022-09-14
	RG_FOBCP	14-Sep-22	Nemata	4	40	0.002	0.02	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Planariidae	2	20	0.0039	0.039	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Enchytraeidae	5	50	0.0021	0.021	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Lebertiidae	2	20	0.0008	0.008	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Ostracoda	2	20	0.0005	0.005	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Elmidae	3	30	0.0033	0.033	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Baetidae	2	20	0.0113	0.113	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Ephemerellidae	11	110	0.0188	0.188	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Heptageniidae	93	930	0.0737	0.737	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Nemouridae	13	130	0.0155	0.155	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Perlodidae	17	170	0.0409	0.409	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Taeniopterygidae	2	20	0.0004	0.004	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Apataniidae	2	20	0.0018	0.018	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Brachycentridae	1	10	0.0001	0.001	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Glossosomatidae	3	30	0.0153	0.153	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Hydropsychidae	2	20	0.002	0.02	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Rhyacophilidae	5	50	0.022	0.22	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Uenoidae	1	10	0.0001	0.001	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Ceratopogonidae	1	10	0.0003	0.003	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Chironomidae	14	140	0.0124	0.124	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Psychodidae	246	2460	0.0859	0.859	RG_FOBCP_HESS-9_2022-09-14
	RG_FOBCP	14-Sep-22	Nemata	3	30	0.0009	0.009	RG_FOBCP_HESS-10_2022-09-14
	RG_FOBCP	14-Sep-22	Planariidae	1	10	0.0026	0.026	RG_FOBCP_HESS-10_2022-09-14
	RG_FOBCP	14-Sep-22	Enchytraeidae	1	10	0.0005	0.005	RG_FOBCP_HESS-10_2022-09-14
	RG_FOBCP	14-Sep-22	Naididae	1	10	0.0001	0.001	RG_FOBCP_HESS-10_2022-09-14
	RG_FOBCP	14-Sep-22	Lebertiidae	6	60	0.0017	0.017	RG_FOBCP_HESS-10_2022-09-14
	RG_FOBCP	14-Sep-22	Ostracoda	2	20	0.0007	0.007	RG_FOBCP_HESS-10_2022-09-14
	RG_FOBCP	14-Sep-22	Ameletidae	1	10	0.0139	0.139	RG_FOBCP_HESS-10_2022-09-14
	RG_FOBCP	14-Sep-22	Baetidae	2	20	0.0008	0.008	RG_FOBCP_HESS-10_2022-09-14
	RG_FOBCP	14-Sep-22	Ephemerellidae	7	70	0.0105	0.105	RG_FOBCP_HESS-10_2022-09-14
	RG_FOBCP	14-Sep-22	Heptageniidae	123	1230	0.0552	0.552	RG_FOBCP_HESS-10_2022-09-14
	RG_FOBCP	14-Sep-22	Chloroperlidae	2	20	0.005	0.05	RG_FOBCP_HESS-10_2022-09-14
	RG_FOBCP	14-Sep-22	Nemouridae	6	60	0.0044	0.044	RG_FOBCP_HESS-10_2022-09-14
	RG_FOBCP	14-Sep-22	Perlidae	1	10	0.0126	0.126	RG_FOBCP_HESS-10_2022-09-14
	RG_FOBCP	14-Sep-22	Perlodidae	25	250	0.0127	0.127	RG_FOBCP_HESS-10_2022-09-14
	RG_FOBCP	14-Sep-22	Taeniopterygidae	10	100	0.0025	0.025	RG_FOBCP_HESS-10_2022-09-14
	RG_FOBCP	14-Sep-22	Glossosomatidae	2	20	0.0089	0.089	RG_FOBCP_HESS-10_2022-09-14
	RG_FOBCP	14-Sep-22	Hydropsychidae	4	40	0.0086	0.086	RG_FOBCP_HESS-10_2022-09-14
	RG_FOBCP	14-Sep-22	Rhyacophilidae	4	40	0.0142	0.142	RG_FOBCP_HESS-10_2022-09-14
RG_FOBCP	14-Sep-22	Ceratopogonidae	1	10	0.0003	0.003	RG_FOBCP_HESS-10_2022-09-14	
RG_FOBCP	14-Sep-22	Chironomidae	9	90	0.0101	0.101	RG_FOBCP_HESS-10_2022-09-14	
RG_FOBCP	14-Sep-22	Empididae	2	20	0.0031	0.031	RG_FOBCP_HESS-10_2022-09-14	
RG_FOBCP	14-Sep-22	Psychodidae	104	1040	0.0249	0.249	RG_FOBCP_HESS-10_2022-09-14	
RG_FOBCP	14-Sep-22	Pediciidae	2	20	0.0011	0.011	RG_FOBCP_HESS-10_2022-09-14	
RG_FRCP1SW	19-Sep-22	Nemata	2	20	0.0053	0.053	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Planariidae	1	10	0.0034	0.034	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Lumbricidae	1	10	0.0186	0.186	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Lebertiidae	3	30	0.0001	0.001	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Ostracoda	1	10	0.0001	0.001	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Ephemerellidae	2	20	0.0001	0.001	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Heptageniidae	14	140	0.01	0.1	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Capniidae	2	20	0.0001	0.001	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Chloroperlidae	4	40	0.0082	0.082	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Nemouridae	1	10	0.0039	0.039	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Perlodidae	14	140	0.0365	0.365	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Apataniidae	15	150	0.0141	0.141	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Rhyacophilidae	4	40	0.0133	0.133	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Ceratopogonidae	6	60	0.0007	0.007	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Chironomidae	3	30	0.0004	0.004	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Empididae	2	20	0.0003	0.003	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Psychodidae	238	2380	0.112	1.12	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Limoniidae	1	10	0.0017	0.017	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Pediciidae	2	20	0.0018	0.018	RG_FRCP1SW_HESS-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Nemata	1	10	0.0004	0.004	RG_FRCP1SW_HESS-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Planariidae	1	10	0.0006	0.006	RG_FRCP1SW_HESS-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Lebertiidae	23	230	0.0061	0.061	RG_FRCP1SW_HESS-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Ostracoda	1	10	0.0005	0.005	RG_FRCP1SW_HESS-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Elmidae	1	10	0.0008	0.008	RG_FRCP1SW_HESS-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Baetidae	6	60	0.032	0.32	RG_FRCP1SW_HESS-2_2022-09-19	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID	
Mine-Exposed	RG_FRCP1SW	19-Sep-22	Ephemereillidae	7	70	0.0207	0.207	RG_FRCP1SW_HESS-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Heptageniidae	151	1510	0.0667	0.667	RG_FRCP1SW_HESS-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Capniidae	11	110	0.0104	0.104	RG_FRCP1SW_HESS-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Chloroperlidae	3	30	0.0092	0.092	RG_FRCP1SW_HESS-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Nemouridae	67	670	0.0205	0.205	RG_FRCP1SW_HESS-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Perlidae	1	10	0.1719	1.719	RG_FRCP1SW_HESS-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Perlodidae	90	900	0.1388	1.388	RG_FRCP1SW_HESS-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Taeniopterygidae	37	370	0.0104	0.104	RG_FRCP1SW_HESS-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Apataniidae	5	50	0.0073	0.073	RG_FRCP1SW_HESS-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Glossosomatidae	4	40	0.0018	0.018	RG_FRCP1SW_HESS-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Hydropsychidae	8	80	0.0359	0.359	RG_FRCP1SW_HESS-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Rhyacophilidae	2	20	0.0215	0.215	RG_FRCP1SW_HESS-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ceratopogonidae	12	120	0.0062	0.062	RG_FRCP1SW_HESS-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Chironomidae	19	190	0.0166	0.166	RG_FRCP1SW_HESS-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Empididae	2	20	0.0027	0.027	RG_FRCP1SW_HESS-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Psychodidae	190	1900	0.0858	0.858	RG_FRCP1SW_HESS-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Limoniidae	3	30	0.049	0.49	RG_FRCP1SW_HESS-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Nemata	1	10	0.0006	0.006	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Planariidae	2	20	0.0079	0.079	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Enchytraeidae	1	10	0.0003	0.003	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Naididae	6	60	0.001	0.01	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Lebertiidae	56	560	0.0075	0.075	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ostracoda	1	10	0.0006	0.006	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Elmidae	1	10	0.0004	0.004	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Baetidae	13	130	0.0429	0.429	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ephemereillidae	15	150	0.055	0.55	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Heptageniidae	275	2750	0.1404	1.404	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Capniidae	11	110	0.012	0.12	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Chloroperlidae	10	100	0.0112	0.112	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Nemouridae	84	840	0.0442	0.442	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Perlidae	4	40	0.4963	4.963	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Perlodidae	89	890	0.2706	2.706	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Taeniopterygidae	89	890	0.025	0.25	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Apataniidae	2	20	0.0039	0.039	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Glossosomatidae	10	100	0.0405	0.405	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Hydropsychidae	2	20	0.0058	0.058	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Rhyacophilidae	6	60	0.0646	0.646	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ceratopogonidae	14	140	0.0052	0.052	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Chironomidae	60	600	0.0175	0.175	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Empididae	1	10	0.0009	0.009	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Psychodidae	419	4190	0.2516	2.516	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Pediciidae	5	50	0.007	0.07	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Limoniidae	7	70	0.0185	0.185	RG_FRCP1SW_HESS-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Nemata	1	10	0.0002	0.002	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Lebertiidae	30	300	0.0072	0.072	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ostracoda	2	20	0.0005	0.005	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Elmidae	2	20	0.0004	0.004	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ameletidae	3	30	0.0655	0.655	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Baetidae	2	20	0.0149	0.149	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ephemereillidae	4	40	0.0137	0.137	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Heptageniidae	91	910	0.0613	0.613	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Capniidae	5	50	0.0017	0.017	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Chloroperlidae	8	80	0.0118	0.118	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Nemouridae	17	170	0.0195	0.195	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Perlodidae	37	370	0.0652	0.652	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Taeniopterygidae	11	110	0.0048	0.048	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Apataniidae	11	110	0.0202	0.202	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Glossosomatidae	6	60	0.0083	0.083	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Rhyacophilidae	2	20	0.0016	0.016	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ceratopogonidae	1	10	0.0002	0.002	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Chironomidae	15	150	0.0078	0.078	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Psychodidae	178	1780	0.0822	0.822	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Limoniidae	9	90	0.1183	1.183	RG_FRCP1SW_HESS-4_2022-09-19
	RG_FRCP1SW	19-Sep-22	Nemata	4	40	0.0065	0.065	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Planariidae	2	20	0.0033	0.033	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Enchytraeidae	7	70	0.0014	0.014	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Lumbricidae	1	10	0.0179	0.179	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Lebertiidae	61	610	0.0177	0.177	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ostracoda	3	30	0.0015	0.015	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Elmidae	2	20	0.0034	0.034	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ameletidae	4	40	0.0053	0.053	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Baetidae	5	50	0.0234	0.234	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ephemereillidae	13	130	0.0347	0.347	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Heptageniidae	209	2090	0.143	1.43	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Capniidae	9	90	0.0044	0.044	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Chloroperlidae	2	20	0.0012	0.012	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Nemouridae	132	1320	0.0712	0.712	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Perlodidae	132	1320	0.3603	3.603	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Taeniopterygidae	49	490	0.0141	0.141	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Apataniidae	38	380	0.0533	0.533	RG_FRCP1SW_HESS-5_2022-09-19
RG_FRCP1SW	19-Sep-22	Brachycentridae	4	40	0.0541	0.541	RG_FRCP1SW_HESS-5_2022-09-19	
RG_FRCP1SW	19-Sep-22	Glossosomatidae	4	40	0.0014	0.014	RG_FRCP1SW_HESS-5_2022-09-19	
RG_FRCP1SW	19-Sep-22	Hydropsychidae	13	130	0.0515	0.515	RG_FRCP1SW_HESS-5_2022-09-19	
RG_FRCP1SW	19-Sep-22	Hydroptilidae	3	30	0.0046	0.046	RG_FRCP1SW_HESS-5_2022-09-19	
RG_FRCP1SW	19-Sep-22	Limnephilidae	2	20	0.0003	0.003	RG_FRCP1SW_HESS-5_2022-09-19	
RG_FRCP1SW	19-Sep-22	Rhyacophilidae	11	110	0.0961	0.961	RG_FRCP1SW_HESS-5_2022-09-19	
RG_FRCP1SW	19-Sep-22	Ceratopogonidae	16	160	0.0073	0.073	RG_FRCP1SW_HESS-5_2022-09-19	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID
Mine-Exposed	RG_FRCP1SW	19-Sep-22	Chironomidae	66	660	0.0346	0.346	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Empididae	1	10	0.0005	0.005	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Psychodidae	324	3240	0.1963	1.963	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Limonidae	6	60	0.1374	1.374	RG_FRCP1SW_HESS-5_2022-09-19
	RG_FRCP1SW	19-Sep-22	Nemata	4	40	0.0062	0.062	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Planariidae	4	40	0.0232	0.232	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Enchytraeidae	2	20	0.0004	0.004	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Lebertiidae	130	1300	0.0342	0.342	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Sperchontidae	4	40	0.0014	0.014	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ostracoda	4	40	0.0006	0.006	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ameletidae	16	160	0.1178	1.178	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Baetidae	6	60	0.0268	0.268	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ephemerellidae	26	260	0.0722	0.722	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Heptageniidae	80	800	0.0632	0.632	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Capniidae	48	480	0.0918	0.918	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Chloroperlidae	10	100	0.0136	0.136	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Nemouridae	8	80	0.0006	0.006	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Perlodidae	356	3560	0.2646	2.646	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Apataniidae	40	400	0.021	0.21	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Glossosomatidae	2	20	0.0002	0.002	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Limnephilidae	2	20	0.0004	0.004	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Rhyacophilidae	12	120	0.0946	0.946	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ceratopogonidae	8	80	0.0026	0.026	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Chironomidae	64	640	0.0536	0.536	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Empididae	28	280	0.031	0.31	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Pelecorhynchoidea	8	80	0.0558	0.558	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Psychodidae	16	160	0.002	0.02	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Pediciidae	8	80	0.0026	0.026	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Tipulidae	2	20	1.0081	10.081	RG_FRCP1SW_HESS-6_2022-09-19
	RG_FRCP1SW	19-Sep-22	Planariidae	1	10	0.0001	0.001	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Enchytraeidae	18	180	0.0034	0.034	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Lumbricidae	1	10	0.0079	0.079	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Lebertiidae	42	420	0.011	0.11	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Elmidae	3	30	0.0006	0.006	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ameletidae	1	10	0.0017	0.017	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Baetidae	3	30	0.0071	0.071	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ephemerellidae	7	70	0.018	0.18	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Heptageniidae	158	1580	0.097	0.97	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Capniidae	2	20	0.0014	0.014	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Chloroperlidae	2	20	0.0045	0.045	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Nemouridae	24	240	0.018	0.18	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Perlidae	1	10	0.0137	0.137	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Perlodidae	23	230	0.0092	0.092	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Taeniopterygidae	20	200	0.0074	0.074	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Apataniidae	2	20	0.0027	0.027	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Glossosomatidae	4	40	0.0207	0.207	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Rhyacophilidae	6	60	0.0241	0.241	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ceratopogonidae	5	50	0.0016	0.016	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Chironomidae	38	380	0.0106	0.106	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Empididae	1	10	0.0011	0.011	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Psychodidae	359	3590	0.163	1.63	RG_FRCP1SW_HESS-7_2022-09-19
	RG_FRCP1SW	19-Sep-22	Nemata	3	30	0.0004	0.004	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Planariidae	4	40	0.0078	0.078	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Enchytraeidae	4	40	0.0005	0.005	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Lumbricidae	1	10	0.0017	0.017	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Lebertiidae	25	250	0.0086	0.086	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ostracoda	2	20	0.0005	0.005	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ameletidae	2	20	0.0387	0.387	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Baetidae	3	30	0.0167	0.167	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ephemerellidae	12	120	0.0201	0.201	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Heptageniidae	27	270	0.0118	0.118	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Capniidae	2	20	0.0001	0.001	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Chloroperlidae	2	20	0.0017	0.017	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Nemouridae	4	40	0.0026	0.026	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Perlodidae	13	130	0.0536	0.536	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Taeniopterygidae	3	30	0.0005	0.005	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Apataniidae	10	100	0.0338	0.338	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Glossosomatidae	1	10	0.01	0.1	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Rhyacophilidae	3	30	0.0298	0.298	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ceratopogonidae	4	40	0.0018	0.018	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Chironomidae	18	180	0.0077	0.077	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Psychodidae	188	1880	0.0893	0.893	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Pediciidae	3	30	0.0012	0.012	RG_FRCP1SW_HESS-8_2022-09-19
	RG_FRCP1SW	19-Sep-22	Nemata	2	20	0.0016	0.016	RG_FRCP1SW_HESS-9_2022-09-19
	RG_FRCP1SW	19-Sep-22	Planariidae	1	10	0.0008	0.008	RG_FRCP1SW_HESS-9_2022-09-19
	RG_FRCP1SW	19-Sep-22	Enchytraeidae	2	20	0.0002	0.002	RG_FRCP1SW_HESS-9_2022-09-19
	RG_FRCP1SW	19-Sep-22	Lebertiidae	16	160	0.0062	0.062	RG_FRCP1SW_HESS-9_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ostracoda	4	40	0.0007	0.007	RG_FRCP1SW_HESS-9_2022-09-19
	RG_FRCP1SW	19-Sep-22	Ameletidae	1	10	0.0216	0.216	RG_FRCP1SW_HESS-9_2022-09-19
	RG_FRCP1SW	19-Sep-22	Baetidae	2	20	0.0116	0.116	RG_FRCP1SW_HESS-9_2022-09-19
RG_FRCP1SW	19-Sep-22	Ephemerellidae	5	50	0.0167	0.167	RG_FRCP1SW_HESS-9_2022-09-19	
RG_FRCP1SW	19-Sep-22	Heptageniidae	23	230	0.0092	0.092	RG_FRCP1SW_HESS-9_2022-09-19	
RG_FRCP1SW	19-Sep-22	Capniidae	3	30	0.0004	0.004	RG_FRCP1SW_HESS-9_2022-09-19	
RG_FRCP1SW	19-Sep-22	Chloroperlidae	2	20	0.0038	0.038	RG_FRCP1SW_HESS-9_2022-09-19	
RG_FRCP1SW	19-Sep-22	Nemouridae	3	30	0.0207	0.207	RG_FRCP1SW_HESS-9_2022-09-19	
RG_FRCP1SW	19-Sep-22	Perlodidae	11	110	0.0792	0.792	RG_FRCP1SW_HESS-9_2022-09-19	
RG_FRCP1SW	19-Sep-22	Taeniopterygidae	1	10	0.0003	0.003	RG_FRCP1SW_HESS-9_2022-09-19	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID	
Reference	RG_FRCP1SW	19-Sep-22	Apataniidae	11	110	0.0162	0.162	RG_FRCP1SW_HESS-9_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Hydropsychidae	1	10	0.0014	0.014	RG_FRCP1SW_HESS-9_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Rhyacophilidae	3	30	0.0335	0.335	RG_FRCP1SW_HESS-9_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Ceratopogonidae	5	50	0.0021	0.021	RG_FRCP1SW_HESS-9_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Chironomidae	11	110	0.0098	0.098	RG_FRCP1SW_HESS-9_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Psychodidae	123	1230	0.0735	0.735	RG_FRCP1SW_HESS-9_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Pediciidae	3	30	0.0024	0.024	RG_FRCP1SW_HESS-9_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Nemata	2	20	0.0039	0.039	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Planariidae	1	10	0.0002	0.002	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Enchytraeidae	1	10	0.0001	0.001	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Naididae	14	140	0.0015	0.015	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Lebertiidae	47	470	0.011	0.11	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Ostracoda	13	130	0.003	0.03	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Elmidae	1	10	0.0001	0.001	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Ameletidae	3	30	0.0691	0.691	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Baetidae	2	20	0.0062	0.062	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Ephemerellidae	14	140	0.039	0.39	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Heptageniidae	45	450	0.0162	0.162	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Capniidae	6	60	0.003	0.03	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Chloroperlidae	1	10	0.0016	0.016	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Nemouridae	23	230	0.0461	0.461	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Perlodidae	15	150	0.1489	1.489	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Taeniopterygidae	1	10	0.0001	0.001	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Apataniidae	19	190	0.0201	0.201	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Rhyacophilidae	3	30	0.0214	0.214	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Ceratopogonidae	9	90	0.003	0.03	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Chironomidae	19	190	0.0116	0.116	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Empididae	2	20	0.0006	0.006	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Psychodidae	408	4080	0.1971	1.971	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Simuliidae	1	10	0.0024	0.024	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Pediciidae	11	110	0.0157	0.157	RG_FRCP1SW_HESS-10_2022-09-19	
	RG_FRCP1SW	19-Sep-22	Tipulidae	1	10	0.0022	0.022	RG_FRCP1SW_HESS-10_2022-09-19	
	Mine-Exposed	RG_FRUPO	18-Sep-22	Nemata	14	140	0.0046	0.046	RG_FRUPO_HESS-1_2022-09-18
		RG_FRUPO	18-Sep-22	Enchytraeidae	4	40	0.001	0.01	RG_FRUPO_HESS-1_2022-09-18
		RG_FRUPO	18-Sep-22	Lebertiidae	40	400	0.008	0.08	RG_FRUPO_HESS-1_2022-09-18
		RG_FRUPO	18-Sep-22	Ameletidae	2	20	0.0194	0.194	RG_FRUPO_HESS-1_2022-09-18
		RG_FRUPO	18-Sep-22	Baetidae	2	20	0.012	0.12	RG_FRUPO_HESS-1_2022-09-18
		RG_FRUPO	18-Sep-22	Ephemerellidae	22	220	0.0314	0.314	RG_FRUPO_HESS-1_2022-09-18
		RG_FRUPO	18-Sep-22	Heptageniidae	80	800	0.0214	0.214	RG_FRUPO_HESS-1_2022-09-18
		RG_FRUPO	18-Sep-22	Capniidae	20	200	0.0126	0.126	RG_FRUPO_HESS-1_2022-09-18
		RG_FRUPO	18-Sep-22	Chloroperlidae	4	40	0.003	0.03	RG_FRUPO_HESS-1_2022-09-18
		RG_FRUPO	18-Sep-22	Leuctridae	4	40	0.0018	0.018	RG_FRUPO_HESS-1_2022-09-18
		RG_FRUPO	18-Sep-22	Nemouridae	36	360	0.08	0.8	RG_FRUPO_HESS-1_2022-09-18
		RG_FRUPO	18-Sep-22	Perlodidae	166	1660	0.248	2.48	RG_FRUPO_HESS-1_2022-09-18
		RG_FRUPO	18-Sep-22	Apataniidae	20	200	0.0156	0.156	RG_FRUPO_HESS-1_2022-09-18
RG_FRUPO		18-Sep-22	Glossosomatidae	42	420	0.0962	0.962	RG_FRUPO_HESS-1_2022-09-18	
RG_FRUPO		18-Sep-22	Hydropsychidae	4	40	0.0014	0.014	RG_FRUPO_HESS-1_2022-09-18	
RG_FRUPO		18-Sep-22	Rhyacophilidae	30	300	0.5346	5.346	RG_FRUPO_HESS-1_2022-09-18	
RG_FRUPO		18-Sep-22	Uenoidae	4	40	0.0028	0.028	RG_FRUPO_HESS-1_2022-09-18	
RG_FRUPO		18-Sep-22	Ceratopogonidae	10	100	0.0042	0.042	RG_FRUPO_HESS-1_2022-09-18	
RG_FRUPO		18-Sep-22	Chironomidae	524	5240	0.2188	2.188	RG_FRUPO_HESS-1_2022-09-18	
RG_FRUPO		18-Sep-22	Empididae	16	160	0.027	0.27	RG_FRUPO_HESS-1_2022-09-18	
RG_FRUPO		18-Sep-22	Psychodidae	78	780	0.0122	0.122	RG_FRUPO_HESS-1_2022-09-18	
RG_FRUPO		18-Sep-22	Pediciidae	2	20	0.0018	0.018	RG_FRUPO_HESS-1_2022-09-18	
RG_FRUPO		18-Sep-22	Nemata	36	360	0.0036	0.036	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Planariidae	8	80	0.0712	0.712	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Enchytraeidae	28	280	0.004	0.04	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Lumbricidae	4	40	0.0116	0.116	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Naididae	8	80	0.0012	0.012	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Lebertiidae	68	680	0.018	0.18	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Sperchontidae	4	40	0.0016	0.016	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Ostracoda	8	80	0.002	0.02	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Ameletidae	20	200	0.1964	1.964	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Ephemerellidae	44	440	0.08	0.8	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Heptageniidae	124	1240	0.028	0.28	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Capniidae	68	680	0.0556	0.556	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Nemouridae	12	120	0.04	0.4	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Perlodidae	144	1440	0.1628	1.628	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Apataniidae	52	520	0.0372	0.372	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Glossosomatidae	40	400	0.1748	1.748	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Limnephilidae	4	40	0.0004	0.004	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Rhyacophilidae	28	280	0.3864	3.864	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Uenoidae	8	80	0.0036	0.036	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Ceratopogonidae	8	80	0.0024	0.024	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Chironomidae	508	5080	0.1812	1.812	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Empididae	56	560	0.0928	0.928	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO		18-Sep-22	Pelecorhynchidae	4	40	0.0028	0.028	RG_FRUPO_HESS-2_2022-09-18	
RG_FRUPO	18-Sep-22	Psychodidae	224	2240	0.0376	0.376	RG_FRUPO_HESS-2_2022-09-18		
RG_FRUPO	18-Sep-22	Pediciidae	12	120	0.0084	0.084	RG_FRUPO_HESS-2_2022-09-18		
RG_FRUPO	18-Sep-22	Nemata	8	80	0.0008	0.008	RG_FRUPO_HESS-3_2022-09-18		
RG_FRUPO	18-Sep-22	Planariidae	4	40	0.0432	0.432	RG_FRUPO_HESS-3_2022-09-18		
RG_FRUPO	18-Sep-22	Enchytraeidae	32	320	0.004	0.04	RG_FRUPO_HESS-3_2022-09-18		
RG_FRUPO	18-Sep-22	Lumbricidae	4	40	0.0056	0.056	RG_FRUPO_HESS-3_2022-09-18		
RG_FRUPO	18-Sep-22	Naididae	4	40	0.0004	0.004	RG_FRUPO_HESS-3_2022-09-18		
RG_FRUPO	18-Sep-22	Lebertiidae	152	1520	0.0368	0.368	RG_FRUPO_HESS-3_2022-09-18		
RG_FRUPO	18-Sep-22	Ostracoda	8	80	0.0024	0.024	RG_FRUPO_HESS-3_2022-09-18		
RG_FRUPO	18-Sep-22	Elmidae	4	40	0.0004	0.004	RG_FRUPO_HESS-3_2022-09-18		

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID
Mine-Exposed	RG_FRUPO	18-Sep-22	Ameletidae	8	80	0.0596	0.596	RG_FRUPO_HESS-3_2022-09-18
	RG_FRUPO	18-Sep-22	Baetidae	8	80	0.0156	0.156	RG_FRUPO_HESS-3_2022-09-18
	RG_FRUPO	18-Sep-22	Ephemereillidae	40	400	0.026	0.26	RG_FRUPO_HESS-3_2022-09-18
	RG_FRUPO	18-Sep-22	Heptageniidae	228	2280	0.1716	1.716	RG_FRUPO_HESS-3_2022-09-18
	RG_FRUPO	18-Sep-22	Capniidae	32	320	0.088	0.88	RG_FRUPO_HESS-3_2022-09-18
	RG_FRUPO	18-Sep-22	Chloroperlidae	8	80	0.0076	0.076	RG_FRUPO_HESS-3_2022-09-18
	RG_FRUPO	18-Sep-22	Nemouridae	80	800	0.1164	1.164	RG_FRUPO_HESS-3_2022-09-18
	RG_FRUPO	18-Sep-22	Perlodidae	244	2440	0.438	4.38	RG_FRUPO_HESS-3_2022-09-18
	RG_FRUPO	18-Sep-22	Apataniidae	12	120	0.008	0.08	RG_FRUPO_HESS-3_2022-09-18
	RG_FRUPO	18-Sep-22	Glossosomatidae	32	320	0.0672	0.672	RG_FRUPO_HESS-3_2022-09-18
	RG_FRUPO	18-Sep-22	Rhyacophilidae	32	320	0.4172	4.172	RG_FRUPO_HESS-3_2022-09-18
	RG_FRUPO	18-Sep-22	Ceratopogonidae	24	240	0.0176	0.176	RG_FRUPO_HESS-3_2022-09-18
	RG_FRUPO	18-Sep-22	Chironomidae	692	6920	0.282	2.82	RG_FRUPO_HESS-3_2022-09-18
	RG_FRUPO	18-Sep-22	Empididae	60	600	0.088	0.88	RG_FRUPO_HESS-3_2022-09-18
	RG_FRUPO	18-Sep-22	Psychodidae	188	1880	0.0352	0.352	RG_FRUPO_HESS-3_2022-09-18
	RG_FRUPO	18-Sep-22	Pediciidae	20	200	0.008	0.08	RG_FRUPO_HESS-3_2022-09-18
	RG_FRUPO	18-Sep-22	Tipulidae	1	10	0.7426	7.426	RG_FRUPO_HESS-3_2022-09-18
	RG_FRUPO	18-Sep-22	Nemata	10	100	0.0066	0.066	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Planariidae	6	60	0.0204	0.204	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Enchytraeidae	18	180	0.0022	0.022	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Naididae	4	40	0.0008	0.008	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Lebertiidae	10	100	0.0026	0.026	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Sperchontidae	2	20	0.0012	0.012	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Elmidae	4	40	0.004	0.04	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Ameletidae	2	20	0.009	0.09	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Baetidae	6	60	0.0176	0.176	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Ephemereillidae	16	160	0.0312	0.312	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Heptageniidae	18	180	0.0046	0.046	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Capniidae	10	100	0.0088	0.088	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Chloroperlidae	6	60	0.008	0.08	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Nemouridae	26	260	0.1138	1.138	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Perlodidae	230	2300	0.2806	2.806	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Taeniopterygidae	2	20	0.0004	0.004	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Apataniidae	6	60	0.0038	0.038	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Glossosomatidae	76	760	0.0782	0.782	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Limnephilidae	2	20	0.0004	0.004	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Rhyacophilidae	38	380	0.531	5.31	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Ceratopogonidae	10	100	0.0042	0.042	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Chironomidae	360	3600	0.1824	1.824	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Empididae	42	420	0.0642	0.642	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Psychodidae	36	360	0.0056	0.056	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Limoniidae	4	40	0.0218	0.218	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Pediciidae	10	100	0.0072	0.072	RG_FRUPO_HESS-4_2022-09-18
	RG_FRUPO	18-Sep-22	Nemata	10	100	0.001	0.01	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Enchytraeidae	18	180	0.0024	0.024	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Lebertiidae	98	980	0.026	0.26	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Elmidae	4	40	0.0048	0.048	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Ameletidae	2	20	0.0354	0.354	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Ephemereillidae	20	200	0.0352	0.352	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Heptageniidae	16	160	0.0038	0.038	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Capniidae	6	60	0.0056	0.056	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Chloroperlidae	6	60	0.0012	0.012	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Nemouridae	8	80	0.0192	0.192	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Perlodidae	170	1700	0.1192	1.192	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Apataniidae	18	180	0.013	0.13	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Glossosomatidae	22	220	0.0436	0.436	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Rhyacophilidae	34	340	0.3718	3.718	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Ceratopogonidae	4	40	0.0026	0.026	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Chironomidae	278	2780	0.095	0.95	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Empididae	56	560	0.0804	0.804	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Pelecorynchidae	1	10	0.0273	0.273	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Pelecorynchidae	4	40	0.0264	0.264	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Psychodidae	46	460	0.0094	0.094	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Pediciidae	4	40	0.0026	0.026	RG_FRUPO_HESS-5_2022-09-18
	RG_FRUPO	18-Sep-22	Nemata	1	10	0.0019	0.019	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Nemata	2	20	0.0006	0.006	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Enchytraeidae	2	20	0.0006	0.006	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Naididae	10	100	0.0018	0.018	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Lebertiidae	14	140	0.0032	0.032	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Ostracoda	2	20	0.001	0.01	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Elmidae	2	20	0.0016	0.016	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Ephemereillidae	8	80	0.0196	0.196	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Heptageniidae	218	2180	0.0858	0.858	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Capniidae	16	160	0.0124	0.124	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Chloroperlidae	4	40	0.0088	0.088	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Nemouridae	58	580	0.0152	0.152	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Perlidae	1	10	0.0155	0.155	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Perlodidae	4	40	0.1768	1.768	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Perlodidae	118	1180	0.0928	0.928	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Taeniopterygidae	92	920	0.024	0.24	RG_FRUPO_HESS-6_2022-09-18
RG_FRUPO	18-Sep-22	Apataniidae	6	60	0.003	0.03	RG_FRUPO_HESS-6_2022-09-18	
RG_FRUPO	18-Sep-22	Brachycentridae	4	40	0.0008	0.008	RG_FRUPO_HESS-6_2022-09-18	
RG_FRUPO	18-Sep-22	Glossosomatidae	2	20	0.0008	0.008	RG_FRUPO_HESS-6_2022-09-18	
RG_FRUPO	18-Sep-22	Hydropsychidae	4	40	0.0186	0.186	RG_FRUPO_HESS-6_2022-09-18	
RG_FRUPO	18-Sep-22	Rhyacophilidae	2	20	0.0383	0.383	RG_FRUPO_HESS-6_2022-09-18	
RG_FRUPO	18-Sep-22	Rhyacophilidae	2	20	0.001	0.01	RG_FRUPO_HESS-6_2022-09-18	
RG_FRUPO	18-Sep-22	Ceratopogonidae	2	20	0.0008	0.008	RG_FRUPO_HESS-6_2022-09-18	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

	Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID
Mine-Exposed	RG_FRUPO	18-Sep-22	Chironomidae	34	340	0.0112	0.112	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Psychodidae	414	4140	0.218	2.18	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Limoniidae	2	20	0.0745	0.745	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Limoniidae	2	20	0.0074	0.074	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Tipulidae	2	20	1.0026	10.026	RG_FRUPO_HESS-6_2022-09-18
	RG_FRUPO	18-Sep-22	Nemata	8	80	0.0062	0.062	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Enchytraeidae	6	60	0.0014	0.014	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Lebertiidae	86	860	0.0188	0.188	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Elmidae	6	60	0.0044	0.044	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Baetidae	4	40	0.0442	0.442	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Ephemerellidae	26	260	0.0466	0.466	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Heptageniidae	1	10	0.0235	0.235	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Heptageniidae	56	560	0.0922	0.922	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Capniidae	18	180	0.0196	0.196	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Chloroperlidae	8	80	0.003	0.03	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Nemouridae	8	80	0.0486	0.486	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Perlodidae	1	10	0.0488	0.488	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Perlodidae	286	2860	0.1988	1.988	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Apataniidae	8	80	0.0042	0.042	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Glossosomatidae	22	220	0.0062	0.062	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Hydropsychidae	2	20	0.0006	0.006	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Rhyacophilidae	60	600	0.3146	3.146	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Ceratopogonidae	12	120	0.0056	0.056	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Chironomidae	388	3880	0.2586	2.586	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Empididae	34	340	0.042	0.42	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Pelecorhyncidae	2	20	0.0528	0.528	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Psychodidae	30	300	0.0044	0.044	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Pediciidae	8	80	0.004	0.04	RG_FRUPO_HESS-7_2022-09-18
	RG_FRUPO	18-Sep-22	Nemata	12	120	0.0016	0.016	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Planariidae	2	20	0.009	0.09	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Enchytraeidae	2	20	0.0004	0.004	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Lebertiidae	44	440	0.0084	0.084	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Baetidae	2	20	0.0244	0.244	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Ephemerellidae	32	320	0.0366	0.366	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Heptageniidae	122	1220	0.0724	0.724	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Capniidae	8	80	0.0058	0.058	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Chloroperlidae	14	140	0.0078	0.078	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Nemouridae	20	200	0.0278	0.278	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Perlodidae	2	20	0.0528	0.528	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Perlodidae	356	3560	0.4382	4.382	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Apataniidae	8	80	0.0058	0.058	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Glossosomatidae	22	220	0.0224	0.224	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Limnephilidae	4	40	0.001	0.01	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Rhyacophilidae	62	620	0.4374	4.374	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Ceratopogonidae	14	140	0.0066	0.066	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Chironomidae	248	2480	0.1408	1.408	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Empididae	10	100	0.0172	0.172	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Psychodidae	38	380	0.0078	0.078	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Pediciidae	4	40	0.0024	0.024	RG_FRUPO_HESS-8_2022-09-18
	RG_FRUPO	18-Sep-22	Nemata	2	20	0.0002	0.002	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Planariidae	2	20	0.0016	0.016	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Enchytraeidae	18	180	0.003	0.03	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Lebertiidae	72	720	0.0166	0.166	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Sperchontidae	2	20	0.0012	0.012	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Ameletidae	22	220	0.2682	2.682	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Ephemerellidae	28	280	0.0686	0.686	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Heptageniidae	46	460	0.1038	1.038	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Capniidae	4	40	0.0074	0.074	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Chloroperlidae	8	80	0.0024	0.024	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Nemouridae	24	240	0.0572	0.572	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Perlodidae	256	2560	0.2812	2.812	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Taeniopterygidae	2	20	0.0002	0.002	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Apataniidae	12	120	0.0072	0.072	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Glossosomatidae	28	280	0.0056	0.056	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Hydropsychidae	2	20	0.0014	0.014	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Limnephilidae	2	20	0.0002	0.002	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Rhyacophilidae	34	340	0.1626	1.626	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Uenoidae	2	20	0.0002	0.002	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Ceratopogonidae	12	120	0.004	0.04	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Chironomidae	296	2960	0.1092	1.092	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Empididae	48	480	0.0644	0.644	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Psychodidae	62	620	0.0122	0.122	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Limoniidae	1	10	0.1027	1.027	RG_FRUPO_HESS-9_2022-09-18
	RG_FRUPO	18-Sep-22	Nemata	6	60	0.0036	0.036	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Planariidae	4	40	0.002	0.02	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Enchytraeidae	10	100	0.0026	0.026	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Lumbriculidae	4	40	0.0062	0.062	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Naididae	4	40	0.0016	0.016	RG_FRUPO_HESS-10_2022-09-18
RG_FRUPO	18-Sep-22	Lebertiidae	138	1380	0.0314	0.314	RG_FRUPO_HESS-10_2022-09-18	
RG_FRUPO	18-Sep-22	Ostracoda	2	20	0.0002	0.002	RG_FRUPO_HESS-10_2022-09-18	
RG_FRUPO	18-Sep-22	Elmidae	2	20	0.0008	0.008	RG_FRUPO_HESS-10_2022-09-18	
RG_FRUPO	18-Sep-22	Ameletidae	22	220	0.282	2.82	RG_FRUPO_HESS-10_2022-09-18	
RG_FRUPO	18-Sep-22	Baetidae	6	60	0.0306	0.306	RG_FRUPO_HESS-10_2022-09-18	
RG_FRUPO	18-Sep-22	Ephemerellidae	28	280	0.0506	0.506	RG_FRUPO_HESS-10_2022-09-18	
RG_FRUPO	18-Sep-22	Heptageniidae	84	840	0.114	1.14	RG_FRUPO_HESS-10_2022-09-18	
RG_FRUPO	18-Sep-22	Capniidae	24	240	0.0178	0.178	RG_FRUPO_HESS-10_2022-09-18	
RG_FRUPO	18-Sep-22	Chloroperlidae	2	20	0.0018	0.018	RG_FRUPO_HESS-10_2022-09-18	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID	
Mine-Exposed	RG_FRUPO	18-Sep-22	Leuctridae	2	20	0.0006	0.006	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Nemouridae	16	160	0.0262	0.262	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Perlodidae	208	2080	0.2508	2.508	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Apataniidae	20	200	0.0138	0.138	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Glossosomatidae	80	800	0.014	0.14	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Limnephilidae	1	10	0.149	1.49	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Limnephilidae	2	20	0.0002	0.002	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Rhyacophilidae	80	800	0.264	2.64	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Ceratopogonidae	10	100	0.0014	0.014	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Chironomidae	308	3080	0.1854	1.854	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Empididae	34	340	0.0318	0.318	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Muscidae	2	20	0.0136	0.136	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Pelecorhyncidae	2	20	0.0002	0.002	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Psychodidae	94	940	0.018	0.18	RG_FRUPO_HESS-10_2022-09-18
	RG_FRUPO	18-Sep-22	Pediciidae	14	140	0.0082	0.082	RG_FRUPO_HESS-10_2022-09-18
	RG_FO22	9-Sep-22	Nemata	5	50	0.0032	0.032	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Planariidae	7	70	0.0073	0.073	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Naididae	7	70	0.0066	0.066	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Lebertiidae	26	260	0.0054	0.054	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Ostracoda	2	20	0.0007	0.007	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Elmidae	140	1400	0.1202	1.202	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Baetidae	15	150	0.0935	0.935	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Ephemerellidae	16	160	0.0585	0.585	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Heptageniidae	24	240	0.0234	0.234	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Capniidae	10	100	0.0366	0.366	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Chloroperlidae	3	30	0.0076	0.076	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Nemouridae	10	100	0.0327	0.327	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Perlodidae	74	740	0.0908	0.908	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Apataniidae	8	80	0.0263	0.263	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Glossosomatidae	5	50	0.0518	0.518	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Limnephilidae	14	140	0.0022	0.022	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Rhyacophilidae	5	50	0.0262	0.262	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Chironomidae	126	1260	0.101	1.01	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Empididae	6	60	0.0092	0.092	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Psychodidae	2	20	0.0005	0.005	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Pediciidae	7	70	0.0044	0.044	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Tipulidae	5	50	2.216	22.16	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Pisidiidae	50	500	0.0788	0.788	RG_FO22_HESS-1_2022-09-09
	RG_FO22	9-Sep-22	Enchytraeidae	8	80	0.0008	0.008	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Lebertiidae	12	120	0.0032	0.032	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Ostracoda	80	800	0.019	0.19	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Elmidae	98	980	0.094	0.94	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Ameletidae	6	60	0.0388	0.388	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Baetidae	2	20	0.001	0.01	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Ephemerellidae	12	120	0.0278	0.278	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Heptageniidae	2	20	0.0006	0.006	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Capniidae	12	120	0.0148	0.148	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Nemouridae	8	80	0.0276	0.276	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Perlodidae	20	200	0.0224	0.224	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Apataniidae	14	140	0.0086	0.086	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Limnephilidae	22	220	0.0044	0.044	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Rhyacophilidae	6	60	0.052	0.52	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Ceratopogonidae	2	20	0.0002	0.002	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Chironomidae	104	1040	0.0414	0.414	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Empididae	6	60	0.0018	0.018	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Psychodidae	6	60	0.0004	0.004	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Limoniidae	4	40	0.009	0.09	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Tipulidae	8	80	0.042	0.42	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Pisidiidae	154	1540	0.224	2.24	RG_FO22_HESS-2_2022-09-09
	RG_FO22	9-Sep-22	Planariidae	8	80	0.0256	0.256	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Naididae	6	60	0.0002	0.002	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Lebertiidae	16	160	0.0032	0.032	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Ostracoda	8	80	0.0016	0.016	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Elmidae	98	980	0.072	0.72	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Baetidae	68	680	0.4364	4.364	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Ephemerellidae	12	120	0.02	0.2	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Heptageniidae	8	80	0.032	0.32	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Capniidae	8	80	0.0176	0.176	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Nemouridae	6	60	0.0004	0.004	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Perlodidae	144	1440	0.083	0.83	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Apataniidae	30	300	0.0346	0.346	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Glossosomatidae	4	40	0.0062	0.062	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Limnephilidae	30	300	0.0052	0.052	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Rhyacophilidae	8	80	0.0474	0.474	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Ceratopogonidae	2	20	0.0014	0.014	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Chironomidae	24	240	0.024	0.24	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Pediciidae	28	280	0.0172	0.172	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Pisidiidae	14	140	0.0118	0.118	RG_FO22_HESS-3_2022-09-09
	RG_FO22	9-Sep-22	Nemata	4	40	0.0008	0.008	RG_FO22_HESS-4_2022-09-09
	RG_FO22	9-Sep-22	Planariidae	12	120	0.0356	0.356	RG_FO22_HESS-4_2022-09-09
RG_FO22	9-Sep-22	Enchytraeidae	4	40	0.0004	0.004	RG_FO22_HESS-4_2022-09-09	
RG_FO22	9-Sep-22	Naididae	2	20	0.0002	0.002	RG_FO22_HESS-4_2022-09-09	
RG_FO22	9-Sep-22	Lebertiidae	22	220	0.002	0.02	RG_FO22_HESS-4_2022-09-09	
RG_FO22	9-Sep-22	Elmidae	278	2780	0.1936	1.936	RG_FO22_HESS-4_2022-09-09	
RG_FO22	9-Sep-22	Baetidae	52	520	0.3604	3.604	RG_FO22_HESS-4_2022-09-09	
RG_FO22	9-Sep-22	Ephemerellidae	14	140	0.0286	0.286	RG_FO22_HESS-4_2022-09-09	
RG_FO22	9-Sep-22	Heptageniidae	18	180	0.0026	0.026	RG_FO22_HESS-4_2022-09-09	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID	
Mine-Exposed	RG_FO22	9-Sep-22	Capniidae	6	60	0.0084	0.084	RG_FO22_HESS-4_2022-09-09
	RG_FO22	9-Sep-22	Nemouridae	16	160	0.0392	0.392	RG_FO22_HESS-4_2022-09-09
	RG_FO22	9-Sep-22	Perlodidae	160	1600	0.1168	1.168	RG_FO22_HESS-4_2022-09-09
	RG_FO22	9-Sep-22	Taeniopterygidae	4	40	0.0002	0.002	RG_FO22_HESS-4_2022-09-09
	RG_FO22	9-Sep-22	Trichoptera	2	20	0.0002	0.002	RG_FO22_HESS-4_2022-09-09
	RG_FO22	9-Sep-22	Apataniidae	6	60	0.003	0.03	RG_FO22_HESS-4_2022-09-09
	RG_FO22	9-Sep-22	Glossosomatidae	24	240	0.1218	1.218	RG_FO22_HESS-4_2022-09-09
	RG_FO22	9-Sep-22	Limnephilidae	14	140	0.002	0.02	RG_FO22_HESS-4_2022-09-09
	RG_FO22	9-Sep-22	Rhyacophilidae	28	280	0.0584	0.584	RG_FO22_HESS-4_2022-09-09
	RG_FO22	9-Sep-22	Ceratopogonidae	4	40	0.0024	0.024	RG_FO22_HESS-4_2022-09-09
	RG_FO22	9-Sep-22	Chironomidae	84	840	0.0424	0.424	RG_FO22_HESS-4_2022-09-09
	RG_FO22	9-Sep-22	Empididae	16	160	0.024	0.24	RG_FO22_HESS-4_2022-09-09
	RG_FO22	9-Sep-22	Tipulidae	1	10	0.398	3.98	RG_FO22_HESS-4_2022-09-09
	RG_FO22	9-Sep-22	Pediciidae	8	80	0.0048	0.048	RG_FO22_HESS-4_2022-09-09
	RG_FO22	9-Sep-22	Pisidiidae	12	120	0.015	0.15	RG_FO22_HESS-4_2022-09-09
	RG_FO22	9-Sep-22	Nemata	4	40	0.0024	0.024	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Planariidae	22	220	0.027	0.27	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Naididae	4	40	0.0004	0.004	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Sparganophilidae	2	20	0.0308	0.308	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Lebertiidae	22	220	0.0064	0.064	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Elmidae	436	4360	0.4378	4.378	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Baetidae	28	280	0.1232	1.232	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Ephemerellidae	14	140	0.0414	0.414	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Perlodidae	128	1280	0.133	1.33	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Apataniidae	6	60	0.003	0.03	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Glossosomatidae	10	100	0.0078	0.078	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Limnephilidae	10	100	0.0006	0.006	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Rhyacophilidae	18	180	0.5434	5.434	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Ceratopogonidae	10	100	0.005	0.05	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Chironomidae	72	720	0.113	1.13	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Empididae	6	60	0.0132	0.132	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Pelecorhynchidae	2	20	0.0292	0.292	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Psychodidae	12	120	0.0048	0.048	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Tipulidae	2	20	0.7394	7.394	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Limoniidae	2	20	0.0028	0.028	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Pediciidae	6	60	0.0028	0.028	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Pisidiidae	2	20	0.0002	0.002	RG_FO22_HESS-5_2022-09-09
	RG_FO22	9-Sep-22	Planariidae	4	40	0.0312	0.312	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Hygrobatidae	16	160	0.002	0.02	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Lebertiidae	44	440	0.0196	0.196	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Ostracoda	32	320	0.0076	0.076	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Elmidae	512	5120	0.4592	4.592	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Baetidae	12	120	0.078	0.78	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Ephemerellidae	8	80	0.0288	0.288	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Heptageniidae	52	520	0.0152	0.152	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Capniidae	40	400	0.1252	1.252	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Nemouridae	32	320	0.0256	0.256	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Perlodidae	172	1720	0.0896	0.896	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Limnephilidae	36	360	0.02	0.2	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Rhyacophilidae	24	240	0.3172	3.172	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Ceratopogonidae	20	200	0.01	0.1	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Chironomidae	32	320	0.006	0.06	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Empididae	8	80	0.0088	0.088	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Pelecorhynchidae	4	40	0.0512	0.512	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Psychodidae	128	1280	0.0148	0.148	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Tipulidae	11	110	4.1588	41.588	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Tipulidae	4	40	0.0024	0.024	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Pisidiidae	24	240	0.0148	0.148	RG_FO22_HESS-6_2022-09-09
	RG_FO22	9-Sep-22	Nemata	4	40	0.0028	0.028	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Planariidae	28	280	0.0648	0.648	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Enchytraeidae	4	40	0.0032	0.032	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Trombidiformes	4	40	0.0004	0.004	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Hygrobatidae	12	120	0.0084	0.084	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Lebertiidae	20	200	0.0064	0.064	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Ostracoda	12	120	0.0068	0.068	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Elmidae	200	2000	0.1356	1.356	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Baetidae	2	20	0.0216	0.216	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Baetidae	20	200	0.1376	1.376	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Ephemerellidae	4	40	0.0148	0.148	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Heptageniidae	60	600	0.068	0.68	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Capniidae	16	160	0.0604	0.604	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Nemouridae	12	120	0.0428	0.428	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Perlodidae	252	2520	0.1604	1.604	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Apataniidae	4	40	0.002	0.02	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Glossosomatidae	52	520	0.0424	0.424	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Limnephilidae	40	400	0.0344	0.344	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Rhyacophilidae	4	40	0.0587	0.587	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Rhyacophilidae	40	400	0.188	1.88	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Chironomidae	124	1240	0.1224	1.224	RG_FO22_HESS-7_2022-09-09
	RG_FO22	9-Sep-22	Empididae	24	240	0.042	0.42	RG_FO22_HESS-7_2022-09-09
RG_FO22	9-Sep-22	Psychodidae	8	80	0.0056	0.056	RG_FO22_HESS-7_2022-09-09	
RG_FO22	9-Sep-22	Tipulidae	4	40	2.1996	21.996	RG_FO22_HESS-7_2022-09-09	
RG_FO22	9-Sep-22	Tipulidae	16	160	0.0136	0.136	RG_FO22_HESS-7_2022-09-09	
RG_FO22	9-Sep-22	Pisidiidae	8	80	0.01	0.1	RG_FO22_HESS-7_2022-09-09	
RG_FO22	9-Sep-22	Planariidae	4	40	0.006	0.06	RG_FO22_HESS-8_2022-09-09	
RG_FO22	9-Sep-22	Lebertiidae	20	200	0.0064	0.064	RG_FO22_HESS-8_2022-09-09	
RG_FO22	9-Sep-22	Ostracoda	12	120	0.0044	0.044	RG_FO22_HESS-8_2022-09-09	

Table C.5: Raw HESS Benthic Invertebrate Family Density and Biomass from Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Area	Date	Taxa	Abundance	Area Abundance (count/m ²)	Total Biomass (g)	Area Biomass (g/m ²)	Sample ID	
Mine-Exposed	RG_FO22	9-Sep-22	Elmidae	36	360	0.0468	0.468	RG_FO22_HESS-8_2022-09-09
	RG_FO22	9-Sep-22	Baetidae	28	280	0.1168	1.168	RG_FO22_HESS-8_2022-09-09
	RG_FO22	9-Sep-22	Capniidae	12	120	0.002	0.02	RG_FO22_HESS-8_2022-09-09
	RG_FO22	9-Sep-22	Nemouridae	8	80	0.0004	0.004	RG_FO22_HESS-8_2022-09-09
	RG_FO22	9-Sep-22	Perlodidae	144	1440	0.076	0.76	RG_FO22_HESS-8_2022-09-09
	RG_FO22	9-Sep-22	Limnephilidae	4	40	0.0032	0.032	RG_FO22_HESS-8_2022-09-09
	RG_FO22	9-Sep-22	Chironomidae	56	560	0.0288	0.288	RG_FO22_HESS-8_2022-09-09
	RG_FO22	9-Sep-22	Empididae	4	40	0.0048	0.048	RG_FO22_HESS-8_2022-09-09
	RG_FO22	9-Sep-22	Ceratopogonidae	4	40	0.0048	0.048	RG_FO22_HESS-8_2022-09-09
	RG_FO22	9-Sep-22	Tipulidae	4	40	0.89	8.9	RG_FO22_HESS-8_2022-09-09
	RG_FO22	9-Sep-22	Tipulidae	8	80	0.0156	0.156	RG_FO22_HESS-8_2022-09-09
	RG_FO22	9-Sep-22	Pisidiidae	18	180	0.0307	0.307	RG_FO22_HESS-8_2022-09-09
	RG_FO22	9-Sep-22	Pisidiidae	512	5120	0.5684	5.684	RG_FO22_HESS-8_2022-09-09
	RG_FO22	9-Sep-22	Nemata	4	40	0.0002	0.002	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Planariidae	28	280	0.1116	1.116	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Enchytraeidae	6	60	0.0048	0.048	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Lebertiidae	8	80	0.0012	0.012	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Ostracoda	12	120	0.0046	0.046	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Elmidae	70	700	0.0706	0.706	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Ameletidae	3	30	0.0561	0.561	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Ameletidae	6	60	0.0958	0.958	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Baetidae	1	10	0.012	0.12	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Baetidae	26	260	0.0596	0.596	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Ephemereididae	10	100	0.0194	0.194	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Heptageniidae	44	440	0.0102	0.102	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Capniidae	2	20	0.0051	0.051	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Capniidae	18	180	0.046	0.46	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Chloroperlidae	6	60	0.0152	0.152	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Leuctridae	2	20	0.001	0.01	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Nemouridae	1	10	0.0078	0.078	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Nemouridae	20	200	0.018	0.18	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Perlodidae	3	30	0.0317	0.317	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Perlodidae	94	940	0.0712	0.712	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Trichoptera	2	20	0.0002	0.002	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Apataniidae	2	20	0.0158	0.158	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Glossosomatidae	14	140	0.0334	0.334	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Limnephilidae	22	220	0.002	0.02	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Rhyacophilidae	4	40	0.0718	0.718	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Rhyacophilidae	10	100	0.006	0.06	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Chironomidae	106	1060	0.0532	0.532	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Empididae	10	100	0.0058	0.058	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Ceratopogonidae	4	40	0.0038	0.038	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Simuliidae	2	20	0.0076	0.076	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Tipulidae	3	30	0.9244	9.244	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Tipulidae	4	40	0.0048	0.048	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Pisidiidae	18	180	0.0162	0.162	RG_FO22_HESS-9_2022-09-09
	RG_FO22	9-Sep-22	Nemata	12	120	0.003	0.03	RG_FO22_HESS-10_2022-09-09
	RG_FO22	9-Sep-22	Planariidae	42	420	0.0744	0.744	RG_FO22_HESS-10_2022-09-09
	RG_FO22	9-Sep-22	Enchytraeidae	4	40	0.0006	0.006	RG_FO22_HESS-10_2022-09-09
	RG_FO22	9-Sep-22	Naididae	10	100	0.0012	0.012	RG_FO22_HESS-10_2022-09-09
	RG_FO22	9-Sep-22	Lebertiidae	16	160	0.0032	0.032	RG_FO22_HESS-10_2022-09-09
	RG_FO22	9-Sep-22	Sperchontidae	2	20	0.0002	0.002	RG_FO22_HESS-10_2022-09-09
	RG_FO22	9-Sep-22	Ostracoda	6	60	0.0008	0.008	RG_FO22_HESS-10_2022-09-09
	RG_FO22	9-Sep-22	Elmidae	342	3420	0.3032	3.032	RG_FO22_HESS-10_2022-09-09
	RG_FO22	9-Sep-22	Baetidae	26	260	0.1152	1.152	RG_FO22_HESS-10_2022-09-09
	RG_FO22	9-Sep-22	Ephemereididae	16	160	0.0262	0.262	RG_FO22_HESS-10_2022-09-09
	RG_FO22	9-Sep-22	Heptageniidae	1	10	0.0163	0.163	RG_FO22_HESS-10_2022-09-09
	RG_FO22	9-Sep-22	Heptageniidae	18	180	0.0042	0.042	RG_FO22_HESS-10_2022-09-09
	RG_FO22	9-Sep-22	Capniidae	14	140	0.032	0.32	RG_FO22_HESS-10_2022-09-09
	RG_FO22	9-Sep-22	Chloroperlidae	4	40	0.004	0.04	RG_FO22_HESS-10_2022-09-09
RG_FO22	9-Sep-22	Nemouridae	1	10	0.009	0.09	RG_FO22_HESS-10_2022-09-09	
RG_FO22	9-Sep-22	Nemouridae	86	860	0.1264	1.264	RG_FO22_HESS-10_2022-09-09	
RG_FO22	9-Sep-22	Perlodidae	1	10	0.0255	0.255	RG_FO22_HESS-10_2022-09-09	
RG_FO22	9-Sep-22	Perlodidae	270	2700	0.165	1.65	RG_FO22_HESS-10_2022-09-09	
RG_FO22	9-Sep-22	Taeniopterygidae	2	20	0.0002	0.002	RG_FO22_HESS-10_2022-09-09	
RG_FO22	9-Sep-22	Apataniidae	10	100	0.009	0.09	RG_FO22_HESS-10_2022-09-09	
RG_FO22	9-Sep-22	Glossosomatidae	2	20	0.0004	0.004	RG_FO22_HESS-10_2022-09-09	
RG_FO22	9-Sep-22	Limnephilidae	36	360	0.0068	0.068	RG_FO22_HESS-10_2022-09-09	
RG_FO22	9-Sep-22	Rhyacophilidae	4	40	0.1141	1.141	RG_FO22_HESS-10_2022-09-09	
RG_FO22	9-Sep-22	Rhyacophilidae	28	280	0.2082	2.082	RG_FO22_HESS-10_2022-09-09	
RG_FO22	9-Sep-22	Ceratopogonidae	20	200	0.0104	0.104	RG_FO22_HESS-10_2022-09-09	
RG_FO22	9-Sep-22	Chironomidae	132	1320	0.0524	0.524	RG_FO22_HESS-10_2022-09-09	
RG_FO22	9-Sep-22	Empididae	10	100	0.0142	0.142	RG_FO22_HESS-10_2022-09-09	
RG_FO22	9-Sep-22	Psychodidae	16	160	0.003	0.03	RG_FO22_HESS-10_2022-09-09	
RG_FO22	9-Sep-22	Limoniidae	2	20	0.0126	0.126	RG_FO22_HESS-10_2022-09-09	
RG_FO22	9-Sep-22	Pediciidae	10	100	0.0028	0.028	RG_FO22_HESS-10_2022-09-09	
RG_FO22	9-Sep-22	Tipulidae	2	20	0.5545	5.545	RG_FO22_HESS-10_2022-09-09	
RG_FO22	9-Sep-22	Pisidiidae	22	220	0.033	0.33	RG_FO22_HESS-10_2022-09-09	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Reference	RG_HENUP	12-Sep-22	Pupa	Chironomidae	440	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Tanytarsini	160	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Eukiefferiella	100	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Pagastia	40	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Diamesa	200	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Orthocladius complex	240	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Rheocricotopus	40	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Tvetenia	80	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Neoplata	60	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Oreogeton	80	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Pericoma/Telmatoscopus	20	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Baetidae	20	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Ameletus	40	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Drunella doddsii	60	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Ephemerellidae	200	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Heptageniidae	2720	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Epeorus	80	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Chloroperlidae	60	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Plumiperla	20	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Sweltsa	60	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Rhithrogena	60	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Plecoptera	40	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Capniidae	40	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Leuctridae	20	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Paraleuctra	20	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Nemouridae	60	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Perlodidae	20	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Zapada columbiana	300	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Zapada oregonensis group	180	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Glossosoma	20	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Megarcys	300	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Setvena	20	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Taeniopterygidae	120	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Rhyacophila brunnea/vemna group	20	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Rhyacophila hyalinata group	140	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Rhyacophila	40	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Hydropsychidae	180	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Parapsyche elsis	20	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Adult	Sperchon	20	RG_HENUP_BIC-1_2022-09-12
	RG_HENUP	12-Sep-22	Adult	Sperchon	33	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Adult	Lebertia	17	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Mallochohelea	17	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Baetis rhodani group	17	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Haploperla	50	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Parapsyche elsis	83	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Rhyacophila hyalinata group	67	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Rhyacophila brunnea/vemna group	17	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Rhyacophila betteni group	17	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Taeniopterygidae	283	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Trichoptera	33	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Glossosoma	17	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Zapada oregonensis group	117	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Zapada columbiana	183	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Perlodidae	33	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Megarcys	83	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Nemouridae	33	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Leuctridae	50	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Paraleuctra	33	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Rhithrogena	217	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Suwallia	17	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Sweltsa	17	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Chloroperlidae	50	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Epeorus	83	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Cinygmula	17	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Heptageniidae	2683	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Ephemerellidae	267	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Drunella	67	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Drunella grandis group	17	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Drunella doddsii	117	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Ameletus	50	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Baetis	17	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Simulium	17	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Pericoma/Telmatoscopus	33	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Oreogeton	133	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Rheocricotopus	33	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Tvetenia	50	RG_HENUP_BIC-2_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Parorthocladius	17	RG_HENUP_BIC-2_2022-09-12
RG_HENUP	12-Sep-22	Larvae	Orthocladius complex	150	RG_HENUP_BIC-2_2022-09-12	
RG_HENUP	12-Sep-22	Larvae	Hydrobaenus	50	RG_HENUP_BIC-2_2022-09-12	
RG_HENUP	12-Sep-22	Larvae	Diamesa	133	RG_HENUP_BIC-2_2022-09-12	
RG_HENUP	12-Sep-22	Larvae	Micropsectra	67	RG_HENUP_BIC-2_2022-09-12	
RG_HENUP	12-Sep-22	Larvae	Eukiefferiella	33	RG_HENUP_BIC-2_2022-09-12	
RG_HENUP	12-Sep-22	Juvenile/Damaged	Tanytarsini	317	RG_HENUP_BIC-2_2022-09-12	
RG_HENUP	12-Sep-22	Pupa	Chironomidae	217	RG_HENUP_BIC-2_2022-09-12	
RG_HENUP	12-Sep-22	Adult	Chironomidae	20	RG_HENUP_BIC-3_2022-09-12	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Reference	RG_HENUP	12-Sep-22	Pupa	Chironomidae	300	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Tanytarsini	540	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Eukiefferiella	60	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Micropsectra	60	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Diamesa	100	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Orthocladius complex	60	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Tvetenia	20	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Oreogeton	180	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Neoplasta	20	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Ameletus	180	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Drunella doddsii	40	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Ephemerellidae	440	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Heptageniidae	3660	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Epeorus	40	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Chloroperlidae	20	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Sweltsa	40	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Rhithrogena	340	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Plecoptera	40	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Zapada columbiana	220	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Zapada oregonensis group	20	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Glossosomatidae	20	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Trichoptera	20	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Taeniopterygidae	180	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Megarcys	120	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Rhyacophila	20	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Ecclisomyia	20	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Juvenile/Damaged	Hydropsychidae	80	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Haploperla	40	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Larvae	Kogotus	40	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	None	Naididae	20	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Adult	Lebertia	20	RG_HENUP_BIC-3_2022-09-12
	RG_HENUP	12-Sep-22	Adult	Sperchon	40	RG_HENUP_BIC-3_2022-09-12
	RG_FO26	16-Sep-22	Juvenile/Damaged	Baetis rhodani group	180	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Rhyacophila atrata complex	60	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Kogotus	100	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Mallochohelea	260	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Adult	Lebertia	80	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Adult	Sperchon	180	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Rhyacophila narvae	20	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Rhyacophila vofixa group	120	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Oligophlebodes	160	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Rhyacophila brunnea/vemna group	20	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Rhyacophila betteni group	40	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Rhyacophila hyalinata group	140	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Limnephilidae	20	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Rhyacophila	40	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Hydropsychidae	780	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Parapsyche elsis	60	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Taeniopterygidae	420	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Trichoptera	860	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Megarcys	160	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Perlodidae	40	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Zapada oregonensis group	520	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Zapada columbiana	260	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Zapada	560	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Nemouridae	60	RG_FO26_BIC-1_2022-09-16
RG_FO26	16-Sep-22	Juvenile/Damaged	Leuctridae	60	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Juvenile/Damaged	Chloroperlidae	40	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Sweltsa	380	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Rhithrogena	160	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Juvenile/Damaged	Plecoptera	140	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Juvenile/Damaged	Heptageniidae	540	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Cinygmula	8180	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Epeorus	40	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Drunella doddsii	880	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Juvenile/Damaged	Ephemerellidae	4100	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Juvenile/Damaged	Baetis	20	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Juvenile/Damaged	Baetidae	1460	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Ameletus	220	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Simulium	40	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Tvetenia	60	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Rheocricotopus	20	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Orthocladius complex	2180	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Hydrobaenus	20	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Pericoma/Telmatoscopus	7620	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Pagastia	200	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Juvenile/Damaged	Orthoclaadiinae	20	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Brillia	20	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Cricotopus (Nostococcladius)	20	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Eukiefferiella	20	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Diamesa	80	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Micropsectra	200	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Juvenile/Damaged	Tanytarsini	640	RG_FO26_BIC-1_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Bezzia/ Palpomyia	20	RG_FO26_BIC-1_2022-09-16	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Reference	RG_FO26	16-Sep-22	Pupa	Chironomidae	200	RG_FO26_BIC-1_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Bezzia/ Palpomyia	40	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Tanytarsini	340	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Pupa	Chironomidae	60	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Microsectra	20	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Diamesa	200	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Pagastia	240	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Pericoma/Telmatoscopus	7440	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Empididae	20	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Chelifera/ Metachela	20	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Orthocladius complex	1540	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Rheocricotopus	40	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Tvetenia	280	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Dicranota	40	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Simulium	20	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Ameletus	40	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Baetidae	1620	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Ephemerellidae	3660	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Drunella doddsii	1320	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Epeorus	140	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Cinygmula	15780	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Heptageniidae	940	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Plecoptera	180	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Rhithrogena	640	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Capniidae	20	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Chloroperlidae	100	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Leuctridae	40	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Sweltsa	460	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Nemouridae	60	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Zapada	840	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Zapada columbiana	720	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Zapada oregonensis group	740	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Perlodidae	60	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Isoperla	20	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Megarcys	340	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Trichoptera	820	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Taeniopterygidae	820	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Glossosoma	20	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Hydropsychidae	2140	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Rhyacophila	980	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Parapsyche elsis	180	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Rhyacophila hyalinata group	220	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Rhyacophila narvae	80	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Rhyacophila betteni group	40	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Adult	Feltria	20	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Rhyacophila vofixa group	220	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Oligophlebodes	80	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Adult	Sperchon	520	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Adult	Lebertia	20	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Adult	Aturus	20	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Mallochohelea	220	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Kogotus	280	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Rhyacophila atrata complex	40	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Baetis rhodani group	160	RG_FO26_BIC-2_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Baetis rhodani group	100	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Rhyacophila atrata complex	60	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Kogotus	420	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Mallochohelea	420	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Adult	Lebertia	60	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Adult	Sperchon	320	RG_FO26_BIC-3_2022-09-16
RG_FO26	16-Sep-22	Larvae	Oligophlebodes	120	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Rhyacophila vofixa group	300	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Adult	Feltria	40	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Juvenile/Damaged	Hydryphantidae	20	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Rhyacophila betteni group	20	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Rhyacophila narvae	80	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Rhyacophila hyalinata group	420	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Juvenile/Damaged	Limnephilidae	140	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Juvenile/Damaged	Rhyacophila	380	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Ecclisomyia	20	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Juvenile/Damaged	Hydropsychidae	2260	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Parapsyche elsis	100	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Glossosoma	20	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Anagapetus	20	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Juvenile/Damaged	Taeniopterygidae	1140	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Juvenile/Damaged	Trichoptera	2360	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Megarcys	400	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Isoperla	20	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Juvenile/Damaged	Perlodidae	120	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Zapada oregonensis group	1080	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Zapada columbiana	460	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Yoraperla	20	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Juvenile/Damaged	Zapada	740	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Paraleuctra	80	RG_FO26_BIC-3_2022-09-16	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Reference	RG_FO26	16-Sep-22	Juvenile/Damaged	Leuctridae	20	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Chloroperlidae	80	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Sweltsa	380	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Rhithrogena	420	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Plecoptera	360	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Heptageniidae	540	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Cinygmula	12000	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Epeorus	60	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Drunella doddsii	1100	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Ephemerellidae	4160	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Juvenile/Damaged	Baetidae	2140	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Ameletus	40	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Simulium	40	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Tvetenia	100	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Parorthocladius	20	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Orthocladius complex	2380	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Glutops	20	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Pericoma/Telmatoscopus	8160	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Oreogeton	20	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Pagastia	140	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Cricotopus (Nostococladius)	20	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Brillia	40	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Eukiefferiella	20	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Diamesa	400	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Larvae	Micropsectra	40	RG_FO26_BIC-3_2022-09-16
	RG_FO26	16-Sep-22	Pupa	Chironomidae	120	RG_FO26_BIC-3_2022-09-16
RG_FO26	16-Sep-22	Juvenile/Damaged	Tanytarsini	200	RG_FO26_BIC-3_2022-09-16	
RG_FO26	16-Sep-22	Larvae	Bezzia/ Palpomyia	200	RG_FO26_BIC-3_2022-09-16	
Mine-Exposed	RG_FODHE	19-Sep-22	Juvenile/Damaged	Tanytarsini	60	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Pupa	Chironomidae	40	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Pagastia	40	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Micropsectra	40	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Pseudodiamesa	20	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Eukiefferiella	80	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Tvetenia	20	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Orthocladius complex	480	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Baetis	120	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Ameletus	20	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Dicranota	40	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Simulium	60	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Pericoma/Telmatoscopus	1820	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Ephemerellidae	3520	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Drunella doddsii	360	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Epeorus	40	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Heptageniidae	3980	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Capniidae	20	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Rhithrogena	20	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Zapada	180	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Perlodidae	260	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Isoperla	20	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Zapada cinctipes	60	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Zapada columbiana	140	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Zapada oregonensis group	120	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Brachycentridae	20	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Megaracys	260	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Taeniopterygidae	380	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Rhyacophila brunnea/vemna group	20	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Rhyacophila	860	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Hydropsychidae	40	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Parapsyche	20	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Baetis rhodani group	80	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Kogotus	60	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Mallochohelea	80	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Adult	Aturus	20	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Adult	Sperchon	40	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Adult	Lebertia	180	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Rhyacophila narvae	20	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Rhyacophila vofixa group	20	RG_FODHE_BIC-1_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Rhyacophila vofixa group	20	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Rhyacophila narvae	20	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Adult	Hygrobatas	20	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Mallochohelea	20	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Kogotus	100	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Baetis rhodani group	60	RG_FODHE_BIC-2_2022-09-19
RG_FODHE	19-Sep-22	Juvenile/Damaged	Hydropsychidae	20	RG_FODHE_BIC-2_2022-09-19	
RG_FODHE	19-Sep-22	Larvae	Parapsyche elsis	40	RG_FODHE_BIC-2_2022-09-19	
RG_FODHE	19-Sep-22	Larvae	Rhyacophila	380	RG_FODHE_BIC-2_2022-09-19	
RG_FODHE	19-Sep-22	Larvae	Rhyacophila brunnea/vemna group	40	RG_FODHE_BIC-2_2022-09-19	
RG_FODHE	19-Sep-22	Larvae	Rhyacophila hyalinata group	120	RG_FODHE_BIC-2_2022-09-19	
RG_FODHE	19-Sep-22	Juvenile/Damaged	Taeniopterygidae	120	RG_FODHE_BIC-2_2022-09-19	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FODHE	19-Sep-22	Juvenile/Damaged	Trichoptera	40	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Megarcys	220	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Brachycentridae	20	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Zapada oregonensis group	100	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Zapada columbiana	260	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Zapada cinctipes	20	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Perlodidae	40	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Zapada	120	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Rhithrogena	100	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Sweltsa	20	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Plumiperla	20	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Heptageniidae	5000	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Epeorus	120	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Ephemerellidae	880	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Drunella doddsii	800	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Pericoma/Telmatoscopus	1380	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Baetidae	40	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Baetis	20	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Orthocladius complex	20	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Eukiefferiella	40	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Micropsectra	20	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Pagastia	20	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Pupa	Chironomidae	120	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Tanytarsini	20	RG_FODHE_BIC-2_2022-09-19
	RG_FODHE	19-Sep-22	Pupa	Chironomidae	40	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Eukiefferiella	20	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Orthocladius complex	40	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Neoplasta	40	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Baetis	100	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Pericoma/Telmatoscopus	520	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Simuliidae	40	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Simulium	60	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Drunella doddsii	1020	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Ephemerellidae	920	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Epeorus	380	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Heptageniidae	4080	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Plecoptera	20	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Rhithrogena	140	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Zapada	100	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Sweltsa	20	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Leuctridae	20	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Perlodidae	40	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Zapada columbiana	160	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Zapada oregonensis group	40	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Glossosomatidae	20	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Hydropsychidae	20	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Megarcys	60	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Juvenile/Damaged	Taeniopterygidae	300	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Rhyacophila hyalinata group	40	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Rhyacophila brunnea/vemna group	20	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Rhyacophila	320	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Parapsyche elsis	20	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Baetis rhodani group	60	RG_FODHE_BIC-3_2022-09-19
	RG_FODHE	19-Sep-22	Larvae	Haploperla	60	RG_FODHE_BIC-3_2022-09-19
RG_FODHE	19-Sep-22	Larvae	Kogotus	60	RG_FODHE_BIC-3_2022-09-19	
RG_FODHE	19-Sep-22	Larvae	Prosimulium/Helodon	40	RG_FODHE_BIC-3_2022-09-19	
RG_FOUCL	16-Sep-22	Pupa	Chironomidae	40	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Micropsectra	20	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Eukiefferiella	40	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Orthocladius complex	80	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Parorthocladius	20	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Tvetenia	60	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Pericoma/Telmatoscopus	2060	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Ameletus	220	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Baetis	60	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Drunella doddsii	480	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Juvenile/Damaged	Ephemerellidae	2040	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Drunella	40	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Epeorus	180	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Juvenile/Damaged	Heptageniidae	13220	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Sweltsa	140	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Juvenile/Damaged	Leuctridae	20	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Zapada	60	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Rhithrogena	100	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Isoperla	20	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Juvenile/Damaged	Perlodidae	60	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Zapada cinctipes	160	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Zapada columbiana	80	RG_FOUCL_BIC-1_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Zapada oregonensis group	180	RG_FOUCL_BIC-1_2022-09-16	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FOUCL	16-Sep-22	Larvae	Megarcys	180	RG_FOUCL_BIC-1_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Taeniopterygidae	220	RG_FOUCL_BIC-1_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Glossosoma	40	RG_FOUCL_BIC-1_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Hydropsychidae	60	RG_FOUCL_BIC-1_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Glossosomatidae	40	RG_FOUCL_BIC-1_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Parapsyche elsis	20	RG_FOUCL_BIC-1_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Rhyacophila	480	RG_FOUCL_BIC-1_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Rhyacophila betteni group	20	RG_FOUCL_BIC-1_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Rhyacophila brunnea/vemna group	40	RG_FOUCL_BIC-1_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Mallochohelea	120	RG_FOUCL_BIC-1_2022-09-16
	RG_FOUCL	16-Sep-22	Adult	Lebertia	60	RG_FOUCL_BIC-1_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Rhyacophila vofixa group	20	RG_FOUCL_BIC-1_2022-09-16
	RG_FOUCL	16-Sep-22	Adult	Sperchon	20	RG_FOUCL_BIC-1_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Kogotus	20	RG_FOUCL_BIC-1_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Baetis rhodani group	80	RG_FOUCL_BIC-1_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Baetis rhodani group	100	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Rhyacophila atrata complex	20	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Kogotus	100	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Adult	Sperchon	20	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Adult	Lebertia	20	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Mallochohelea	20	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	None	Nais	20	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Rhyacophila brunnea/vemna group	80	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Rhyacophila hyalinata group	40	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Rhyacophila	1820	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Parapsyche elsis	20	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Limnephilidae	20	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Brachycentridae	20	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Hydropsychidae	120	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Taeniopterygidae	400	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Megarcys	440	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Zapada oregonensis group	240	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Zapada columbiana	140	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Zapada cinctipes	160	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Perlodidae	120	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Isoperla	20	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Rhithrogena	120	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Plecoptera	20	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Chloroperlidae	60	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Zapada	100	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Sweltsa	380	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Paraleuctra	40	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Nemouridae	100	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Heptageniidae	14800	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Drunella spinifera	20	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Cinygmula	300	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Epeorus	140	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Ephemerellidae	2320	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Drunella doddsii	400	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Baetis	160	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Ameletus	80	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Hexatoma	20	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Dicranota	20	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Pericoma/Telmatoscopus	1560	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Pupa	Simuliidae	20	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Simulium	120	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Tvetenia	60	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Neoplasta	20	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Orthocladius complex	100	RG_FOUCL_BIC-2_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Eukiefferiella	100	RG_FOUCL_BIC-2_2022-09-16
RG_FOUCL	16-Sep-22	Pupa	Chironomidae	100	RG_FOUCL_BIC-2_2022-09-16	
RG_FOUCL	16-Sep-22	Pupa	Chironomidae	220	RG_FOUCL_BIC-3_2022-09-16	
RG_FOUCL	16-Sep-22	Juvenile/Damaged	Tanytarsini	20	RG_FOUCL_BIC-3_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Diamesa	120	RG_FOUCL_BIC-3_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Eukiefferiella	160	RG_FOUCL_BIC-3_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Orthocladius complex	380	RG_FOUCL_BIC-3_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Tvetenia	40	RG_FOUCL_BIC-3_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Simulium	160	RG_FOUCL_BIC-3_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Pericoma/Telmatoscopus	1260	RG_FOUCL_BIC-3_2022-09-16	
RG_FOUCL	16-Sep-22	Pupa	Simuliidae	20	RG_FOUCL_BIC-3_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Dicranota	20	RG_FOUCL_BIC-3_2022-09-16	
RG_FOUCL	16-Sep-22	Juvenile/Damaged	Baetidae	20	RG_FOUCL_BIC-3_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Baetis	420	RG_FOUCL_BIC-3_2022-09-16	
RG_FOUCL	16-Sep-22	Juvenile/Damaged	Ephemerellidae	2080	RG_FOUCL_BIC-3_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Drunella doddsii	420	RG_FOUCL_BIC-3_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Epeorus	220	RG_FOUCL_BIC-3_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Rhithrogena	160	RG_FOUCL_BIC-3_2022-09-16	
RG_FOUCL	16-Sep-22	Juvenile/Damaged	Heptageniidae	10800	RG_FOUCL_BIC-3_2022-09-16	
RG_FOUCL	16-Sep-22	Larvae	Cinygmula	740	RG_FOUCL_BIC-3_2022-09-16	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Leuctridae	20	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Sweltsa	440	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Nemouridae	100	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Zapada	20	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Zapada cinctipes	20	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Chloroperlidae	160	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Plecoptera	20	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Perlodidae	100	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Isoperla	60	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Zapada columbiana	340	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Zapada oregonensis group	80	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Megarcys	680	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Taeniopterygidae	140	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Hydropsychidae	220	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Glossosomatidae	20	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Juvenile/Damaged	Brachycentridae	60	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Parapsyche elsis	20	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Rhyacophila	920	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Rhyacophila betteni group	20	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Rhyacophila hyalinata group	20	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Rhyacophila brunnea/vemna group	60	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Mallochohelea	20	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Kogotus	100	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Rhyacophila narvae	40	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Rhyacophila vofixa group	20	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUCL	16-Sep-22	Larvae	Baetis rhodani group	280	RG_FOUCL_BIC-3_2022-09-16
	RG_FOUNGD	15-Sep-22	Larvae	Baetis rhodani group	120	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Kogotus	240	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Rhyacophila vofixa group	20	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Rhyacophila narvae	20	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Adult	Lebertia	80	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Mallochohelea	80	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	None	Enchytraeus	40	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Rhyacophila	600	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Rhyacophila hyalinata group	20	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Rhyacophila brunnea/vemna group	120	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Ecclisomyia	180	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Taeniopterygidae	20	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Trichoptera	40	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Megarcys	320	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Glossosomatidae	100	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Glossosoma	20	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Zapada cinctipes	20	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Zapada columbiana	100	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Zapada oregonensis group	100	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Perlodidae	60	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Chloroperlidae	20	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	None	Hemiptera	20	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Plecoptera	20	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Sweltsa	60	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Zapada	140	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Epeorus	40	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Heptageniidae	2880	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Drunella spinifera	20	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Drunella	20	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Ephemerellidae	780	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Drunella doddsii	120	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Pericoma/Telmatoscopus	3620	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Baetidae	40	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Hexatoma	20	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Baetis	20	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Thienemannimyia group	60	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Orthocladius complex	20	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Micropsectra	20	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Heterlimnius	20	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Pupa	Chironomidae	80	RG_FOUNGD_BIC-1_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Micropsectra	20	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Diamesa	20	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Parorthocladius	20	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Eukiefferiella	20	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Tvetenia	20	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Neoplasta	20	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Baetis	60	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Baetidae	20	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Pericoma/Telmatoscopus	4540	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Dicranota	20	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Drunella doddsii	340	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Ephemerellidae	1560	RG_FOUNGD_BIC-2_2022-09-15
RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Heptageniidae	8840	RG_FOUNGD_BIC-2_2022-09-15	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FOUNGD	15-Sep-22	Larvae	Epeorus	120	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Zapada	40	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Sweltsa	260	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Leuctridae	20	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Nemouridae	40	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Plecoptera	20	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Chloroperlidae	60	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Perlodidae	80	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Zapada oregonensis group	100	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Zapada columbiana	120	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Zapada cinctipes	20	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Glossosoma	40	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Hydropsychidae	60	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Glossosomatidae	20	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Megarcys	300	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Taeniopterygidae	260	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Ecclisomyia	40	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Rhyacophila	1920	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Rhyacophila brunnea/vemna group	320	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Rhyacophila hyalinata group	80	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Rhyacophila betteni group	20	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Mallochohelea	100	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Rhyacophila narvae	60	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Adult	Sperchon	20	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Kogotus	80	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Baetis rhodani group	240	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Rhyacophila atrata complex	100	RG_FOUNGD_BIC-2_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Rhyacophila atrata complex	60	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Baetis rhodani group	100	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Adult	Hygrobatas	20	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Kogotus	80	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Rhyacophila	880	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Rhyacophila brunnea/vemna group	100	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Taeniopterygidae	400	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Megarcys	160	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Glossosomatidae	60	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Brachycentrus	20	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Hydropsychidae	40	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Glossosoma	20	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Zapada columbiana	120	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Zapada oregonensis group	160	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Perlodidae	240	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Chloroperlidae	100	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Rhithrogena	60	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Sweltsa	200	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Zapada	60	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Epeorus	60	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Heptageniidae	6860	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Drunella	20	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Ephemereillidae	1520	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Drunella doddsii	200	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Tipulidae	20	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Pericoma/Telmatoscopus	1420	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Pupa	Simuliidae	60	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Juvenile/Damaged	Baetidae	20	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Ameletus	20	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Thienemannimyia group	20	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Larvae	Orthocladus complex	20	RG_FOUNGD_BIC-3_2022-09-15
	RG_FOUNGD	15-Sep-22	Pupa	Chironomidae	40	RG_FOUNGD_BIC-3_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Baetis rhodani group	40	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Rhyacophila atrata complex	100	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Kogotus	200	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Adult	Lebertia	60	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Adult	Sperchon	20	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Rhyacophila narvae	20	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Mallochohelea	20	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Rhyacophila brunnea/vemna group	80	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Rhyacophila betteni group	20	RG_FODNGD_BIC-1_2022-09-15
RG_FODNGD	15-Sep-22	Larvae	Rhyacophila	220	RG_FODNGD_BIC-1_2022-09-15	
RG_FODNGD	15-Sep-22	Juvenile/Damaged	Limnephilidae	20	RG_FODNGD_BIC-1_2022-09-15	
RG_FODNGD	15-Sep-22	Juvenile/Damaged	Hydropsychidae	140	RG_FODNGD_BIC-1_2022-09-15	
RG_FODNGD	15-Sep-22	Larvae	Glossosoma	40	RG_FODNGD_BIC-1_2022-09-15	
RG_FODNGD	15-Sep-22	Juvenile/Damaged	Glossosomatidae	40	RG_FODNGD_BIC-1_2022-09-15	
RG_FODNGD	15-Sep-22	Juvenile/Damaged	Taeniopterygidae	120	RG_FODNGD_BIC-1_2022-09-15	
RG_FODNGD	15-Sep-22	Larvae	Megarcys	180	RG_FODNGD_BIC-1_2022-09-15	
RG_FODNGD	15-Sep-22	Juvenile/Damaged	Chloroperlidae	40	RG_FODNGD_BIC-1_2022-09-15	
RG_FODNGD	15-Sep-22	Larvae	Sweltsa	140	RG_FODNGD_BIC-1_2022-09-15	
RG_FODNGD	15-Sep-22	Larvae	Zapada	80	RG_FODNGD_BIC-1_2022-09-15	
RG_FODNGD	15-Sep-22	Juvenile/Damaged	Nemouridae	20	RG_FODNGD_BIC-1_2022-09-15	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FODNGD	15-Sep-22	Juvenile/Damaged	Leuctridae	20	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Juvenile/Damaged	Heptageniidae	3220	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Epeorus	40	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Juvenile/Damaged	Ephemereillidae	1200	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Drunella doddsii	80	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Drunella spinifera	20	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Baetis	100	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Hexatoma	40	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Pericoma/Telmatoscopus	2740	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Thienemannimyia group	20	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Limnophora	20	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Rheocricotopus	20	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Orthocladius complex	340	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Heterlimnius	20	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Pupa	Chironomidae	60	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Juvenile/Damaged	Orthoclaadiinae	20	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Eukiefferiella	40	RG_FODNGD_BIC-1_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Eukiefferiella	40	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Brillia	20	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Pupa	Chironomidae	40	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Heterlimnius	20	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Orthocladius complex	60	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Thienemannimyia group	20	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Pericoma/Telmatoscopus	5180	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Baetis	100	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Drunella doddsii	60	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Ephemereillidae	1080	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Cinygmula	80	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Juvenile/Damaged	Heptageniidae	4880	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Juvenile/Damaged	Nemouridae	20	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Sweltsa	60	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Zapada	100	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Juvenile/Damaged	Plecoptera	20	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Isoperla	60	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Juvenile/Damaged	Perlidae	20	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Juvenile/Damaged	Perlodidae	180	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Zapada cinctipes	120	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Zapada columbiana	120	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Zapada oregonensis group	60	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Yoraperla	20	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Megarcys	260	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Juvenile/Damaged	Taeniopterygidae	280	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Juvenile/Damaged	Trichoptera	20	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Juvenile/Damaged	Brachycentridae	40	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Juvenile/Damaged	Glossosomatidae	60	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Parapsyche elsis	20	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Rhyacophila	500	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Rhyacophila brunnea/vemna group	220	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Adult	Hydrozetidae	20	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Mallochohelea	60	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	None	Enchytraeus	20	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Rhyacophila narvae	40	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Rhyacophila vofixa group	20	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Adult	Lebertia	20	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Kogotus	160	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Baetis rhodani group	60	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Rhyacophila atrata complex	20	RG_FODNGD_BIC-2_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Baetis rhodani group	20	RG_FODNGD_BIC-3_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Kogotus	320	RG_FODNGD_BIC-3_2022-09-15
	RG_FODNGD	15-Sep-22	Adult	Lebertia	20	RG_FODNGD_BIC-3_2022-09-15
RG_FODNGD	15-Sep-22	None	Enchytraeus	40	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	None	Nais	60	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	Larvae	Mallochohelea	40	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	Adult	Staphylinidae	20	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	Larvae	Rhyacophila brunnea/vemna group	340	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	Larvae	Rhyacophila hyalinata group	20	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	Larvae	Rhyacophila	720	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	Larvae	Parapsyche elsis	20	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	Juvenile/Damaged	Limnephilidae	20	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	Larvae	Dicosmoecus	20	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	Juvenile/Damaged	Glossosomatidae	60	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	Larvae	Brachycentridae	20	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	Juvenile/Damaged	Hydropsychidae	60	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	Larvae	Glossosoma	220	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	Juvenile/Damaged	Taeniopterygidae	80	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	Larvae	Megarcys	500	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	Larvae	Zapada oregonensis group	60	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	Larvae	Zapada columbiana	40	RG_FODNGD_BIC-3_2022-09-15	
RG_FODNGD	15-Sep-22	Larvae	Zapada cinctipes	80	RG_FODNGD_BIC-3_2022-09-15	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FODNGD	15-Sep-22	Juvenile/Damaged	Perlodidae	100	RG_FODNGD_BIC-3_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Isoperla	60	RG_FODNGD_BIC-3_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Sweltsa	100	RG_FODNGD_BIC-3_2022-09-15
	RG_FODNGD	15-Sep-22	Juvenile/Damaged	Nemouridae	40	RG_FODNGD_BIC-3_2022-09-15
	RG_FODNGD	15-Sep-22	Juvenile/Damaged	Heptageniidae	3780	RG_FODNGD_BIC-3_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Epeorus	120	RG_FODNGD_BIC-3_2022-09-15
	RG_FODNGD	15-Sep-22	Juvenile/Damaged	Ephemerellidae	1100	RG_FODNGD_BIC-3_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Drunella doddsii	100	RG_FODNGD_BIC-3_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Baetis	20	RG_FODNGD_BIC-3_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Ameletus	20	RG_FODNGD_BIC-3_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Pericoma/Telmatoscopus	4440	RG_FODNGD_BIC-3_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Simulium	20	RG_FODNGD_BIC-3_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Orthocladius complex	620	RG_FODNGD_BIC-3_2022-09-15
	RG_FODNGD	15-Sep-22	Larvae	Eukiefferiella	80	RG_FODNGD_BIC-3_2022-09-15
	RG_FODNGD	15-Sep-22	Pupa	Chironomidae	80	RG_FODNGD_BIC-3_2022-09-15
	RG_MP1	12-Sep-22	Adult	Piona	20	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Adult	Sperchon	20	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Adult	Lebertia	100	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Rhyacophila narvae	20	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	None	Nais	540	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Mallochohelea	60	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Kogotus	200	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Rhyacophila atrata complex	20	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Baetis rhodani group	240	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Parapsyche	60	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Parapsyche elsis	20	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Rhyacophila	620	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Rhyacophila hyalinata group	20	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Rhyacophila brunnea/vemna group	200	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Megarcys	160	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Taeniopterygidae	40	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Trichoptera	80	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Glossosoma	20	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Brachycentridae	100	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Zapada oregonensis group	80	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Zapada columbiana	40	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Zapada cinctipes	60	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Isoperla	120	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Perlodidae	60	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Chloroperlidae	20	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Nemouridae	80	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Zapada	100	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Cinygmula	60	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Epeorus	60	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Heptageniidae	4520	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Ephemerellidae	1020	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Drunella doddsii	200	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Baetidae	20	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Hexatoma	20	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Baetis	100	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Pericoma/Telmatoscopus	2840	RG_MP1_BIC-1_2022-09-12
	RG_MP1	12-Sep-22	Pupa	Empididae	40	RG_MP1_BIC-1_2022-09-12
RG_MP1	12-Sep-22	Larvae	Thienemannimyia group	40	RG_MP1_BIC-1_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Tvetenia	40	RG_MP1_BIC-1_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Orthocladius complex	480	RG_MP1_BIC-1_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Eukiefferiella	40	RG_MP1_BIC-1_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Pagastia	40	RG_MP1_BIC-1_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Micropsectra	20	RG_MP1_BIC-1_2022-09-12	
RG_MP1	12-Sep-22	Juvenile/Damaged	Tanytarsini	40	RG_MP1_BIC-1_2022-09-12	
RG_MP1	12-Sep-22	Pupa	Chironomidae	100	RG_MP1_BIC-1_2022-09-12	
RG_MP1	12-Sep-22	Juvenile/Damaged	Elmidae	20	RG_MP1_BIC-1_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Heterlimnius	40	RG_MP1_BIC-1_2022-09-12	
RG_MP1	12-Sep-22	Adult	Heterlimnius	20	RG_MP1_BIC-1_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Heterlimnius	15	RG_MP1_BIC-2_2022-09-12	
RG_MP1	12-Sep-22	Pupa	Chironomidae	5	RG_MP1_BIC-2_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Eukiefferiella	5	RG_MP1_BIC-2_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Pagastia	5	RG_MP1_BIC-2_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Orthocladius complex	45	RG_MP1_BIC-2_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Thienemanniella	5	RG_MP1_BIC-2_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Thienemannimyia group	5	RG_MP1_BIC-2_2022-09-12	
RG_MP1	12-Sep-22	Pupa	Empididae	5	RG_MP1_BIC-2_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Pericoma/Telmatoscopus	890	RG_MP1_BIC-2_2022-09-12	
RG_MP1	12-Sep-22	Pupa	Simuliidae	10	RG_MP1_BIC-2_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Simulium	15	RG_MP1_BIC-2_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Dicranota	10	RG_MP1_BIC-2_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Baetis	20	RG_MP1_BIC-2_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Ameletus	10	RG_MP1_BIC-2_2022-09-12	
RG_MP1	12-Sep-22	Larvae	Drunella doddsii	25	RG_MP1_BIC-2_2022-09-12	
RG_MP1	12-Sep-22	Juvenile/Damaged	Ephemerellidae	290	RG_MP1_BIC-2_2022-09-12	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_MP1	12-Sep-22	Juvenile/Damaged	Heptageniidae	880	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Epeorus	40	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Zapada	10	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Leuctridae	5	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Sweltsa	25	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Chloroperlidae	5	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Isoperla	5	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Zapada cinctipes	15	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Zapada oregonensis group	5	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Glossosomatidae	5	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Trichoptera	15	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Apatania	5	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Taeniopterygidae	25	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Rhyacophila betteni group	10	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Rhyacophila brunnea/vemna group	20	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Rhyacophila	140	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Hydropsychidae	5	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Baetis rhodani group	25	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Kogotus	35	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Rhyacophila atrata complex	10	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Mallochohelea	15	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	None	Nais	5	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Adult	Testudacarus	5	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Adult	Lebertia	40	RG_MP1_BIC-2_2022-09-12
	RG_MP1	12-Sep-22	Adult	Lebertia	60	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	None	Enchytraeus	20	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Mallochohelea	40	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Kogotus	80	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Rhyacophila atrata complex	40	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Adult	Oribatida	20	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Baetis rhodani group	40	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Rhyacophila	280	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Rhyacophila brunnea/vemna group	240	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Rhyacophila hyalinata group	20	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Taeniopterygidae	80	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Trichoptera	20	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Megarcys	80	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Glossosomatidae	60	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Brachycentridae	20	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Apatania	20	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Hydropsychidae	80	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Zapada oregonensis group	20	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Zapada cinctipes	60	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Isoperla	60	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Perlodidae	60	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Plecoptera	20	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Rhithrogena	20	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Sweltsa	80	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Epeorus	260	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Cinygmula	40	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Heptageniidae	3140	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Ephemereillidae	700	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Drunella doddsii	60	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Juvenile/Damaged	Baetidae	20	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Baetis	40	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Pericoma/Telmatoscopus	4680	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Orthocladius complex	60	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Pagastia	20	RG_MP1_BIC-3_2022-09-12
	RG_MP1	12-Sep-22	Larvae	Heterlimnius	60	RG_MP1_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Pupa	Chironomidae	120	RG_FOUSH_BIC-1_2022-09-12
RG_FOUSH	12-Sep-22	Juvenile/Damaged	Elmidae	20	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Diamesa	20	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Pagastia	40	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Micropsectra	20	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Orthocladius complex	520	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Eukiefferiella	40	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Thienemannimyia group	20	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Tvetenia	20	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Juvenile/Damaged	Empididae	20	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Pericoma/Telmatoscopus	4300	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Simulium	20	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Juvenile/Damaged	Ephemereillidae	380	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Juvenile/Damaged	Heptageniidae	2220	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Epeorus	40	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Cinygmula	20	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Zapada	20	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Sweltsa	20	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Juvenile/Damaged	Perlodidae	60	RG_FOUSH_BIC-1_2022-09-12	
RG_FOUSH	12-Sep-22	Juvenile/Damaged	Perlidae	20	RG_FOUSH_BIC-1_2022-09-12	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FOUSH	12-Sep-22	Larvae	Zapada oregonensis group	20	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Zapada columbiana	100	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Zapada cinctipes	60	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Glossosoma	20	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Juvenile/Damaged	Hydropsychidae	80	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Brachycentrus	80	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Juvenile/Damaged	Glossosomatidae	60	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Megarcys	240	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Juvenile/Damaged	Taeniopterygidae	60	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Rhyacophila brunnea/vemna group	120	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Rhyacophila hyalinata group	20	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Rhyacophila	340	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Rhyacophila betteni group	40	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Parapsyche elsis	40	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Kogotus	20	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Mallochohelea	80	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	None	Nais	920	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Adult	Lebertia	60	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Adult	Sperchon	40	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Baetis rhodani group	40	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Rhyacophila atrata complex	20	RG_FOUSH_BIC-1_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Baetis rhodani group	40	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Adult	Sperchon	20	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Adult	Lebertia	40	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	None	Nais	820	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Mallochohelea	80	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Parapsyche elsis	20	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Parapsyche	160	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Rhyacophila	480	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Rhyacophila hyalinata group	20	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Rhyacophila brunnea/vemna group	40	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Juvenile/Damaged	Taeniopterygidae	120	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Megarcys	220	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Juvenile/Damaged	Glossosomatidae	100	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Juvenile/Damaged	Brachycentridae	60	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Juvenile/Damaged	Hydropsychidae	60	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Glossosoma	20	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Zapada cinctipes	20	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Zapada columbiana	20	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Zapada oregonensis group	20	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Juvenile/Damaged	Perlodidae	40	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Isoperla	20	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Sweltsa	40	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Zapada	80	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Juvenile/Damaged	Chloroperlidae	20	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Cinygmula	20	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Juvenile/Damaged	Heptageniidae	1760	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Juvenile/Damaged	Ephemerellidae	600	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Drunella doddsii	40	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Pericoma/Telmatoscopus	3680	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Hexatoma	60	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Baetis	40	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Thienemannimyia group	20	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Pupa	Empididae	20	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Tvetenia	20	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Eukiefferiella	40	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Orthocladius complex	760	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Micropsectra	40	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Diamesa	60	RG_FOUSH_BIC-2_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Pagastia	40	RG_FOUSH_BIC-2_2022-09-12
RG_FOUSH	12-Sep-22	Juvenile/Damaged	Elmidae	20	RG_FOUSH_BIC-2_2022-09-12	
RG_FOUSH	12-Sep-22	Adult	Heterlimnius	20	RG_FOUSH_BIC-2_2022-09-12	
RG_FOUSH	12-Sep-22	Pupa	Chironomidae	140	RG_FOUSH_BIC-2_2022-09-12	
RG_FOUSH	12-Sep-22	Pupa	Chironomidae	40	RG_FOUSH_BIC-3_2022-09-12	
RG_FOUSH	12-Sep-22	Adult	Curculionidae	20	RG_FOUSH_BIC-3_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Diamesa	60	RG_FOUSH_BIC-3_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Micropsectra	40	RG_FOUSH_BIC-3_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Orthocladius complex	1080	RG_FOUSH_BIC-3_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Parorthocladius	20	RG_FOUSH_BIC-3_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Tvetenia	60	RG_FOUSH_BIC-3_2022-09-12	
RG_FOUSH	12-Sep-22	Pupa	Empididae	20	RG_FOUSH_BIC-3_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Baetis	40	RG_FOUSH_BIC-3_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Ameletus	20	RG_FOUSH_BIC-3_2022-09-12	
RG_FOUSH	12-Sep-22	Juvenile/Damaged	Baetidae	20	RG_FOUSH_BIC-3_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Pericoma/Telmatoscopus	4220	RG_FOUSH_BIC-3_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Drunella doddsii	80	RG_FOUSH_BIC-3_2022-09-12	
RG_FOUSH	12-Sep-22	Juvenile/Damaged	Ephemerellidae	40	RG_FOUSH_BIC-3_2022-09-12	
RG_FOUSH	12-Sep-22	Juvenile/Damaged	Heptageniidae	1960	RG_FOUSH_BIC-3_2022-09-12	
RG_FOUSH	12-Sep-22	Larvae	Epeorus	60	RG_FOUSH_BIC-3_2022-09-12	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FOUSH	12-Sep-22	Larvae	Rhithrogena	20	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Zapada	40	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Sweltsa	40	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Juvenile/Damaged	Perlodidae	120	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Zapada oregonensis group	20	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Juvenile/Damaged	Hydropsychidae	300	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Juvenile/Damaged	Glossosomatidae	120	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Megarcys	40	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Juvenile/Damaged	Taeniopterygidae	100	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Rhyacophila brunnea/vemna group	40	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Rhyacophila hyalinata group	20	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Rhyacophila	420	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Arctopsyche	20	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Mallochohelea	180	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Kogotus	40	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	None	Enchytraeus	40	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	None	Nais	960	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Adult	Lebertia	20	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Adult	Sperchon	20	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Baetis rhodani group	40	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Constempellina sp. C	20	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUSH	12-Sep-22	Larvae	Rhyacophila vagrita group	40	RG_FOUSH_BIC-3_2022-09-12
	RG_FOUKI	13-Sep-22	Pupa	Chironomidae	120	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Diamesa	20	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Micropsectra	40	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Eukiefferiella	20	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Pagastia	160	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Orthocladus complex	980	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Pericoma/Telmatoscopus	7080	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Thienemannimyia group	100	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Ameletus	20	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Baetis	60	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Ephemerellidae	320	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Simulium	20	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Dicranota	20	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Drunella doddsii	80	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Heptageniidae	2500	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Rhithrogena	20	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Epeorus	80	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Zapada	20	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Plecoptera	20	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Capniidae	80	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Megarcys	120	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Perlodidae	40	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Perlidae	20	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Zapada oregonensis group	20	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Zapada columbiana	20	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Taeniopterygidae	40	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Glossosoma	40	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Brachycentridae	40	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Apatania	20	RG_FOUKI_BIC-1_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Arctopsyche	80	RG_FOUKI_BIC-1_2022-09-13
RG_FOUKI	13-Sep-22	Juvenile/Damaged	Hydropsychidae	40	RG_FOUKI_BIC-1_2022-09-13	
RG_FOUKI	13-Sep-22	Larvae	Rhyacophila	60	RG_FOUKI_BIC-1_2022-09-13	
RG_FOUKI	13-Sep-22	Larvae	Rhyacophila brunnea/vemna group	20	RG_FOUKI_BIC-1_2022-09-13	
RG_FOUKI	13-Sep-22	None	Nais	1240	RG_FOUKI_BIC-1_2022-09-13	
RG_FOUKI	13-Sep-22	Larvae	Mallochohelea	180	RG_FOUKI_BIC-1_2022-09-13	
RG_FOUKI	13-Sep-22	Adult	Lebertia	180	RG_FOUKI_BIC-1_2022-09-13	
RG_FOUKI	13-Sep-22	Juvenile/Damaged	Trombidiformes	20	RG_FOUKI_BIC-1_2022-09-13	
RG_FOUKI	13-Sep-22	Larvae	Baetis rhodani group	60	RG_FOUKI_BIC-1_2022-09-13	
RG_FOUKI	13-Sep-22	Juvenile/Damaged	Baetis rhodani group	140	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	Adult	Sperchon	40	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	Larvae	Mallochohelea	40	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	None	Nais	580	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	Juvenile/Damaged	Rhyacophila	240	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	Larvae	Rhyacophila betteni group	20	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	Larvae	Rhyacophila coloradensis group	20	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	Larvae	Rhyacophila hyalinata group	20	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	Juvenile/Damaged	Parapsyche	20	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	Juvenile/Damaged	Brachycentrus	20	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	Juvenile/Damaged	Glossosomatidae	20	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	Larvae	Glossosoma	20	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	Juvenile/Damaged	Hydropsychidae	120	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	Larvae	Zapada columbiana	20	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	Larvae	Zapada oregonensis group	20	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	Juvenile/Damaged	Perlidae	20	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	Juvenile/Damaged	Perlodidae	20	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	Larvae	Isoperla	40	RG_FOUKI_BIC-2_2022-09-13	
RG_FOUKI	13-Sep-22	Juvenile/Damaged	Capniidae	40	RG_FOUKI_BIC-2_2022-09-13	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Zapada	80	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Zapada cinctipes	60	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Epeorus	120	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Heptageniidae	60	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Cinygmula	1580	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Drunella doddsii	240	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Drunella grandis group	20	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Simulium	80	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Pericoma/Telmatoscopus	4760	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Pupa	Simuliidae	40	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Baetis bicaudatus	20	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Ephemerellidae	160	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Ameletus	20	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Baetidae	40	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Eukiefferiella	120	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Orthocladius complex	1300	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Micropsectra	40	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Pagastia	60	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Diamesa	60	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Pupa	Chironomidae	240	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Adult	Chironomidae	40	RG_FOUKI_BIC-2_2022-09-13
	RG_FOUKI	13-Sep-22	Pupa	Chironomidae	240	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Elmidae	20	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Ceratopogonidae	40	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Heterlimnius	20	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Micropsectra	140	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Orthocladius complex	920	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Eukiefferiella	20	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Pupa	Empididae	40	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Thienemannimyia group	100	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Baetidae	20	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Pupa	Simuliidae	40	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Pericoma/Telmatoscopus	7020	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Tipulidae	40	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Drunella doddsii	120	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Ephemerellidae	400	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Drunella	20	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Drunella spinifera	20	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Heptageniidae	4080	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Epeorus	40	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Cinygmula	20	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Zapada	60	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Sweltsa	80	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Nemouridae	20	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Capniidae	20	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Isoperla	80	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Zapada oregonensis group	20	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Zapada cinctipes	40	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Hydropsychidae	40	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Brachycentridae	40	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Megarcys	180	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Taeniopterygidae	60	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Parapsyche	280	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Arctopsyche	20	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Parapsyche elsis	20	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Rhyacophila brunnea/vemna group	60	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Rhyacophila hyalinata group	20	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Rhyacophila	60	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	None	Nais	920	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Kogotus	40	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Adult	Sperchon	40	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Juvenile/Damaged	Trombidiformes	20	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Adult	Lebertia	100	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Rhyacophila vofixa group	20	RG_FOUKI_BIC-3_2022-09-13
	RG_FOUKI	13-Sep-22	Larvae	Baetis rhodani group	20	RG_FOUKI_BIC-3_2022-09-13
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Baetis rhodani group	100	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Kogotus	40	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Clinocerinae Unknown Genus A	20	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Mallochohelea	40	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	None	Nais	320	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	None	Enchytraeus	20	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Rhyacophila brunnea/vemna group	40	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Rhyacophila betteni group	60	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Rhyacophila hyalinata group	20	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Rhyacophila narvae	20	RG_FOBKS_BIC-1_2022-09-12
RG_FOBKS	12-Sep-22	Juvenile/Damaged	Rhyacophila	280	RG_FOBKS_BIC-1_2022-09-12	
RG_FOBKS	12-Sep-22	Juvenile/Damaged	Limnephilidae	20	RG_FOBKS_BIC-1_2022-09-12	
RG_FOBKS	12-Sep-22	Juvenile/Damaged	Hydropsychidae	60	RG_FOBKS_BIC-1_2022-09-12	
RG_FOBKS	12-Sep-22	Juvenile/Damaged	Parapsyche	60	RG_FOBKS_BIC-1_2022-09-12	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Arctopsyche	80	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Brachycentrus	40	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Glossosoma	20	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Megarcys	60	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Taeniopterygidae	120	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Trichoptera	20	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Isoperla	220	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Perlidae	20	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Zapada columbiana	20	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Zapada	100	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Zapada cinctipes	160	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Rhithrogena	60	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Capniidae	20	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Sweltsa	60	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Heptageniidae	100	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Cinygmula	1780	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Epeorus	560	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Ephemerellidae	120	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Drunella doddsii	120	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Hexatoma	20	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Simulium	40	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Orthocladus complex	40	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Pericoma/Telmatoscopus	2740	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Eukiefferiella	40	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Micropsectra	40	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Pupa	Chironomidae	20	RG_FOBKS_BIC-1_2022-09-12
	RG_FOBKS	12-Sep-22	Adult	Chironomidae	20	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Pupa	Chironomidae	20	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Heterlimnius	20	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Thienemannimyia group	20	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Dicranota	20	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Pericoma/Telmatoscopus	3280	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Baetis	20	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Drunella doddsii	80	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Ephemerellidae	160	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Epeorus	360	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Cinygmula	1920	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Heptageniidae	360	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Capniidae	20	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Zapada	40	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Zapada columbiana	20	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Perlidae	60	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Hesperoperla	40	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Perlodidae	20	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Isoperla	80	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Megarcys	220	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Taeniopterygidae	60	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Glossosoma	20	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Brachycentrus	40	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Apatania	80	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Parapsyche	40	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Hydropsychidae	20	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Parapsyche elsis	20	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Rhyacophila	320	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Rhyacophila betteni group	80	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Rhyacophila brunnea/vemna group	80	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	None	Enchytraeus	20	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	None	Nais	40	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Mallochohelea	40	RG_FOBKS_BIC-2_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Oligophlebodes	20	RG_FOBKS_BIC-2_2022-09-12
RG_FOBKS	12-Sep-22	Adult	Lebertia	120	RG_FOBKS_BIC-2_2022-09-12	
RG_FOBKS	12-Sep-22	Larvae	Kogotus	120	RG_FOBKS_BIC-2_2022-09-12	
RG_FOBKS	12-Sep-22	Larvae	Rhyacophila atrata complex	20	RG_FOBKS_BIC-2_2022-09-12	
RG_FOBKS	12-Sep-22	Larvae	Kogotus	40	RG_FOBKS_BIC-3_2022-09-12	
RG_FOBKS	12-Sep-22	Adult	Lebertia	40	RG_FOBKS_BIC-3_2022-09-12	
RG_FOBKS	12-Sep-22	None	Enchytraeus	20	RG_FOBKS_BIC-3_2022-09-12	
RG_FOBKS	12-Sep-22	Larvae	Mallochohelea	140	RG_FOBKS_BIC-3_2022-09-12	
RG_FOBKS	12-Sep-22	None	Nais	900	RG_FOBKS_BIC-3_2022-09-12	
RG_FOBKS	12-Sep-22	Larvae	Rhyacophila betteni group	40	RG_FOBKS_BIC-3_2022-09-12	
RG_FOBKS	12-Sep-22	Larvae	Rhyacophila	560	RG_FOBKS_BIC-3_2022-09-12	
RG_FOBKS	12-Sep-22	Larvae	Rhyacophila hyalinata group	20	RG_FOBKS_BIC-3_2022-09-12	
RG_FOBKS	12-Sep-22	Larvae	Rhyacophila brunnea/vemna group	140	RG_FOBKS_BIC-3_2022-09-12	
RG_FOBKS	12-Sep-22	Larvae	Arctopsyche	40	RG_FOBKS_BIC-3_2022-09-12	
RG_FOBKS	12-Sep-22	Juvenile/Damaged	Brachycentridae	20	RG_FOBKS_BIC-3_2022-09-12	
RG_FOBKS	12-Sep-22	Juvenile/Damaged	Hydropsychidae	120	RG_FOBKS_BIC-3_2022-09-12	
RG_FOBKS	12-Sep-22	Larvae	Megarcys	360	RG_FOBKS_BIC-3_2022-09-12	
RG_FOBKS	12-Sep-22	Juvenile/Damaged	Taeniopterygidae	160	RG_FOBKS_BIC-3_2022-09-12	
RG_FOBKS	12-Sep-22	Larvae	Isoperla	80	RG_FOBKS_BIC-3_2022-09-12	
RG_FOBKS	12-Sep-22	Larvae	Zapada oregonensis group	40	RG_FOBKS_BIC-3_2022-09-12	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FOBKS	12-Sep-22	Larvae	Zapada columbiana	40	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Zapada	100	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Sweltsa	40	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	None	Nemouridae	260	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Drunella spinifera	40	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Heptageniidae	2120	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Epeorus	180	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Ephemerellidae	100	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Drunella doddsii	160	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Baetis	20	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Pericoma/Telmatoscopus	4040	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Simulium	20	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Tvetenia	20	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Neoplasta	40	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Orthocladius complex	300	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Eukiefferiella	40	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	Pupa	Chironomidae	40	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	Juvenile/Damaged	Tanytarsini	20	RG_FOBKS_BIC-3_2022-09-12
	RG_FOBKS	12-Sep-22	Larvae	Micropsectra	20	RG_FOBKS_BIC-3_2022-09-12
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Elmidae	60	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Micropsectra	40	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Orthocladius complex	100	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Tvetenia	40	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Parorthocladius	20	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Thienemannimyia group	40	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Empididae	20	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Pericoma/Telmatoscopus	5080	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Ameletus	20	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Drunella doddsii	80	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Drunella spinifera	20	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Ephemerellidae	820	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Heptageniidae	2260	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Cinygmula	80	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Epeorus	40	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Zapada	40	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Nemouridae	40	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Capniidae	20	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Sweltsa	40	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Perlodidae	20	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Hesperoperla	40	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Isoperla	60	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Zapada cinctipes	120	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Zapada oregonensis group	40	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Glossosomatidae	40	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Apatania	20	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Taeniopterygidae	40	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Trichoptera	20	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Rhyacophila betteni group	100	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Arctopsyche	100	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Rhyacophila	100	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Baetis rhodani group	20	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Kogotus	140	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	None	Nais	320	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	None	Enchytraeus	20	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Adult	Lebertia	280	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Adult	Testudacarus	20	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Adult	Sperchon	40	RG_SCOUTDS_BIC-1_2022-09-13
	RG_SCOUTDS	13-Sep-22	Adult	Piona	20	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Adult	Lebertia	120	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	None	Nais	560	RG_SCOUTDS_BIC-2_2022-09-13
RG_SCOUTDS	13-Sep-22	Larvae	Kogotus	220	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Mallochohelea	160	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Rhyacophila atrata complex	20	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Baetis rhodani group	20	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Arctopsyche	160	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Parapsyche	80	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Rhyacophila	440	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Rhyacophila betteni group	80	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Rhyacophila hyalinata group	20	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Rhyacophila brunnea/vemna group	80	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Taeniopterygidae	240	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Megarcys	160	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Brachycentridae	100	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Glossosomatidae	40	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Hydropsychidae	80	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Glossosoma	20	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Zapada cinctipes	280	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Zapada columbiana	40	RG_SCOUTDS_BIC-2_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Isoperla	20	RG_SCOUTDS_BIC-2_2022-09-13	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Perlidae	20	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Hesperoperla	20	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Perlodidae	100	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Capniidae	20	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Rhithrogena	20	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Zapada	220	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Sweltsa	80	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Epeorus	20	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Heptageniidae	3520	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Drunella spinifera	100	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Ephemerellidae	480	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Drunella	40	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Drunella doddsii	180	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Ameletus	20	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Baetidae	40	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Pericoma/Telmatoscopus	5120	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Dicranota	20	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Simulium	40	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Empididae	20	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Thienemannimyia group	20	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Tvetenia	60	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Orthocladius complex	720	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Eukiefferiella	80	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Micropsectra	60	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Heterlimnius	20	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Adult	Heterlimnius	20	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Pupa	Chironomidae	60	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Tanytarsini	20	RG_SCOUTDS_BIC-2_2022-09-13
	RG_SCOUTDS	13-Sep-22	Pupa	Chironomidae	120	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Elmidae	20	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Heterlimnius	40	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Micropsectra	180	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Pagastia	20	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Diamesa	20	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Eukiefferiella	20	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Orthocladius complex	540	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Rheocricotopus	20	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Thienemannimyia group	40	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Pupa	Empididae	60	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Empididae	40	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Tipulidae	20	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Pericoma/Telmatoscopus	6240	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Drunella doddsii	240	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Ephemerellidae	600	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Drunella spinifera	60	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Heptageniidae	2380	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Epeorus	60	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Sweltsa	20	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Nemouridae	20	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Zapada	140	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Perlodidae	140	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Hesperoperla	20	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Isoperla	180	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Zapada cinctipes	160	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Zapada oregonensis group	20	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Glossosoma	80	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Hydropsychidae	80	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Glossosomatidae	60	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Apatania	20	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Megarcys	140	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Taeniopterygidae	160	RG_SCOUTDS_BIC-3_2022-09-13
	RG_SCOUTDS	13-Sep-22	Larvae	Rhyacophila brunnea/vemna group	20	RG_SCOUTDS_BIC-3_2022-09-13
RG_SCOUTDS	13-Sep-22	Larvae	Rhyacophila hyalinata group	20	RG_SCOUTDS_BIC-3_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Rhyacophila	380	RG_SCOUTDS_BIC-3_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Arctopsyche	120	RG_SCOUTDS_BIC-3_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Mallochohelea	20	RG_SCOUTDS_BIC-3_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Kogotus	180	RG_SCOUTDS_BIC-3_2022-09-13	
RG_SCOUTDS	13-Sep-22	None	Enchytraeus	200	RG_SCOUTDS_BIC-3_2022-09-13	
RG_SCOUTDS	13-Sep-22	None	Nais	840	RG_SCOUTDS_BIC-3_2022-09-13	
RG_SCOUTDS	13-Sep-22	Adult	Lebertia	260	RG_SCOUTDS_BIC-3_2022-09-13	
RG_SCOUTDS	13-Sep-22	Adult	Sperchon	20	RG_SCOUTDS_BIC-3_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Micropsectra	280	RG_SCOUTDS_BIC-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Eukiefferiella	120	RG_SCOUTDS_BIC-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Pagastia	60	RG_SCOUTDS_BIC-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Pupa	Chironomidae	260	RG_SCOUTDS_BIC-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Heterlimnius	20	RG_SCOUTDS_BIC-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Juvenile/Damaged	Elmidae	20	RG_SCOUTDS_BIC-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Orthocladius complex	460	RG_SCOUTDS_BIC-1_2022-09-13	
RG_SCOUTDS	13-Sep-22	Larvae	Parametriocnemus	20	RG_SCOUTDS_BIC-1_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Micropsectra	280	RG_FOBSC_BIC-1_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Eukiefferiella	120	RG_FOBSC_BIC-1_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Pagastia	60	RG_FOBSC_BIC-1_2022-09-13	
RG_FOBSC	13-Sep-22	Pupa	Chironomidae	260	RG_FOBSC_BIC-1_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Heterlimnius	20	RG_FOBSC_BIC-1_2022-09-13	
RG_FOBSC	13-Sep-22	Juvenile/Damaged	Elmidae	20	RG_FOBSC_BIC-1_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Orthocladius complex	460	RG_FOBSC_BIC-1_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Parametriocnemus	20	RG_FOBSC_BIC-1_2022-09-13	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FOBSC	13-Sep-22	Larvae	Tvetenia	160	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Trichoclinocera	20	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Corynoneura	20	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Thienemannimyia group	40	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Pupa	Empididae	60	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Simulium	120	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Pericoma/Telmatoscopus	5480	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Pupa	Simuliidae	40	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Baetis	200	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Ameletus	40	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Baetidae	20	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Drunella doddsii	140	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Drunella spinifera	100	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Drunella	60	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Ephemerellidae	400	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Cinygmula	120	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Epeorus	20	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Heptageniidae	2660	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Malenka	20	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Zapada	640	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Capniidae	100	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Suwallia	20	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Sweltsa	140	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Zapada columbiana	60	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Zapada cinctipes	200	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Isoperla	380	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Megarcys	40	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Hesperoperla	20	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Perlodidae	100	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Pteronarcella	20	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Taeniopterygidae	240	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Brachycentridae	80	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Hydropsychidae	100	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Arctopsyche	440	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Rhyacophila	380	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Rhyacophila hyalinata group	20	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Rhyacophila brunnea/vemna group	80	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	None	Nais	1400	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	None	Enchytraeus	20	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Mallochohelea	60	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Adult	Lebertia	200	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Kogotus	60	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Rhyacophila atrata complex	20	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Baetis rhodani group	60	RG_FOBSC_BIC-1_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Baetis rhodani group	80	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Kogotus	40	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Adult	Lebertia	80	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Adult	Piona	20	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Mallochohelea	120	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	None	Enchytraeus	100	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	None	Nais	1560	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Rhyacophila brunnea/vemna group	140	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Rhyacophila betteni group	40	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Rhyacophila hyalinata group	20	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Rhyacophila	500	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Parapsyche elsis	20	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Arctopsyche	380	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Hydropsychidae	60	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Brachycentridae	140	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Glossosoma	100	RG_FOBSC_BIC-2_2022-09-13
RG_FOBSC	13-Sep-22	Juvenile/Damaged	Glossosomatidae	120	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Juvenile/Damaged	Taeniopterygidae	80	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Juvenile/Damaged	Perlodidae	20	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Hesperoperla	20	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Isoperla	260	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Megarcys	160	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Zapada cinctipes	280	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Juvenile/Damaged	Perlidae	20	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Zapada columbiana	80	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Zapada oregonensis group	20	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Juvenile/Damaged	Capniidae	40	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Zapada	60	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Juvenile/Damaged	Nemouridae	60	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Juvenile/Damaged	Heptageniidae	2300	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Epeorus	180	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Juvenile/Damaged	Ephemerellidae	400	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Drunella spinifera	60	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Drunella doddsii	120	RG_FOBSC_BIC-2_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Baetis	40	RG_FOBSC_BIC-2_2022-09-13	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FOBSC	13-Sep-22	Pupa	Simuliidae	180	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Pericoma/Telmatoscopus	4860	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Simulium	400	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Dicranota	20	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Tvetenia	40	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Parametricnemus	20	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Orthocladius complex	380	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Elmidae	20	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Pupa	Chironomidae	100	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Tanytarsini	40	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Pagastia	20	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Orthoclaadiinae	20	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Eukiefferiella	40	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Micropsectra	180	RG_FOBSC_BIC-2_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Micropsectra	120	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Eukiefferiella	160	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Brillia	20	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Orthoclaadiinae	20	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Pagastia	20	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Tanytarsini	20	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Pupa	Chironomidae	180	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Elmidae	20	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Ceratopogonidae	40	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Orthocladius complex	300	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Tvetenia	100	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Pupa	Empididae	40	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Thienemannimyia group	20	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Simulium	80	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Pericoma/Telmatoscopus	10400	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Pupa	Simuliidae	20	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Simuliidae	20	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Baetis	60	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Drunella spinifera	20	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Drunella doddsii	200	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Ephemerellidae	560	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Epeorus	180	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Cinygmula	180	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Heptageniidae	4180	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Nemouridae	60	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Zapada	180	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Rhithrogena	40	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Sweltsa	80	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Chloroperlidae	20	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Zapada columbiana	20	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Zapada oregonensis group	40	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Zapada cinctipes	580	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Megarcys	200	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Isoperla	580	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Perlodidae	40	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Taeniopterygidae	300	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Glossosoma	20	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Brachycentridae	100	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Arctopsyche	260	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Juvenile/Damaged	Hydropsychidae	40	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Parapsyche	20	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Rhyacophila	900	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Rhyacophila betteni group	120	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	Larvae	Rhyacophila brunnea/vemna group	140	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	None	Nais	880	RG_FOBSC_BIC-3_2022-09-13
	RG_FOBSC	13-Sep-22	None	Enchytraeus	180	RG_FOBSC_BIC-3_2022-09-13
RG_FOBSC	13-Sep-22	Larvae	Mallochohelea	220	RG_FOBSC_BIC-3_2022-09-13	
RG_FOBSC	13-Sep-22	Adult	Lebertia	100	RG_FOBSC_BIC-3_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Kogotus	120	RG_FOBSC_BIC-3_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Rhyacophila atrata complex	60	RG_FOBSC_BIC-3_2022-09-13	
RG_FOBSC	13-Sep-22	Larvae	Baetis rhodani group	80	RG_FOBSC_BIC-3_2022-09-13	
RG_FOBSC	14-Sep-22	Juvenile/Damaged	Elmidae	20	RG_FOBSC_BIC-1_2022-09-14	
RG_FOBSC	14-Sep-22	Pupa	Chironomidae	80	RG_FOBSC_BIC-1_2022-09-14	
RG_FOBSC	14-Sep-22	Larvae	Micropsectra	20	RG_FOBSC_BIC-1_2022-09-14	
RG_FOBSC	14-Sep-22	Larvae	Diamesa	20	RG_FOBSC_BIC-1_2022-09-14	
RG_FOBSC	14-Sep-22	Larvae	Eukiefferiella	40	RG_FOBSC_BIC-1_2022-09-14	
RG_FOBSC	14-Sep-22	Larvae	Pagastia	20	RG_FOBSC_BIC-1_2022-09-14	
RG_FOBSC	14-Sep-22	Larvae	Pericoma/Telmatoscopus	4140	RG_FOBSC_BIC-1_2022-09-14	
RG_FOBSC	14-Sep-22	Pupa	Empididae	40	RG_FOBSC_BIC-1_2022-09-14	
RG_FOBSC	14-Sep-22	Larvae	Thienemannimyia group	40	RG_FOBSC_BIC-1_2022-09-14	
RG_FOBSC	14-Sep-22	Larvae	Orthocladius complex	160	RG_FOBSC_BIC-1_2022-09-14	
RG_FOBSC	14-Sep-22	Larvae	Tvetenia	20	RG_FOBSC_BIC-1_2022-09-14	
RG_FOBSC	14-Sep-22	Larvae	Simulium	20	RG_FOBSC_BIC-1_2022-09-14	
RG_FOBSC	14-Sep-22	Larvae	Ameletus	20	RG_FOBSC_BIC-1_2022-09-14	
RG_FOBSC	14-Sep-22	Juvenile/Damaged	Baetidae	40	RG_FOBSC_BIC-1_2022-09-14	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Ephemerelellidae	160	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Drunella doddsii	200	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Drunella grandis group	20	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Epeorus	60	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Cinygmula	2040	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Heptageniidae	60	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Rhithrogena	140	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Capniidae	20	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Sweltsa	40	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Chloroperlidae	20	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Zapada	280	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Zapada oregonensis group	40	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Zapada cinctipes	120	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Perlodidae	20	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Hesperoperla	20	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Isoperla	360	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Megarcys	140	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Skwala	20	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Taeniopterygidae	80	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Glossosoma	120	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Brachycentrus	60	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Brachycentrus americanus	20	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Parapsyche	20	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Arctopsyche	200	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Hydropsychidae	80	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Rhyacophila	100	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Dicosmoecus	20	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Rhyacophila brunnea/vemna group	100	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Rhyacophila betteni group	20	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Adult	Sperchon	20	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Adult	Lebertia	220	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Mallochohelea	180	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	None	Nais	60	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Rhyacophila atrata complex	20	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Kogotus	240	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Baetis rhodani group	40	RG_FOBCP_BIC-1_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Baetis rhodani group	220	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Kogotus	120	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Rhyacophila atrata complex	20	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	None	Nais	100	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	None	Enchytraeidae	20	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Mallochohelea	20	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Adult	Lebertia	180	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Rhyacophila brunnea/vemna group	40	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Rhyacophila hyalinata group	60	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Rhyacophila	380	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Hydropsychidae	80	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Arctopsyche	180	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Parapsyche	60	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Brachycentrus	60	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Glossosoma	20	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Megarcys	20	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Taeniopterygidae	240	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Isoperla	540	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Perlodidae	60	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Zapada cinctipes	580	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Zapada columbiana	20	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Perlidae	20	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Zapada	220	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Sweltsa	20	RG_FOBCP_BIC-2_2022-09-14
RG_FOBCP	14-Sep-22	Juvenile/Damaged	Capniidae	60	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Rhithrogena	60	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Cinygmula	980	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Epeorus	80	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Drunella doddsii	80	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Juvenile/Damaged	Drunella grandis group	20	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Juvenile/Damaged	Ephemerelellidae	200	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Juvenile/Damaged	Baetidae	160	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Juvenile/Damaged	Baetis	20	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Simulium	140	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Pupa	Simuliidae	160	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Tvetenia	40	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Orthocladius complex	1680	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Thienemannimyia group	20	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Pericoma/Telmatoscopus	3520	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Trichoclinocera	20	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Pagastia	60	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Eukiefferiella	40	RG_FOBCP_BIC-2_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Diamesa	60	RG_FOBCP_BIC-2_2022-09-14	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FOBCP	14-Sep-22	Pupa	Chironomidae	220	RG_FOBCP_BIC-2_2022-09-14
	RG_FOBCP	14-Sep-22	Pupa	Chironomidae	30	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Micropsectra	10	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Pagastia	20	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Trichoclinocera	10	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Pericoma/Telmatoscopus	1460	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Pupa	Empididae	10	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Neoplasta	10	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Thienemannimyia group	20	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Orthocladus complex	150	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Tvetenia	10	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Pupa	Simuliidae	10	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Simuliidae	10	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Dicranota	30	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Ameletus	10	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Ephemerellidae	140	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Drunella doddsii	160	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Drunella grandis group	10	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Epeorus	80	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Cinygmula	910	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Heptageniidae	60	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Rhithrogena	100	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Capniidae	30	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Sweltsa	30	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Zapada	30	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Perlidae	30	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Zapada oregonensis group	20	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Zapada cinctipes	100	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Perlodidae	20	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Isoperla	150	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Apatania	10	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Megarcys	10	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Taeniopterygidae	130	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Glossosoma	40	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Parapsyche	20	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Hydropsychidae	10	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Arctopsyche	70	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Rhyacophila	80	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Rhyacophila brunnea/vemna group	10	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Rhyacophila betteni group	20	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Adult	Lebertia	180	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Adult	Sperchon	10	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Kogotus	200	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Baetis rhodani group	70	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Haploperla	10	RG_FOBCP_BIC-3_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Baetis rhodani group	260	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Rhyacophila atrata complex	20	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Kogotus	200	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Adult	Lebertia	80	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Mallochohelea	40	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	None	Nais	120	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	None	Enchytraeus	40	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Rhyacophila betteni group	20	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Rhyacophila brunnea/vemna group	160	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Rhyacophila hyalinata group	140	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Rhyacophila	420	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Parapsyche elsis	40	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Hydropsychidae	60	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Parapsyche	60	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Arctopsyche	100	RG_FOBCP_BIC-4_2022-09-14
RG_FOBCP	14-Sep-22	Larvae	Glossosoma	80	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Juvenile/Damaged	Taeniopterygidae	120	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Isoperla	380	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Megarcys	60	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Juvenile/Damaged	Perlodidae	40	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Hesperoperla	60	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Juvenile/Damaged	Perlidae	60	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Zapada oregonensis group	40	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Juvenile/Damaged	Nemouridae	60	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Juvenile/Damaged	Zapada	200	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Zapada cinctipes	380	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Sweltsa	20	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Juvenile/Damaged	Heptageniidae	40	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Cinygmula	1500	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Epeorus	160	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Rhithrogena	20	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Drunella grandis group	40	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Drunella doddsii	140	RG_FOBCP_BIC-4_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Hexatoma	20	RG_FOBCP_BIC-4_2022-09-14	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Baetidae	60	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Ephemereididae	340	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Dicranota	80	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Simulium	240	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Pupa	Simuliidae	120	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Pericoma/Telmatoscopus	2360	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Tvetenia	20	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Orthocladius complex	260	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Pupa	Empididae	20	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Pagastia	100	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Eukiefferiella	60	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Pupa	Chironomidae	100	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Elmidae	20	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Heterimnius	20	RG_FOBCP_BIC-4_2022-09-14
	RG_FOBCP	14-Sep-22	Pupa	Chironomidae	60	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Eukiefferiella	40	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Pagastia	40	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Pericoma/Telmatoscopus	2700	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Wiedemannia	20	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Orthocladius complex	380	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Tvetenia	40	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Pupa	Simuliidae	100	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Simulium	240	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Dicranota	20	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Baetis	40	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Baetidae	60	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Ameletus	20	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Hexatoma	20	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Drunella doddsii	120	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Ephemereididae	120	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Drunella	20	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Epeorus	240	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Cinygmula	920	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Heptageniidae	80	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Rhithrogena	20	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Zapada cinctipes	860	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Zapada	200	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Nemouridae	140	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Zapada oregonensis group	80	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Zapada columbiana	20	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Perlidae	100	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Perlodidae	20	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Isoperla	640	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Taeniopterygidae	120	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Megarcys	60	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Brachycentrus	20	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Arctopsyche	180	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Parapsyche	140	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Hydropsychidae	60	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Juvenile/Damaged	Rhyacophila	620	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	Larvae	Rhyacophila brunnea/vemna group	100	RG_FOBCP_BIC-5_2022-09-14
	RG_FOBCP	14-Sep-22	None	Enchytraeidae	20	RG_FOBCP_BIC-5_2022-09-14
RG_FOBCP	14-Sep-22	None	Nais	160	RG_FOBCP_BIC-5_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Mallochochelea	120	RG_FOBCP_BIC-5_2022-09-14	
RG_FOBCP	14-Sep-22	Adult	Lebertia	60	RG_FOBCP_BIC-5_2022-09-14	
RG_FOBCP	14-Sep-22	Adult	Hygrobatas	20	RG_FOBCP_BIC-5_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Kogotus	60	RG_FOBCP_BIC-5_2022-09-14	
RG_FOBCP	14-Sep-22	Larvae	Rhyacophila atrata complex	20	RG_FOBCP_BIC-5_2022-09-14	
RG_FOBCP	14-Sep-22	Juvenile/Damaged	Baetis rhodani group	40	RG_FOBCP_BIC-5_2022-09-14	
RG_FRCP1SW	19-Sep-22	Larvae	Pagastia	60	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Micropsectra	80	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Heterimnius	20	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Pupa	Chironomidae	60	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Eukiefferiella	80	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Orthocladius complex	840	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Tvetenia	80	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Thienemannimyia group	20	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Neoplasta	20	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Baetidae	40	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Baetis	420	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Pupa	Simuliidae	240	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Pericoma/Telmatoscopus	1760	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Dicranota	80	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Tipulidae	40	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Simulium	140	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Drunella doddsii	60	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Ephemereididae	40	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Heptageniidae	2200	RG_FRCP1SW_BIC-1_2022-09-19	
RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Capniidae	140	RG_FRCP1SW_BIC-1_2022-09-19	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Plecoptera	80	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Zapada	960	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Nemouridae	40	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Sweltsa	80	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Isoperla	1380	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Perlodidae	200	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Hesperoperla	80	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Zapada columbiana	80	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Zapada cinctipes	1420	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Zapada oregonensis group	60	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Glossosomatidae	20	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Brachycentridae	80	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Glossosoma	80	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Taeniopterygidae	3600	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Megarcys	140	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Rhyacophila betteni group	20	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Rhyacophila	260	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Rhyacophila brunnea/vemna group	160	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Hydropsychidae	40	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Parapsyche	40	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Arctopsyche	320	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Adult	Lebertia	140	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Mallochohelea	60	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	None	Enchytraeus	20	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Rhyacophila atrata complex	20	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Kogotus	140	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Baetis rhodani group	280	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Prosimulium/Helodon	160	RG_FRCP1SW_BIC-1_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Baetis rhodani group	60	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Kogotus	160	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	None	Enchytraeus	60	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Mallochohelea	280	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Adult	Lebertia	380	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Arctopsyche	100	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Hydropsychidae	100	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Parapsyche elsis	20	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Rhyacophila brunnea/vemna group	80	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Rhyacophila betteni group	40	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Rhyacophila	260	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Megarcys	80	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Taeniopterygidae	1960	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Brachycentridae	60	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Apatania	40	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Zapada cinctipes	1480	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Hesperoperla	20	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Perlodidae	400	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Isoperla	1460	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Leuctridae	20	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Nemouridae	240	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Zapada	920	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Capniidae	120	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Plecoptera	560	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Chloroperlidae	40	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Heptageniidae	1260	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Drunella doddsii	20	RG_FRCP1SW_BIC-2_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Ephemereillidae	60	RG_FRCP1SW_BIC-2_2022-09-19
RG_FRCP1SW	19-Sep-22	Larvae	Simulium	60	RG_FRCP1SW_BIC-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Dicranota	80	RG_FRCP1SW_BIC-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Pericoma/Telmatoscopus	3520	RG_FRCP1SW_BIC-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Simuliidae	40	RG_FRCP1SW_BIC-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Baetis	180	RG_FRCP1SW_BIC-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Baetidae	100	RG_FRCP1SW_BIC-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Thienemannimyia group	40	RG_FRCP1SW_BIC-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Empididae	20	RG_FRCP1SW_BIC-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Tvetenia	60	RG_FRCP1SW_BIC-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Orthocladius complex	840	RG_FRCP1SW_BIC-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Eukiefferiella	40	RG_FRCP1SW_BIC-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Pupa	Chironomidae	140	RG_FRCP1SW_BIC-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Heterlimnius	20	RG_FRCP1SW_BIC-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Ceratopogonidae	20	RG_FRCP1SW_BIC-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Micropsectra	20	RG_FRCP1SW_BIC-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Pagastia	60	RG_FRCP1SW_BIC-2_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Pagastia	100	RG_FRCP1SW_BIC-3_2022-09-19	
RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Orthoclaadiinae	20	RG_FRCP1SW_BIC-3_2022-09-19	
RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Tanytarsini	20	RG_FRCP1SW_BIC-3_2022-09-19	
RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Ceratopogonidae	20	RG_FRCP1SW_BIC-3_2022-09-19	
RG_FRCP1SW	19-Sep-22	Pupa	Chironomidae	80	RG_FRCP1SW_BIC-3_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Eukiefferiella	20	RG_FRCP1SW_BIC-3_2022-09-19	
RG_FRCP1SW	19-Sep-22	Larvae	Orthocladius complex	460	RG_FRCP1SW_BIC-3_2022-09-19	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FRCP1SW	19-Sep-22	Larvae	Tvetenia	40	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Thienemannimyia group	40	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Pupa	Empididae	40	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Trichoclinocera	40	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Baetis	80	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Baetidae	40	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Pericoma/Telmatoscopus	2440	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Dicranota	20	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Ephemerellidae	140	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Drunella doddsii	80	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Heptageniidae	1180	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Capniidae	80	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Zapada	820	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Nemouridae	140	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Isoperla	600	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Perlodidae	140	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Hesperoperla	20	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Zapada cinctipes	760	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Zapada columbiana	20	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Zapada oregonensis group	40	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Apatania	20	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Brachycentridae	20	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Glossosomatidae	20	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Taeniopterygidae	900	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Megarcys	40	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Rhyacophila	220	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Rhyacophila brunnea/vemna group	120	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Rhyacophila hyalinata group	20	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Juvenile/Damaged	Hydropsychidae	100	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Arctopsyche	120	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Adult	Lebertia	120	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Adult	Feltria	20	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Adult	Testudacarus	20	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Mallochohelea	20	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	None	Enchytraeus	80	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Kogotus	220	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Baetis rhodani group	180	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRCP1SW	19-Sep-22	Larvae	Prosimulium/Helodon	20	RG_FRCP1SW_BIC-3_2022-09-19
	RG_FRSCH2	14-Sep-22	Larvae	Rhyacophila vagrita group	20	RG_FRSCH2_BIC-1_2022-09-14
	RG_FRSCH2	14-Sep-22	Larvae	Baetis rhodani group	280	RG_FRSCH2_BIC-1_2022-09-14
	RG_FRSCH2	14-Sep-22	Larvae	Kogotus	460	RG_FRSCH2_BIC-1_2022-09-14
	RG_FRSCH2	14-Sep-22	Adult	Sperchon	40	RG_FRSCH2_BIC-1_2022-09-14
	RG_FRSCH2	14-Sep-22	Adult	Lebertia	280	RG_FRSCH2_BIC-1_2022-09-14
	RG_FRSCH2	14-Sep-22	None	Nais	20	RG_FRSCH2_BIC-1_2022-09-14
	RG_FRSCH2	14-Sep-22	None	Enchytraeus	20	RG_FRSCH2_BIC-1_2022-09-14
	RG_FRSCH2	14-Sep-22	Larvae	Mallochohelea	120	RG_FRSCH2_BIC-1_2022-09-14
	RG_FRSCH2	14-Sep-22	Larvae	Arctopsyche	20	RG_FRSCH2_BIC-1_2022-09-14
	RG_FRSCH2	14-Sep-22	Juvenile/Damaged	Hydropsychidae	140	RG_FRSCH2_BIC-1_2022-09-14
	RG_FRSCH2	14-Sep-22	Larvae	Ecclisomyia	20	RG_FRSCH2_BIC-1_2022-09-14
	RG_FRSCH2	14-Sep-22	Larvae	Rhyacophila	140	RG_FRSCH2_BIC-1_2022-09-14
RG_FRSCH2	14-Sep-22	Larvae	Rhyacophila betteni group	20	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Rhyacophila brunnea/vemna group	80	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Rhyacophila narvae	160	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Apatania	40	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Juvenile/Damaged	Taeniopterygidae	200	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Juvenile/Damaged	Glossosomatidae	140	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Glossosoma	60	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Zapada columbiana	20	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Zapada oregonensis group	60	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Zapada cinctipes	60	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Isoperla	1160	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Megarcys	80	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Hesperoperla pacifica	60	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Juvenile/Damaged	Perlodidae	600	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Juvenile/Damaged	Nemouridae	20	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Zapada	300	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Juvenile/Damaged	Plecoptera	20	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Juvenile/Damaged	Capniidae	100	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Sweltsa	20	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Juvenile/Damaged	Chloroperlidae	20	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Epeorus	20	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Juvenile/Damaged	Heptageniidae	500	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Juvenile/Damaged	Ephemerellidae	40	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Drunella	20	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Drunella doddsii	180	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Drunella spinifera	120	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Pericoma/Telmatoscopus	300	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Larvae	Dicranota	20	RG_FRSCH2_BIC-1_2022-09-14	
RG_FRSCH2	14-Sep-22	Juvenile/Damaged	Baetidae	20	RG_FRSCH2_BIC-1_2022-09-14	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FR SCH2	14-Sep-22	Larvae	Baetis	180	RG_FR SCH2_BIC-1_2022-09-14
	RG_FR SCH2	14-Sep-22	Pupa	Empididae	60	RG_FR SCH2_BIC-1_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Empididae	20	RG_FR SCH2_BIC-1_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Neoplasta	220	RG_FR SCH2_BIC-1_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Glutops	20	RG_FR SCH2_BIC-1_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Orthocladius complex	1540	RG_FR SCH2_BIC-1_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Pagastia	140	RG_FR SCH2_BIC-1_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Eukiefferiella	200	RG_FR SCH2_BIC-1_2022-09-14
	RG_FR SCH2	14-Sep-22	Pupa	Chironomidae	180	RG_FR SCH2_BIC-1_2022-09-14
	RG_FR SCH2	14-Sep-22	Pupa	Chironomidae	280	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Adult	Chironomidae	20	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Tanytarsini	20	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Pagastia	180	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Eukiefferiella	100	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Orthocladius complex	2080	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Parorthocladius	20	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Neoplasta	120	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Empididae	20	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Pupa	Empididae	80	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Tvetenia	20	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Baetis	160	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Baetidae	120	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Ameletus	20	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Dicranota	20	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Simulium	40	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Pericoma/Telmatoscopus	280	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Drunella doddsii	60	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Drunella	40	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Ephemere llidae	440	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Heptageniidae	540	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Drunella spinifera	20	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Capniidae	200	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Chloroperlidae	20	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Plecoptera	60	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Zapada	640	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Nemouridae	280	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Sweltsa	20	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Perlodidae	440	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Isoperla	1980	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Zapada cinctipes	120	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Zapada columbiana	60	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Zapada oregonensis group	60	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Hydropsychidae	120	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Glossosoma	220	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Micrasema	20	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Glossosomatidae	100	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Brachycentrus	40	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Apatania	60	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Megarcys	100	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Taeniopterygidae	740	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Rhyacophila brunnea/vemna group	60	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Rhyacophila	240	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Ecclisomyia	20	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Mallochohelea	20	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Kogotus	700	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Adult	Hydrozetidae	20	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	None	Nais	20	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Adult	Testudacarus	20	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Adult	Lebertia	360	RG_FR SCH2_BIC-2_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Rhyacophila narvae	140	RG_FR SCH2_BIC-2_2022-09-14
RG_FR SCH2	14-Sep-22	Larvae	Baetis rhodani group	200	RG_FR SCH2_BIC-2_2022-09-14	
RG_FR SCH2	14-Sep-22	Adult	Oribatida	20	RG_FR SCH2_BIC-2_2022-09-14	
RG_FR SCH2	14-Sep-22	Larvae	Prosimulium/Helodon	20	RG_FR SCH2_BIC-2_2022-09-14	
RG_FR SCH2	14-Sep-22	Adult	Oribatida	20	RG_FR SCH2_BIC-3_2022-09-14	
RG_FR SCH2	14-Sep-22	Larvae	Baetis rhodani group	40	RG_FR SCH2_BIC-3_2022-09-14	
RG_FR SCH2	14-Sep-22	Larvae	Kogotus	760	RG_FR SCH2_BIC-3_2022-09-14	
RG_FR SCH2	14-Sep-22	Larvae	Rhyacophila narvae	40	RG_FR SCH2_BIC-3_2022-09-14	
RG_FR SCH2	14-Sep-22	Adult	Lebertia	120	RG_FR SCH2_BIC-3_2022-09-14	
RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Trombidiformes	20	RG_FR SCH2_BIC-3_2022-09-14	
RG_FR SCH2	14-Sep-22	Adult	Sperchon	20	RG_FR SCH2_BIC-3_2022-09-14	
RG_FR SCH2	14-Sep-22	None	Nais	20	RG_FR SCH2_BIC-3_2022-09-14	
RG_FR SCH2	14-Sep-22	None	Enchytraeus	120	RG_FR SCH2_BIC-3_2022-09-14	
RG_FR SCH2	14-Sep-22	Larvae	Ecclisomyia	20	RG_FR SCH2_BIC-3_2022-09-14	
RG_FR SCH2	14-Sep-22	Larvae	Rhyacophila	300	RG_FR SCH2_BIC-3_2022-09-14	
RG_FR SCH2	14-Sep-22	Larvae	Rhyacophila brunnea/vemna group	40	RG_FR SCH2_BIC-3_2022-09-14	
RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Taeniopterygidae	260	RG_FR SCH2_BIC-3_2022-09-14	
RG_FR SCH2	14-Sep-22	Pupa	Trichoptera	20	RG_FR SCH2_BIC-3_2022-09-14	
RG_FR SCH2	14-Sep-22	Larvae	Megarcys	40	RG_FR SCH2_BIC-3_2022-09-14	
RG_FR SCH2	14-Sep-22	Larvae	Apatania	20	RG_FR SCH2_BIC-3_2022-09-14	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Brachycentridae	20	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Micrasema	20	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Glossosomatidae	60	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Glossosoma	20	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Hydropsychidae	40	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Zapada oregonensis group	80	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Zapada cinctipes	2280	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Zapada columbiana	160	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Isoperla	5500	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Hesperoperla	20	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Perlodidae	2040	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Sweltsa	40	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Malenka	40	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Zapada	1880	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Plecoptera	280	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Capniidae	100	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Chloroperlidae	20	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Drunella spinifera	100	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Heptageniidae	1380	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Ephemerellidae	360	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Drunella doddsii	140	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Pericoma/Telmatoscopus	520	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Simuliidae	60	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Simulium	200	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Tipulidae	40	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Baetidae	40	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Rhabdomastix	20	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Baetis	100	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Tvetenia	100	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Thienemannimyia group	40	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Pupa	Empididae	100	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Empididae	40	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Neoplasta	80	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Orthocladus complex	1180	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Eukiefferiella	380	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Pagastia	80	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Larvae	Brillia	80	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Pupa	Chironomidae	260	RG_FR SCH2_BIC-3_2022-09-14
	RG_FR SCH2	14-Sep-22	Juvenile/Damaged	Elmidae	40	RG_FR SCH2_BIC-3_2022-09-14
	RG_FRUPO	18-Sep-22	Larvae	Kogotus	660	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Ephemerella tibialis	20	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Rhyacophila atrata complex	20	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Haploperla	40	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Baetis rhodani group	40	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Mallochochelea	240	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	None	Enchytraeus	80	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Rhyacophila vofixa group	20	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Rhyacophila narvae	120	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Adult	Sperchon	20	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Adult	Stygothrombium	20	RG_FRUPO_BIC-1_2022-09-18
RG_FRUPO	18-Sep-22	Adult	Testudacarus	20	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Adult	Lebertia	440	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Rhyacophila	140	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Juvenile/Damaged	Hydropsychidae	60	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Rhyacophila betteni group	20	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Rhyacophila brunnea/vemna group	140	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Pupa	Trichoptera	160	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Apatania	20	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Juvenile/Damaged	Taeniopterygidae	200	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Glossosoma	140	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Juvenile/Damaged	Glossosomatidae	160	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Pedomoecus sierra	20	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Zapada oregonensis group	60	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Zapada cinctipes	160	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Juvenile/Damaged	Perlodidae	400	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Hesperoperla	20	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Isoperla	2100	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Megarcys	300	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Juvenile/Damaged	Nemouridae	60	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Zapada	200	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Juvenile/Damaged	Capniidae	80	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Sweltsa	100	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Juvenile/Damaged	Chloroperlidae	160	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Juvenile/Damaged	Heptageniidae	480	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Epeorus	20	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Juvenile/Damaged	Ephemerellidae	160	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Drunella spinifera	20	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Drunella doddsii	20	RG_FRUPO_BIC-1_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Simulium	40	RG_FRUPO_BIC-1_2022-09-18	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Tipulidae	20	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Dicranota	100	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Pupa	Simuliidae	60	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Baetis	100	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Ameletus	20	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Neoplasta	60	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Pericoma/Telmatoscopus	480	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Pupa	Empididae	60	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Thienemannimyia group	40	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Orthocladius complex	2180	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Pupa	Chironomidae	860	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Diamesa	40	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Pagastia	320	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Eukiefferiella	100	RG_FRUPO_BIC-1_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Eukiefferiella	60	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Pagastia	560	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Orthocladinae	20	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Diamesa	160	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Micropsectra	20	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Pupa	Chironomidae	560	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Orthocladius complex	2180	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Hydrobaenus	40	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Tvetenia	20	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Pupa	Empididae	20	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Empididae	20	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Glutops	20	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Neoplasta	60	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Tipula	20	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Ameletus	40	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Baetis	40	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Ephemereillidae	200	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Pericoma/Telmatoscopus	180	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Dicranota	60	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Tipulidae	20	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Simulium	80	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Drunella doddsii	20	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Epeorus	40	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Heptageniidae	360	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Chloroperlidae	140	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Sweltsa	20	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Capniidae	20	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Zapada	160	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Zapada cinctipes	180	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Megarcys	80	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Isoperla	2580	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Hesperoperla	20	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Perlodidae	600	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Zapada oregonensis group	40	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Apatania	60	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Glossosomatidae	100	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Glossosoma	140	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Taeniopterygidae	240	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Rhyacophila brunnea/vemna group	40	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Rhyacophila betteni group	40	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Rhyacophila narvae	100	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Hydropsychidae	140	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Rhyacophila	200	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Adult	Lebertia	200	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Trombidiformes	20	RG_FRUPO_BIC-2_2022-09-18
	RG_FRUPO	18-Sep-22	None	Enchytraeus	20	RG_FRUPO_BIC-2_2022-09-18
RG_FRUPO	18-Sep-22	None	Nais	20	RG_FRUPO_BIC-2_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Mallochohelea	40	RG_FRUPO_BIC-2_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Rhyacophila atrata complex	20	RG_FRUPO_BIC-2_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Kogotus	800	RG_FRUPO_BIC-2_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Kogotus	1480	RG_FRUPO_BIC-3_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Rhyacophila atrata complex	120	RG_FRUPO_BIC-3_2022-09-18	
RG_FRUPO	18-Sep-22	None	Enchytraeus	80	RG_FRUPO_BIC-3_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Mallochohelea	140	RG_FRUPO_BIC-3_2022-09-18	
RG_FRUPO	18-Sep-22	None	Nais	20	RG_FRUPO_BIC-3_2022-09-18	
RG_FRUPO	18-Sep-22	Juvenile/Damaged	Trombidiformes	20	RG_FRUPO_BIC-3_2022-09-18	
RG_FRUPO	18-Sep-22	Adult	Lebertia	420	RG_FRUPO_BIC-3_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Rhyacophila narvae	360	RG_FRUPO_BIC-3_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Rhyacophila brunnea/vemna group	160	RG_FRUPO_BIC-3_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Rhyacophila	260	RG_FRUPO_BIC-3_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Megarcys	240	RG_FRUPO_BIC-3_2022-09-18	
RG_FRUPO	18-Sep-22	Juvenile/Damaged	Taeniopterygidae	480	RG_FRUPO_BIC-3_2022-09-18	
RG_FRUPO	18-Sep-22	Pupa	Trichoptera	40	RG_FRUPO_BIC-3_2022-09-18	
RG_FRUPO	18-Sep-22	Larvae	Glossosoma	120	RG_FRUPO_BIC-3_2022-09-18	
RG_FRUPO	18-Sep-22	Juvenile/Damaged	Hydropsychidae	20	RG_FRUPO_BIC-3_2022-09-18	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FRUPO	18-Sep-22	Larvae	Apatania	40	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Glossosomatidae	160	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Zapada oregonensis group	220	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Zapada cinctipes	420	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Zapada columbiana	20	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Perlodidae	700	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Isoperla	3480	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Zapada	320	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Capniidae	60	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Sweltsa	240	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Mesocapnia	60	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Chloroperlidae	20	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Drunella spinifera	40	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Heptageniidae	1800	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Epeorus	100	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Drunella	60	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Drunella coloradensis	20	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Drunella doddsii	220	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Ephemereillidae	780	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Tipulidae	20	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Dicranota	140	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Pericoma/Telmatoscopus	200	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Pupa	Simuliidae	20	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Acentrella	20	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Baetis	60	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Tipula	20	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Neoplasta	80	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Empididae	20	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Pupa	Empididae	80	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Tvetenia	80	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Orthocladius complex	3540	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Eukiefferiella	20	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Pupa	Chironomidae	720	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Adult	Chironomidae	20	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Juvenile/Damaged	Elmidae	40	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Heterlimnius	20	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Adult	Heterlimnius	20	RG_FRUPO_BIC-3_2022-09-18
	RG_FRUPO	18-Sep-22	Larvae	Pagastia	660	RG_FRUPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Adult	Lebertia	120	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Trombidiformes	20	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Pisidiidae	60	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Mallochohelea	40	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Baetis rhodani group	440	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Rhyacophila atrata complex	40	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Kogotus	260	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Hydropsychidae	20	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Rhyacophila	120	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Limnephilidae	80	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Rhyacophila brunnea/vemna group	40	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Rhyacophila narvae	280	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Taeniopterygidae	680	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Megarcys	60	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Glossosomatidae	80	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Glossosoma	260	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Zapada oregonensis group	120	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Zapada cinctipes	240	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Zapada columbiana	20	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Isoperla	1120	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Perlodidae	640	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Zapada	300	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Nemouridae	220	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Capniidae	280	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Sweltsa	80	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Heptageniidae	660	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Ephemereillidae	60	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Simuliidae	40	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Dicranota	100	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Ameletus	20	RG_FODPO_BIC-1_2022-09-18
RG_FODPO	18-Sep-22	Juvenile/Damaged	Baetidae	200	RG_FODPO_BIC-1_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Baetis	80	RG_FODPO_BIC-1_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Pericoma/Telmatoscopus	40	RG_FODPO_BIC-1_2022-09-18	
RG_FODPO	18-Sep-22	Pupa	Empididae	20	RG_FODPO_BIC-1_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Neoplasta	20	RG_FODPO_BIC-1_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Parorthocladius	20	RG_FODPO_BIC-1_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Orthocladius complex	840	RG_FODPO_BIC-1_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Limnophyes	20	RG_FODPO_BIC-1_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Pagastia	40	RG_FODPO_BIC-1_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Eukiefferiella	20	RG_FODPO_BIC-1_2022-09-18	
RG_FODPO	18-Sep-22	None	Ceratopogonidae	40	RG_FODPO_BIC-1_2022-09-18	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FODPO	18-Sep-22	Adult	Heterimnius	20	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Heterimnius	120	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Elmidae	20	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Pupa	Chironomidae	100	RG_FODPO_BIC-1_2022-09-18
	RG_FODPO	18-Sep-22	Pupa	Chironomidae	180	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Elmidae	200	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Heterimnius	160	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Adult	Heterimnius	40	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Pagastia	160	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Eukiefferiella	20	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Orthocladus complex	1420	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Neoplasta	60	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Pupa	Empididae	40	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Thienemannimyia group	20	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Baetis	260	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Hexatoma	20	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Baetidae	40	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Tipulidae	20	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Simuliidae	20	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Pericoma/Telmatoscopus	320	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Ephemerellidae	60	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Drunella doddsii	20	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Heptageniidae	720	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Drunella spinifera	20	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Capniidae	160	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Mesocapnia	20	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Chloroperlidae	40	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Nemouridae	60	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Sweltsa	80	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Zapada	580	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Perlodidae	1040	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Isoperla	2480	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Zapada cinctipes	1060	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Zapada columbiana	80	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Zapada oregonensis group	120	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Hydropsychidae	40	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Glossosoma	200	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Glossosomatidae	220	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Megarcys	60	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Taeniopterygidae	560	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Pupa	Trichoptera	60	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Rhyacophila brunnea/vemna group	120	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Rhyacophila	140	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Ecclisomyia	20	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Baetis rhodani group	200	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Prosimulium/Helodon	20	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	None	Enchytraeus	40	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Kogotus	380	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Adult	Lebertia	140	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Rhyacophila narvae	260	RG_FODPO_BIC-2_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Rhyacophila narvae	80	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Adult	Lebertia	220	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Adult	Sperchon	20	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Kogotus	520	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Mallochohelea	40	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	None	Nais	20	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Baetis rhodani group	160	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Limnephilidae	20	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Hydropsychidae	40	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Rhyacophila	260	RG_FODPO_BIC-3_2022-09-18
RG_FODPO	18-Sep-22	Larvae	Rhyacophila brunnea/vemna group	160	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Juvenile/Damaged	Trichoptera	40	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Juvenile/Damaged	Taeniopterygidae	200	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Megarcys	120	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Juvenile/Damaged	Glossosomatidae	120	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Apatania	20	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Glossosoma	120	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Zapada oregonensis group	180	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Zapada columbiana	100	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Zapada cinctipes	1860	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Isoperla	2280	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Juvenile/Damaged	Perlodidae	700	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Hesperoperla	20	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Zapada	760	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Sweltsa	80	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Juvenile/Damaged	Capniidae	60	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Drunella spinifera	20	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Cinygmula	20	RG_FODPO_BIC-3_2022-09-18	
RG_FODPO	18-Sep-22	Larvae	Drunella doddsii	20	RG_FODPO_BIC-3_2022-09-18	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FODPO	18-Sep-22	Juvenile/Damaged	Ephemerelellidae	40	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Pericoma/Telmatoscopus	320	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Pupa	Simuliidae	20	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Simulium	60	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Dicranota	20	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Baetidae	60	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Baetis	140	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Pupa	Empididae	40	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Neoplasta	20	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Orthocladius complex	1980	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Tvetenia	20	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Eukiefferiella	40	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Pagastia	160	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Larvae	Heterlimnius	180	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Adult	Heterlimnius	60	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Elmidae	180	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Pupa	Chironomidae	400	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Adult	Chironomidae	20	RG_FODPO_BIC-3_2022-09-18
	RG_FODPO	18-Sep-22	Juvenile/Damaged	Tanytarsini	20	RG_FODPO_BIC-3_2022-09-18
	RG_FO22	9-Sep-22	Juvenile/Damaged	Elmidae	160	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Adult	Heterlimnius	40	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Heterlimnius	860	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Pupa	Chironomidae	60	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Micropsectra	520	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Pagastia	20	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Hydrobaenus	360	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Orthocladius complex	580	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Parorthocladius	20	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Pericoma/Telmatoscopus	180	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Pupa	Simuliidae	20	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Tipulidae	180	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Dicranota	120	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Tipula	120	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Ameletus	40	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Baetidae	40	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Baetis	20	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Ephemerelellidae	80	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Drunella grandis group	20	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Heptageniidae	60	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Cinygmula	380	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Capniidae	60	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Mesocapnia	20	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Zapada	60	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Zapada cinctipes	80	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Zapada oregonensis group	100	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Perlodidae	280	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Isoperla	780	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Skwala	20	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Taeniopterygidae	20	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Apataniidae	20	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Limnephilidae	80	RG_FO22_BIC-1_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Rhyacophila brunnea/vemna group	40	RG_FO22_BIC-1_2022-09-09
RG_FO22	9-Sep-22	Larvae	Rhyacophila narvae	60	RG_FO22_BIC-1_2022-09-09	
RG_FO22	9-Sep-22	None	Gammarus	20	RG_FO22_BIC-1_2022-09-09	
RG_FO22	9-Sep-22	Adult	Lebertia	260	RG_FO22_BIC-1_2022-09-09	
RG_FO22	9-Sep-22	None	Nais	20	RG_FO22_BIC-1_2022-09-09	
RG_FO22	9-Sep-22	None	Pisidiidae	60	RG_FO22_BIC-1_2022-09-09	
RG_FO22	9-Sep-22	Juvenile/Damaged	Pisidium	200	RG_FO22_BIC-1_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Mallochohelea	20	RG_FO22_BIC-1_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Kogotus	100	RG_FO22_BIC-1_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Ephemerella tibialis	20	RG_FO22_BIC-1_2022-09-09	
RG_FO22	9-Sep-22	Juvenile/Damaged	Baetis rhodani group	260	RG_FO22_BIC-1_2022-09-09	
RG_FO22	9-Sep-22	None	Tubificinae with hair chaetae	40	RG_FO22_BIC-1_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Eloeophila	40	RG_FO22_BIC-2_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Euphyllidorea	20	RG_FO22_BIC-2_2022-09-09	
RG_FO22	9-Sep-22	Juvenile/Damaged	Baetis rhodani group	320	RG_FO22_BIC-2_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Ephemerella tibialis	20	RG_FO22_BIC-2_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Kogotus	260	RG_FO22_BIC-2_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Mallochohelea	100	RG_FO22_BIC-2_2022-09-09	
RG_FO22	9-Sep-22	None	Pisidium	140	RG_FO22_BIC-2_2022-09-09	
RG_FO22	9-Sep-22	Juvenile/Damaged	Pisidiidae	80	RG_FO22_BIC-2_2022-09-09	
RG_FO22	9-Sep-22	Juvenile/Damaged	Gastropoda	20	RG_FO22_BIC-2_2022-09-09	
RG_FO22	9-Sep-22	Adult	Lebertia	160	RG_FO22_BIC-2_2022-09-09	
RG_FO22	9-Sep-22	Adult	Sperchon	20	RG_FO22_BIC-2_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Rhyacophila narvae	80	RG_FO22_BIC-2_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Rhyacophila brunnea/vemna group	120	RG_FO22_BIC-2_2022-09-09	
RG_FO22	9-Sep-22	Juvenile/Damaged	Limnephilidae	260	RG_FO22_BIC-2_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Ecclisomyia	80	RG_FO22_BIC-2_2022-09-09	
RG_FO22	9-Sep-22	Juvenile/Damaged	Rhyacophila	80	RG_FO22_BIC-2_2022-09-09	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FO22	9-Sep-22	Larvae	Apatania	220	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Pupa	Trichoptera	20	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Trichoptera	20	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Taeniopterygidae	20	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Megarcys	20	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Glossosomatidae	80	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Glossosoma	260	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Isoperla	1680	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Perlodidae	700	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Zapada oregonensis group	100	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Zapada cinctipes	120	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Zapada	300	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Nemouridae	40	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Chloroperlidae	40	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Capniidae	160	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Plecoptera	40	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Cinygmula	400	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Epeorus	20	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Drunella grandis group	100	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Ephemerellidae	60	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Baetis	20	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Baetidae	40	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Ameletus	20	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Tipula	40	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Dicranota	260	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Tipulidae	60	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Tvetenia	20	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Limnophyes	20	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Orthocladius complex	640	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Pupa	Empididae	40	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Empididae	20	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Chelifera/ Metachela	40	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Neoplasta	60	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Pericoma/Telmatoscopus	80	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Pagastia	140	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Eukiefferiella	80	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Micropsectra	80	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Pupa	Chironomidae	180	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Paracladopelma	20	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Adult	Heterlimnius	40	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Heterlimnius	2640	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Elmidae	940	RG_FO22_BIC-2_2022-09-09
	RG_FO22	9-Sep-22	Adult	Elmidae	20	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Elmidae	1560	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Adult	Heterlimnius	260	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Heterlimnius	3360	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Tanytarsini	40	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Pupa	Chironomidae	460	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Tanytarsus	20	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Eukiefferiella	360	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Pagastia	60	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Pericoma/Telmatoscopus	420	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Pupa	Empididae	20	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Orthocladius complex	1460	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Tvetenia	80	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Dicranota	40	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Simulium	80	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Pupa	Simuliidae	20	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Simuliidae	20	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Tipula	40	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Baetidae	80	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Baetis	60	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Ephemerellidae	100	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Drunella	20	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Drunella grandis group	140	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Drunella doddsii	40	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Cinygmula	480	RG_FO22_BIC-3_2022-09-09
RG_FO22	9-Sep-22	Juvenile/Damaged	Heptageniidae	40	RG_FO22_BIC-3_2022-09-09	
RG_FO22	9-Sep-22	Juvenile/Damaged	Capniidae	160	RG_FO22_BIC-3_2022-09-09	
RG_FO22	9-Sep-22	Juvenile/Damaged	Chloroperlidae	20	RG_FO22_BIC-3_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Mesocapnia	100	RG_FO22_BIC-3_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Sweltsa	40	RG_FO22_BIC-3_2022-09-09	
RG_FO22	9-Sep-22	Juvenile/Damaged	Nemouridae	40	RG_FO22_BIC-3_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Malenka	20	RG_FO22_BIC-3_2022-09-09	
RG_FO22	9-Sep-22	Juvenile/Damaged	Zapada	1000	RG_FO22_BIC-3_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Zapada cinctipes	640	RG_FO22_BIC-3_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Zapada oregonensis group	220	RG_FO22_BIC-3_2022-09-09	
RG_FO22	9-Sep-22	Juvenile/Damaged	Perlodidae	440	RG_FO22_BIC-3_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Isoperla	2580	RG_FO22_BIC-3_2022-09-09	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FO22	9-Sep-22	Larvae	Anagapetus	20	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Glossosoma	100	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Glossosomatidae	20	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Taeniopterygidae	180	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Apatania	20	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Pupa	Trichoptera	40	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Trichoptera	20	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Rhyacophila	120	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Ecclisomyia	360	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Limnephilidae	920	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Rhyacophila brunnea/vemna group	160	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Rhyacophila betteni group	20	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Rhyacophila narvae	120	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Adult	Lebertia	260	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	None	Pisidium	60	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	None	Nais	140	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	None	Enchytraeidae	20	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Mallochohelea	240	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Collembola	20	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Rhyacophila atrata complex	40	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Kogotus	620	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Baetis rhodani group	640	RG_FO22_BIC-3_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Baetis rhodani group	380	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Kogotus	380	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Rhyacophila atrata complex	60	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Mallochohelea	40	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	None	Pisidium	40	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Pisidiidae	20	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Adult	Lebertia	260	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Adult	Sperchon	20	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Rhyacophila narvae	180	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Oligophlebodes	20	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Rhyacophila brunnea/vemna group	80	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Limnephilidae	320	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Ecclisomyia	120	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Rhyacophila	60	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Trichoptera	20	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Apatania	180	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Taeniopterygidae	20	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Skwala	40	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Megarcys	20	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Glossosomatidae	40	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Pedomoecus sierra	40	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Glossosoma	300	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Isoperla	2120	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Perlodidae	760	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Zapada oregonensis group	80	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Zapada cinctipes	280	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Malenka	20	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Zapada	220	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Nemouridae	20	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Sweltsa	40	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Mesocapnia	200	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Capniidae	240	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Heptageniidae	40	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Cinygmula	220	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Epeorus	20	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Ephemereillidae	60	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Baetidae	40	RG_FO22_BIC-4_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Tipula	40	RG_FO22_BIC-4_2022-09-09
RG_FO22	9-Sep-22	Juvenile/Damaged	Tipulidae	20	RG_FO22_BIC-4_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Dicranota	140	RG_FO22_BIC-4_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Tvetenia	80	RG_FO22_BIC-4_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Orthocladus complex	260	RG_FO22_BIC-4_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Limnophyes	40	RG_FO22_BIC-4_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Hydrobaenus	60	RG_FO22_BIC-4_2022-09-09	
RG_FO22	9-Sep-22	Pupa	Empididae	20	RG_FO22_BIC-4_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Pericoma/Telmatoscopus	20	RG_FO22_BIC-4_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Pagastia	60	RG_FO22_BIC-4_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Eukiefferiella	60	RG_FO22_BIC-4_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Micropsectra	20	RG_FO22_BIC-4_2022-09-09	
RG_FO22	9-Sep-22	Pupa	Chironomidae	140	RG_FO22_BIC-4_2022-09-09	
RG_FO22	9-Sep-22	Adult	Heterlimnius	140	RG_FO22_BIC-4_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Heterlimnius	1420	RG_FO22_BIC-4_2022-09-09	
RG_FO22	9-Sep-22	Juvenile/Damaged	Ceratopogonidae	20	RG_FO22_BIC-4_2022-09-09	
RG_FO22	9-Sep-22	Juvenile/Damaged	Elmidae	200	RG_FO22_BIC-4_2022-09-09	
RG_FO22	9-Sep-22	Juvenile/Damaged	Elmidae	540	RG_FO22_BIC-5_2022-09-09	
RG_FO22	9-Sep-22	Adult	Heterlimnius	460	RG_FO22_BIC-5_2022-09-09	
RG_FO22	9-Sep-22	Larvae	Heterlimnius	1460	RG_FO22_BIC-5_2022-09-09	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FO22	9-Sep-22	Pupa	Chironomidae	360	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Eukiefferiella	280	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Pagastia	20	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Pericoma/Telmatoscopus	180	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Pupa	Empididae	20	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Chelifera/ Metachela	20	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Neoplasta	40	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Orthocladius complex	540	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Tvetenia	40	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Dicranota	20	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Simulium	100	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Pupa	Simuliidae	20	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Simuliidae	20	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Tipula	40	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Baetidae	120	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Baetis	60	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Ephemerellidae	40	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Drunella grandis group	40	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Cinygmula	380	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Heptageniidae	20	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Capniidae	200	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Rhithrogena	20	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Mesocapnia	80	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Chloroperlidae	40	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Nemouridae	60	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Zapada	200	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Zapada cinctipes	220	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Zapada columbiana	20	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Zapada oregonensis group	160	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Perlodidae	380	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Isoperla	1400	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Glossosoma	340	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Glossosomatidae	20	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Megarcys	120	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Apataniidae	20	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Pupa	Trichoptera	20	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Trichoptera	40	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Taeniopterygidae	140	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Ecclisomyia	80	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Limnephilidae	340	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Rhyacophila brunnea/vemna group	220	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Rhyacophila narvae	80	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Adult	Lebertia	40	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Pisidiidae	40	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	None	Pisidium	80	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	None	Nais	60	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Mallochohelea	100	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Kogotus	660	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Rhyacophila atrata complex	40	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Juvenile/Damaged	Baetis rhodani group	480	RG_FO22_BIC-5_2022-09-09
	RG_FO22	9-Sep-22	Larvae	Haploperla	40	RG_FO22_BIC-5_2022-09-09
	RG_FOUEW	10-Sep-22	Larvae	Baetis rhodani group	220	RG_FOUEW_BIC-1_2022-09-10
	RG_FOUEW	10-Sep-22	Larvae	Kogotus	100	RG_FOUEW_BIC-1_2022-09-10
	RG_FOUEW	10-Sep-22	Juvenile/Damaged	Trombidiformes	20	RG_FOUEW_BIC-1_2022-09-10
	RG_FOUEW	10-Sep-22	Adult	Lebertia	260	RG_FOUEW_BIC-1_2022-09-10
	RG_FOUEW	10-Sep-22	Adult	Testudacarus	20	RG_FOUEW_BIC-1_2022-09-10
	RG_FOUEW	10-Sep-22	Larvae	Mallochohelea	20	RG_FOUEW_BIC-1_2022-09-10
	RG_FOUEW	10-Sep-22	None	Lumbriculidae	20	RG_FOUEW_BIC-1_2022-09-10
	RG_FOUEW	10-Sep-22	Larvae	Rhyacophila brunnea/vemna group	180	RG_FOUEW_BIC-1_2022-09-10
	RG_FOUEW	10-Sep-22	Juvenile/Damaged	Hydropsychidae	60	RG_FOUEW_BIC-1_2022-09-10
RG_FOUEW	10-Sep-22	Larvae	Parapsyche elsis	60	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Larvae	Rhyacophila	80	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Juvenile/Damaged	Trichoptera	40	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Juvenile/Damaged	Taeniopterygidae	160	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Larvae	Zapada oregonensis group	120	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Larvae	Zapada columbiana	260	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Larvae	Zapada cinctipes	80	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Larvae	Megarcys	80	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Larvae	Isoperla	340	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Juvenile/Damaged	Perlodidae	60	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Larvae	Hesperoperla	20	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Juvenile/Damaged	Plecoptera	60	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Juvenile/Damaged	Capniidae	80	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Larvae	Sweltsa	120	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Larvae	Mesocapnia	180	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Juvenile/Damaged	Chloroperlidae	60	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Larvae	Zapada	100	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Juvenile/Damaged	Cinygmula	40	RG_FOUEW_BIC-1_2022-09-10	
RG_FOUEW	10-Sep-22	Juvenile/Damaged	Heptageniidae	1500	RG_FOUEW_BIC-1_2022-09-10	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FOU EW	10-Sep-22	Larvae	Drunella spinifera	40	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Drunella doddsii	40	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Baetis	40	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Ephemerellidae	20	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Baetidae	40	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Ameletus	20	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Thienemanniella	40	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Pupa	Empididae	20	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Pericoma/Telmatoscopus	120	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Neoplasta	20	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Parorthocladius	60	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Tvetenia	140	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Hydrobaenus	180	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Orthocladius complex	1240	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Micropsectra	80	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Eukiefferiella	220	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Pseudodiamesa	40	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Pagastia	300	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Pupa	Chironomidae	320	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Elmidae	100	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Adult	Heterlimnius	20	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Heterlimnius	40	RG_FOU EW_BIC-1_2022-09-10
	RG_FOU EW	10-Sep-22	Adult	Heterlimnius	180	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Heterlimnius	340	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Adult	Stictotarsus	20	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Elmidae	340	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Pupa	Chironomidae	400	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Pagastia	60	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Eukiefferiella	180	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Micropsectra	320	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Orthocladius complex	780	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Hydrobaenus	320	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Rheocricotopus	20	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Neoplasta	120	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Oreogeton	20	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Pupa	Empididae	40	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Baetidae	20	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Ameletus	120	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Tipula	60	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Baetis	60	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Pericoma/Telmatoscopus	460	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Dicranota	40	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Tipulidae	40	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Drunella doddsii	80	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Drunella spinifera	40	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Drunella	40	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Ephemerellidae	300	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Heptageniidae	2360	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Epeorus	20	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Zapada	100	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Nemouridae	40	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Mesocapnia	20	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Sweltsa	40	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Capniidae	100	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Plecoptera	20	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Perlodidae	220	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Megarcys	40	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Isoperla	560	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Zapada cinctipes	100	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Zapada columbiana	80	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Zapada oregonensis group	120	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Taeniopterygidae	260	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Trichoptera	40	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Brachycentridae	40	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Glossosomatidae	20	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Rhyacophila	280	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Limnephilidae	240	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Hydropsychidae	180	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Rhyacophila brunnea/vemna group	240	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	None	Nais	160	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	None	Enchytraeus	20	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	None	Hydra	20	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Pisidiidae	60	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	None	Pisidium	20	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Adult	Testudacarus	20	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Adult	Lebertia	180	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Trombidiformes	20	RG_FOU EW_BIC-2_2022-09-10
RG_FOU EW	10-Sep-22	Larvae	Kogotus	200	RG_FOU EW_BIC-2_2022-09-10	
RG_FOU EW	10-Sep-22	Larvae	Rhyacophila atrata complex	20	RG_FOU EW_BIC-2_2022-09-10	

Table C.6: Kick and Sweep Data from Reference and Mine-exposed Areas, FRO LAEMP, September 2022

	Area	Date	Life Stage	Taxa	Abundance	Sample ID
Mine-Exposed	RG_FOU EW	10-Sep-22	Larvae	Baetis rhodani group	60	RG_FOU EW_BIC-2_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Rhyacophila atrata complex	17	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Baetis rhodani group	50	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Kogotus	117	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Adult	Lebertia	67	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Adult	Sperchon	17	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	None	Enchytraeus	83	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	None	Nais	33	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Rhyacophila	17	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Rhyacophila brunnea/vemna group	167	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Parapsyche elsis	33	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Glossosomatidae	17	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Hydropsychidae	217	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Taeniopterygidae	17	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Zapada oregonensis group	50	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Zapada columbiana	67	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Isoperla	300	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Perlodidae	150	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Capniidae	17	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Sweltsa	17	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Zapada cinctipes	50	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Zapada	83	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Nemouridae	67	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Heptageniidae	1033	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Cinygmula	17	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Drunella	17	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Drunella doddsii	50	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Simulium	200	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Pericoma/Telmatoscopus	83	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Simuliidae	67	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Pupa	Simuliidae	50	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Ephemerellidae	100	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Baetis	50	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Dicranota	17	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Ameletus	67	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Baetidae	17	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Corynoneura	17	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Tvetenia	17	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Neoplasta	83	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Orthocladius complex	800	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Eukiefferiella	183	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Pagastia	50	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Pupa	Chironomidae	317	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Juvenile/Damaged	Elmidae	167	RG_FOU EW_BIC-3_2022-09-10
	RG_FOU EW	10-Sep-22	Larvae	Heterlimnius	167	RG_FOU EW_BIC-3_2022-09-10
RG_FOU EW	10-Sep-22	Adult	Heterlimnius	233	RG_FOU EW_BIC-3_2022-09-10	

Table C.7: Summarized Benthic Invertebrate Data from Reference and Mine-Exposed Areas, FRO LAEMP

	Area	date	rep	Abundance	Richness	EPT (%)	Eph (%)	Plec (%)	Tric (%)	Chiron (%)	EPT Abund	Eph Abund	Plec Abund	Tric Abund	Chiron Abund	Baetiidae Abund	Heptageniidae Abund	Ephemereillidae Abund	Autotrophic Heterotrophic Index	Filtering Collector Index	Predator Index	Shredder Index	Benthic Hyporheic Index
Reference	RG_HENUP	12-Sep-22	1	6,340	34.0	76.7	50.2	19.9	6.62	20.5	4,860	3,180	1,260	420	1,300	20.0	2,860	260	1.06	0.135	0.195	0.598	0.00333
			2	6,050	38.0	78.2	58.7	15.7	3.86	17.6	4,733	3,550	950	233	1,067	33.3	3,000	467	1.20	0.0821	0.168	0.677	0.00928
			3	7,020	27.0	79.5	67.0	10.3	2.28	16.5	5,580	4,700	720	160	1,160	0	4,040	480	1.43	0.0713	0.150	0.636	0.00337
	RG_FO26	16-Sep-22	1	32,720	44.0	63.7	48.2	8.37	7.09	11.2	20,840	15,780	2,740	2,320	3,680	1,660	8,920	4,980	0.350	0.0646	0.158	0.281	0.363
			2	44,900	44.0	75.3	54.1	10.4	10.7	6.06	33,800	24,300	4,680	4,820	2,720	1,780	17,500	4,980	0.474	0.0988	0.142	0.226	0.222
			3	44,960	50.0	71.6	45.7	11.8	14.0	7.74	32,180	20,560	5,320	6,300	3,480	2,240	13,020	5,260	0.370	0.145	0.170	0.273	0.260
	RG_FODHE	19-Sep-22	1	13,660	37.0	77.9	59.6	11.0	7.32	5.71	10,640	8,140	1,500	1,000	780	200	4,040	3,880	0.586	0.0490	0.459	1.48	0.170
			2	10,400	31.0	84.0	67.5	9.81	6.73	2.31	8,740	7,020	1,020	700	240	120	5,220	1,680	1.64	0.0433	0.212	0.734	0.159
			3	8,820	28.0	90.9	76.0	9.98	4.99	1.13	8,020	6,700	880	440	100.0	160	4,600	1,940	1.69	0.138	0.197	1.05	0.0639
	RG_FOUCL	16-Sep-22	1	20,800	34.0	87.9	78.9	5.48	3.46	1.25	18,280	16,420	1,140	720	260	140	13,500	2,560	2.42	0.0292	0.163	1.06	0.120
			2	25,100	40.0	91.2	73.5	9.24	8.53	1.43	22,900	18,440	2,320	2,140	360	260	15,360	2,740	2.34	0.117	0.249	1.18	0.0701
			3	21,240	37.0	88.6	71.3	10.7	6.59	4.43	18,820	15,140	2,280	1,400	940	720	11,920	2,500	1.64	0.119	0.247	0.621	0.0666
	RG_FOUNGD	15-Sep-22	1	10,320	32.0	60.7	39.1	10.7	10.8	1.74	6,260	4,040	1,100	1,120	180	180	2,920	940	0.588	0.00951	0.289	0.275	0.596
			2	20,040	34.0	76.0	55.8	6.99	13.3	0.499	15,240	11,180	1,400	2,660	100	320	8,960	1,900	1.26	0.0117	0.302	0.419	0.309
			3	13,160	26.0	87.8	67.3	11.6	8.97	0.608	11,560	8,860	1,520	1,180	80.0	120	6,980	1,740	1.73	0.0690	0.299	1.23	0.123
RG_FODNGD	15-Sep-22	1	9,600	32.0	64.4	49.0	8.33	7.08	5.21	6,180	4,700	800	680	500	140	3,260	1,300	0.685	0.0409	0.279	0.410	0.426	
		2	14,180	35.0	61.2	44.1	10.4	6.63	1.27	8,680	6,260	1,480	940	180	160	4,960	1,140	0.687	0.0146	0.218	0.320	0.606	
		3	13,460	33.0	59.7	38.3	10.2	11.1	5.79	8,040	5,160	1,380	1,500	780	40.0	3,900	1,200	0.608	0.0409	0.295	0.257	0.517	
RG_MP1	12-Sep-22	1	12,860	39.0	64.8	48.4	7.47	9.02	6.22	8,340	6,220	960	1,160	800	360	4,640	1,220	0.864	0.078	0.244	0.293	0.392	
		2	2,710	36.0	60.1	47.6	4.80	7.75	2.58	1,630	1,290	130	210	70.0	45.0	920	315	0.657	0.0339	0.264	0.333	0.535	
		3	10,600	31.0	53.2	40.8	5.09	7.36	0.755	5,640	4,320	540	780	80.0	100	3,460	760	0.548	0.0237	0.185	0.163	0.831	
RG_FOUSH	12-Sep-22	1	10,400	38.0	39.8	26.0	5.96	7.88	7.69	4,140	2,700	620	820	800	40.0	2,280	380	0.467	0.219	0.148	0.101	1.07	
		2	9,940	36.0	40.9	25.1	6.04	9.66	11.3	4,060	2,500	600	960	1,120	80.0	1,780	640	0.407	0.229	0.194	0.143	0.907	
		3	10,440	35.0	34.9	21.8	3.83	9.20	12.6	3,640	2,280	400	960	1,320	100	2,040	120	0.434	0.227	0.102	0.0313	1.12	
RG_FOUKI	13-Sep-22	1	14,000	34.0	27.3	22.4	2.71	2.14	10.3	3,820	3,140	380	300	1,440	120	2,600	400	0.368	0.153	0.0737	0.0526	1.66	
		2	10,600	33.0	30.2	22.6	2.83	4.72	17.6	3,200	2,400	300	500	1,860	200	1,760	420	0.260	0.101	0.0519	0.0426	1.10	
		3	15,620	37.0	37.8	30.4	3.84	3.59	9.09	5,900	4,740	600	560	1,420	40.0	4,140	560	0.497	0.157	0.0980	0.0628	1.10	
RG_FOBKS	12-Sep-22	1	7,720	38.0	56.7	36.8	10.6	9.33	1.81	4,380	2,840	820	720	140	100	2,500	240	0.364	0.101	0.133	0.0946	0.704	
		2	7,920	33.0	54.5	36.6	8.59	9.34	0.758	4,320	2,900	680	740	60.0	20.0	2,640	240	0.415	0.0319	0.166	0.0515	0.764	
		3	10,320	32.0	45.4	25.4	10.8	9.11	4.26	4,680	2,620	1,120	940	440	20.0	2,300	300	0.498	0.231	0.169	0.122	0.993	
RG_SCOUTDS	13-Sep-22	1	10,400	35.0	41.5	32.1	5.77	3.65	2.31	4,320	3,340	600	380	240	20.0	2,380	920	0.418	0.0623	0.183	0.197	1.18	
		2	14,100	43.0	49.5	31.5	10.1	7.94	7.23	6,980	4,440	1,420	1,120	1,020	60.0	3,560	800	0.538	0.138	0.178	0.183	0.734	
		3	14,020	37.0	37.8	23.8	8.42	5.56	6.85	5,300	3,340	1,180	780	960	0	2,440	900	0.395	0.154	0.169	0.131	1.14	
RG_FOBSC	13-Sep-22	1	15,840	45.0	44.1	24.1	12.9	7.07	8.96	6,980	3,820	2,040	1,120	1,420	280	2,800	700	0.422	0.240	0.159	0.189	0.866	
		2	14,040	42.0	41.6	22.6	8.12	10.8	5.98	5,840	3,180	1,140	1,520	840	120	2,480	580	0.451	0.410	0.163	0.121	0.944	
		3	22,340	42.0	42.0	24.6	9.94	7.43	4.30	9,380	5,500	2,220	1,660	960	140	4,580	780	0.369	0.113	0.171	0.132	1.14	
RG_FOBBCP	14-Sep-22	1	10,040	45.0	49.2	27.7	13.9	7.57	3.98	4,940	2,780	1,400	760	400	80.0	2,300	380	0.327	0.0379	0.187	0.101	0.827	
		2	10,900	40.0	42.4	16.7	17.4	8.26	19.4	4,620	1,820	1,900	900	2,120	400	1,120	300	0.132	0.0866	0.188	0.170	0.547	
		3	4,530	40.0	56.5	34.0	16.8	5.74	5.30	2,560	1,540	760	260	240	70.0	1,150	310	0.356	0.0175	0.228	0.158	0.524	
		4	8,980	41.0	58.8	28.5	18.0	12.2	6.01	5,280	2,560	1,620	1,100	540	320	1,720	520	0.292	0.139	0.272	0.204	0.423	
		5	9,160	39.0	55.9	18.3	25.1	12.4	6.11	5,120	1,680	2,300	1,140	560	140	1,260	260	0.192	0.162	0.283	0.293	0.508	
RG_FRCP1SW	19-Sep-22	1	16,380	40.0	76.2	18.6	51.3	6.35	7.45	12,480	3,040	8,400	1,040	1,220	740	2,200	100	0.220	0.194	0.245	1.44	0.134	
		2	15,520	37.0	63.4	10.8	48.1	4.51	7.73	9,840	1,680	7,460	700	1,200	340	1,260	80.0	0.127	0.0672	0.308	0.960	0.351	
		3	9,740	38.0	62.8	17.4	38.8	6.57	8.01	6,120	1,700	3,780	640	780	300	1,180	220	0.196	0.0625	0.244	0.775	0.370	
RG_FRSCH2	14-Sep-22	1	8,560	40.0	62.9	15.9	37.1	9.81	24.1	5,380	1,360	3,180	840	2,060	480	520	360	0.279	0.0625	0.743	0.263	0.0603	
		2	11,800	42.0	68.1	13.6	45.9	8.64	23.1	8,040	1,600	5,420	1,020	2,720	480	540	560	0.170	0.0686	0.649	0.696	0.0304	
		3	19,800	42.0	82.1	10.9	68.2	3.03	10.7	16,260	2,160	13,500	600	2,120	180	1,380	600	0.219	0.161	0.933	1.68	0.0371	
RG_FRUPO	18-Sep-22	1	11,620	45.0	55.4	7.57	39.1	8.78	30.5	6,440	880	4,540	1,020	3,540	140	500	220	0.175	0.0598	0.860	0.211	0.0709	
		2	10,820	41.0	59.3	6.47	45.1	7.76	33.5	6,420	700	4,880	840	3,620	40.0	400	220	0.158	0.0678	0.915	0.221	0.0260	
		3	18,500	40.0	65.5	16.8	41.8	6.92	27.2	12,120	3,100	7,740	1,280	5,040	80.0	1,900	1,120	0.324	0.0259	0.836	0.428	0.0218	
RG_FODPO	18-Sep-22	1	8,100	35.0	79.0	18.0	49.6	11.4	12.8	6,400	1,460	4,020	920	1,040	720	660	60.0	0.320	0.0667	0.588	1.05	0.0256	
		2	11,980	34.0	76.0	11.0	56.1	8.85	15.0	9,100	1,320	6,720	1,060	1,800	500								

APPENDIX D

WATER

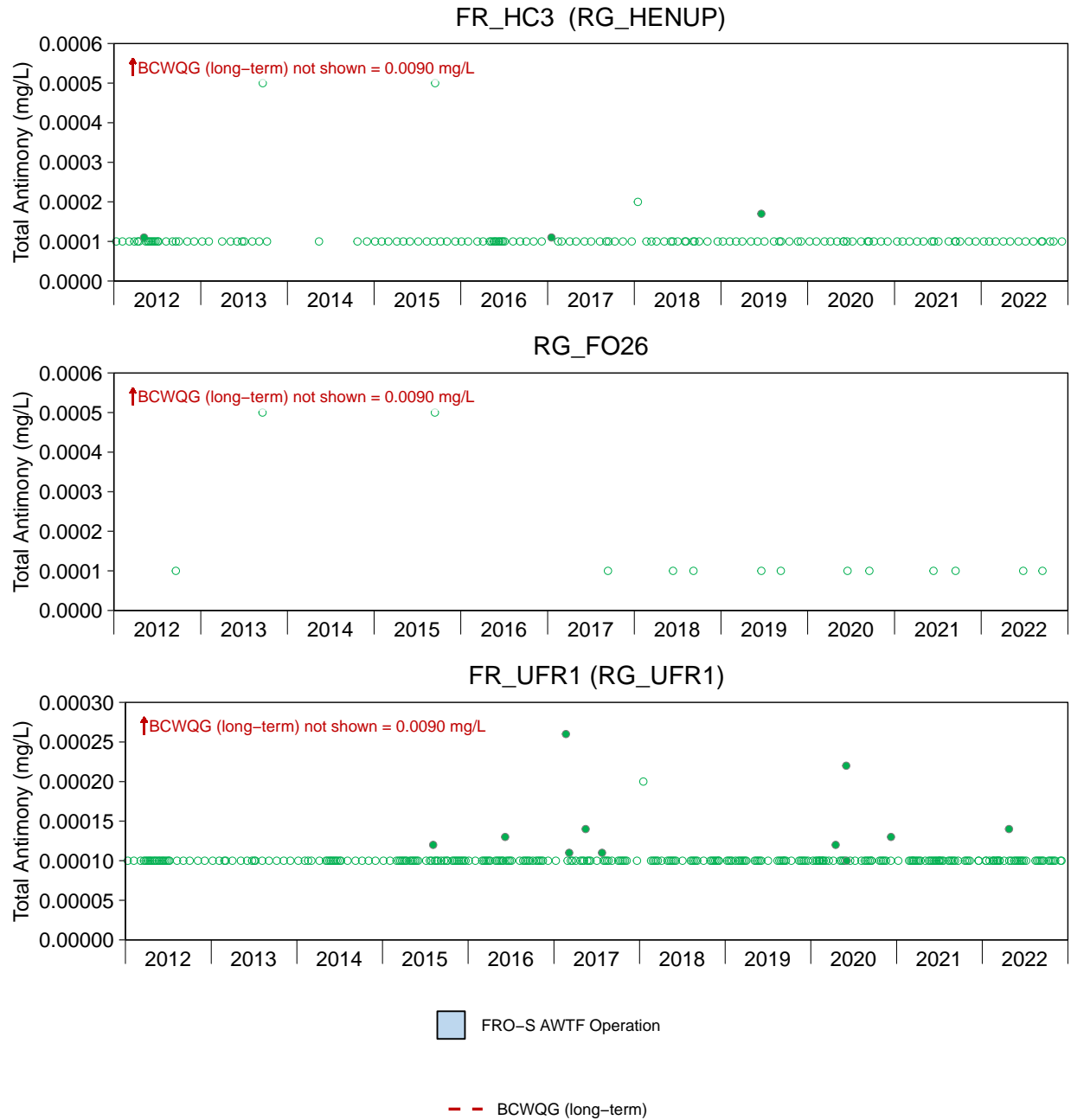


Figure D.1: Time Series Plots for Total Antimony Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

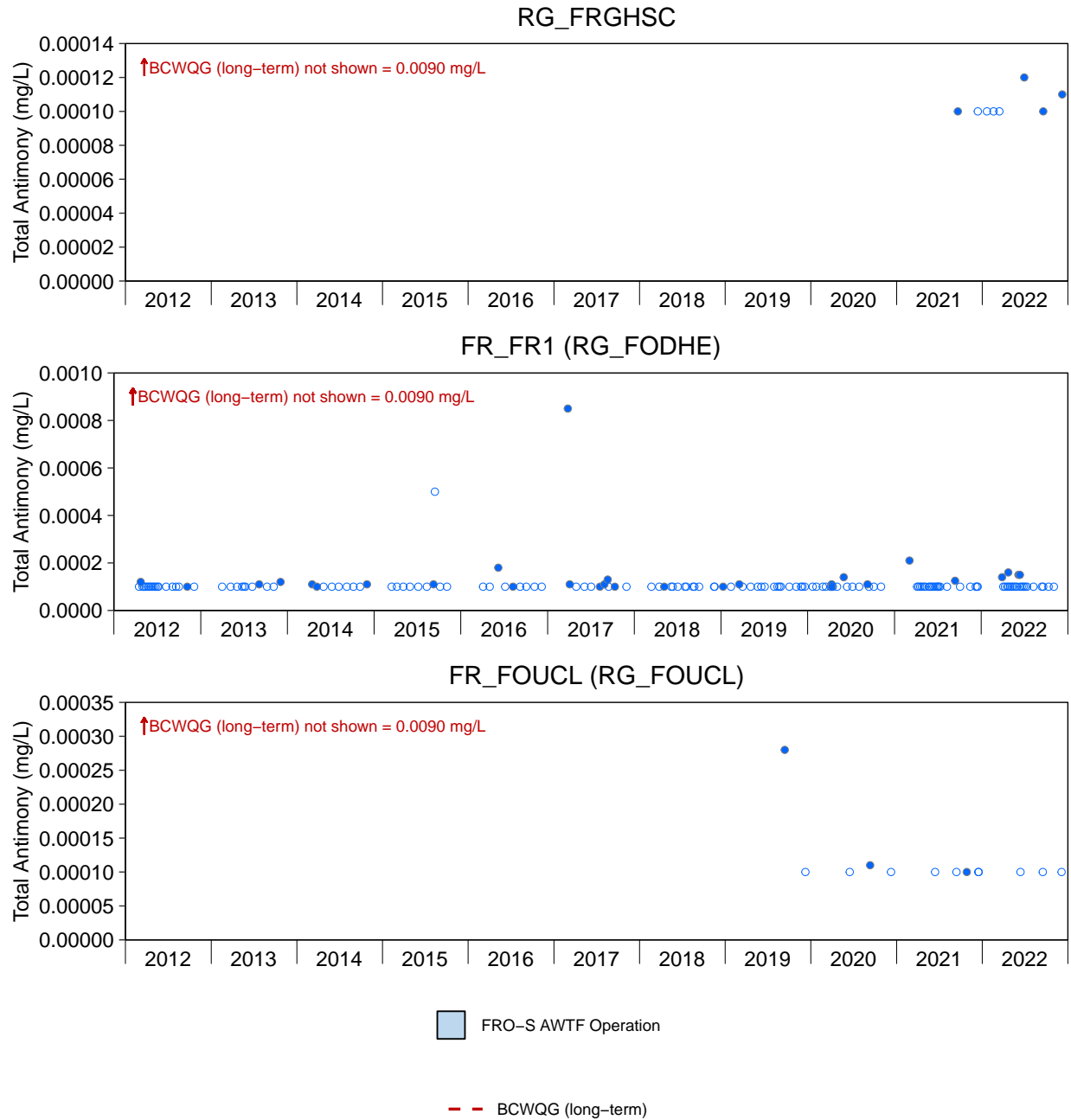


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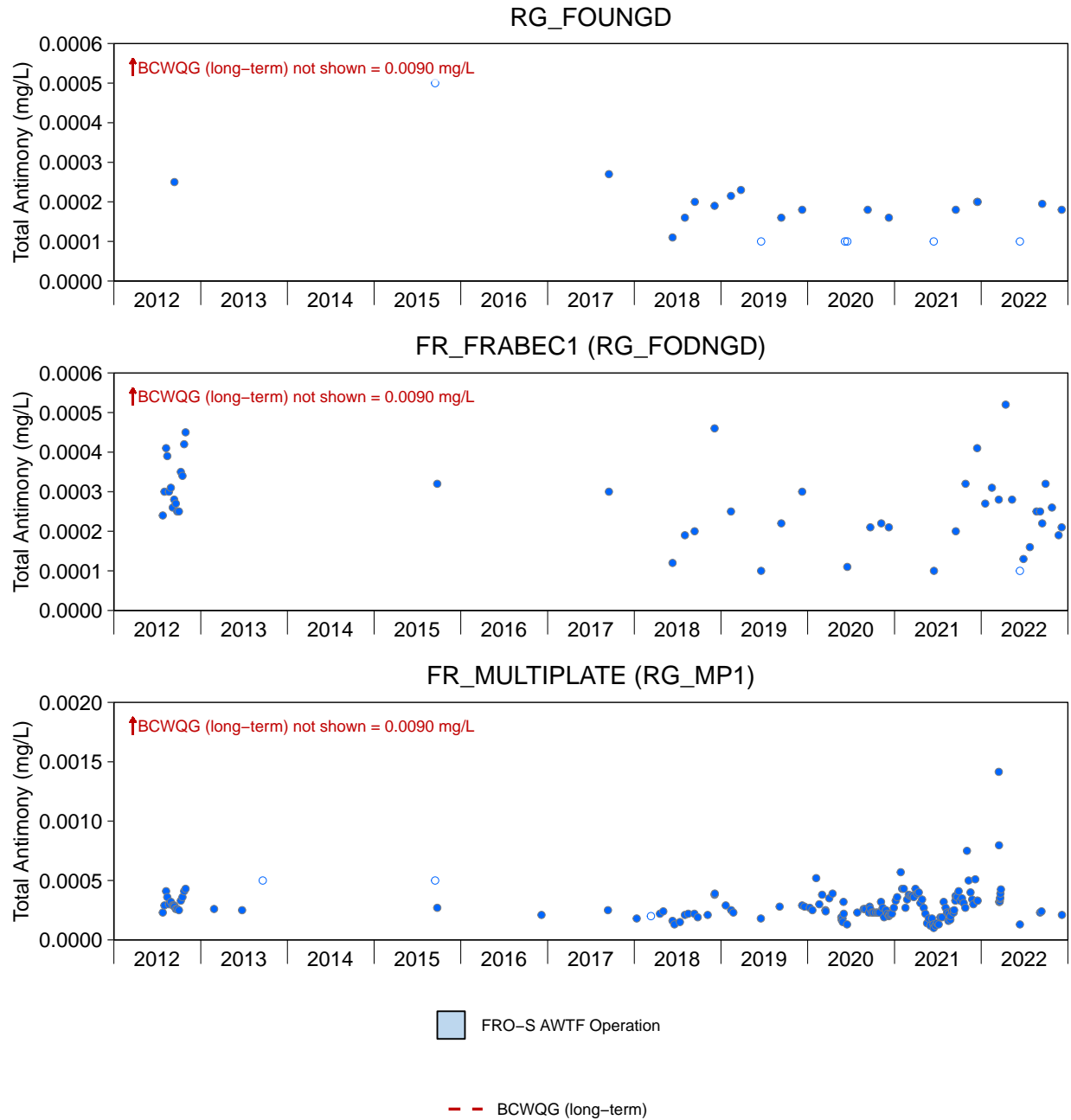


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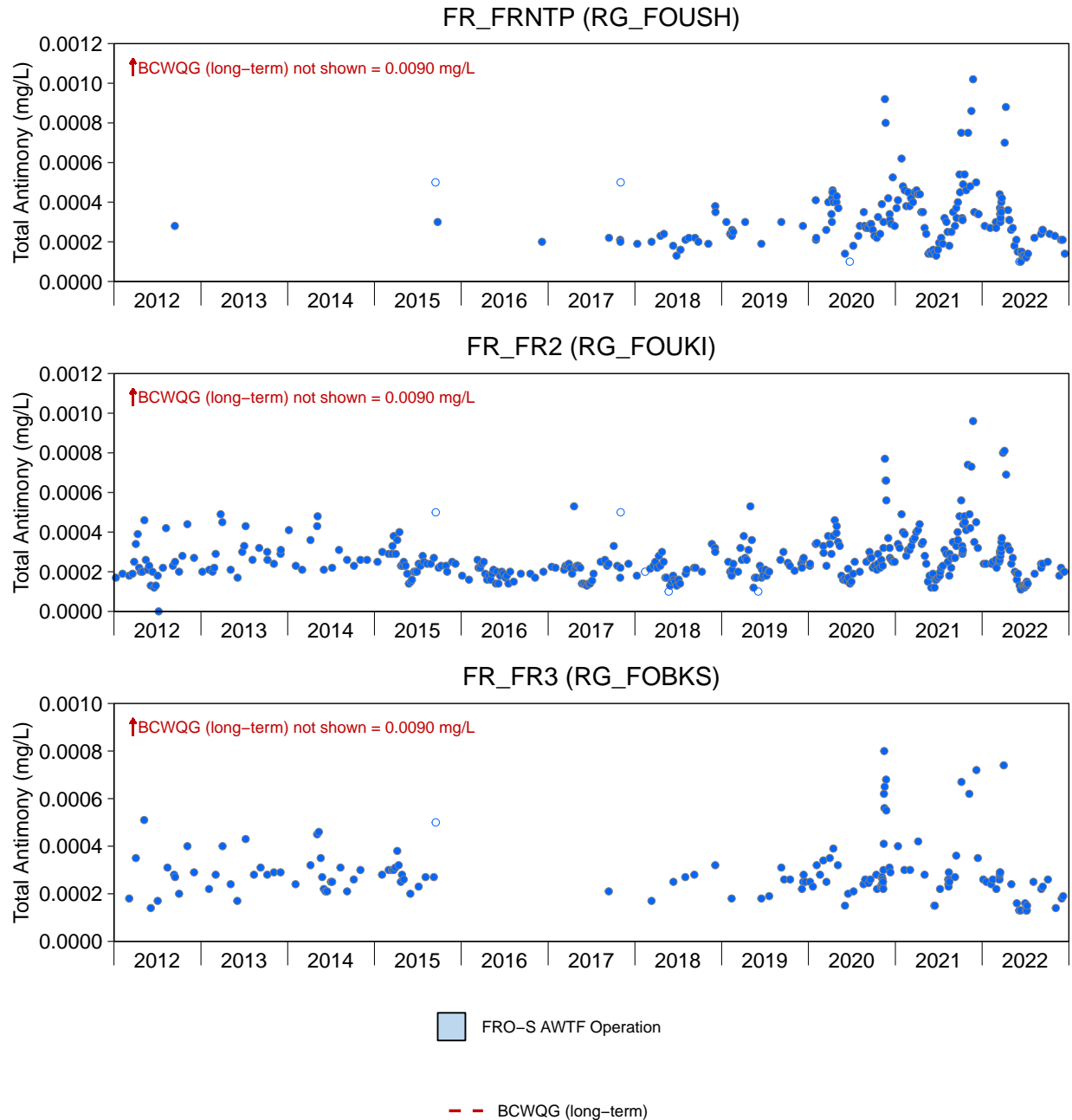


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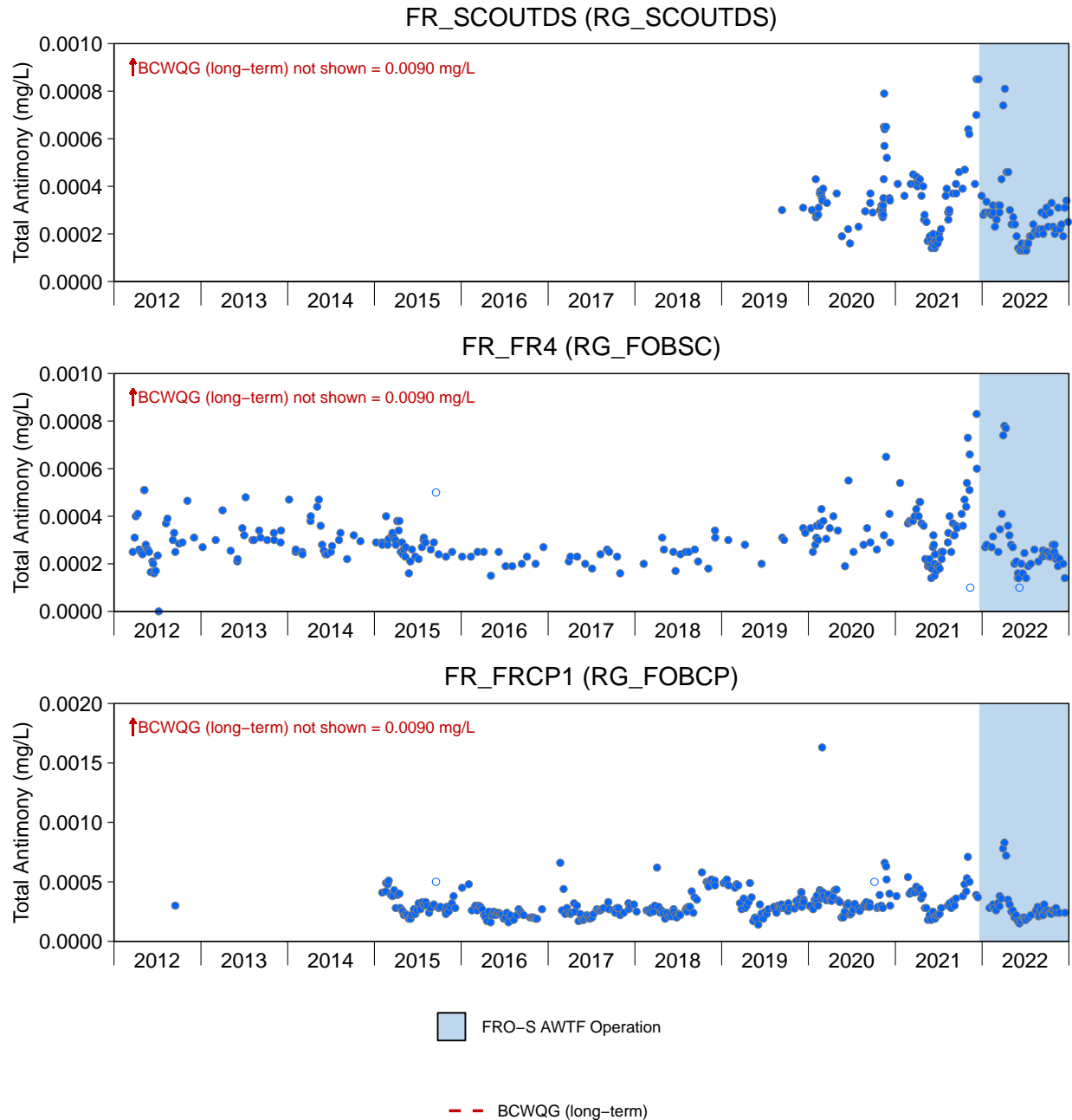


Figure D.1: Time Series Plots for Total Antimony Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

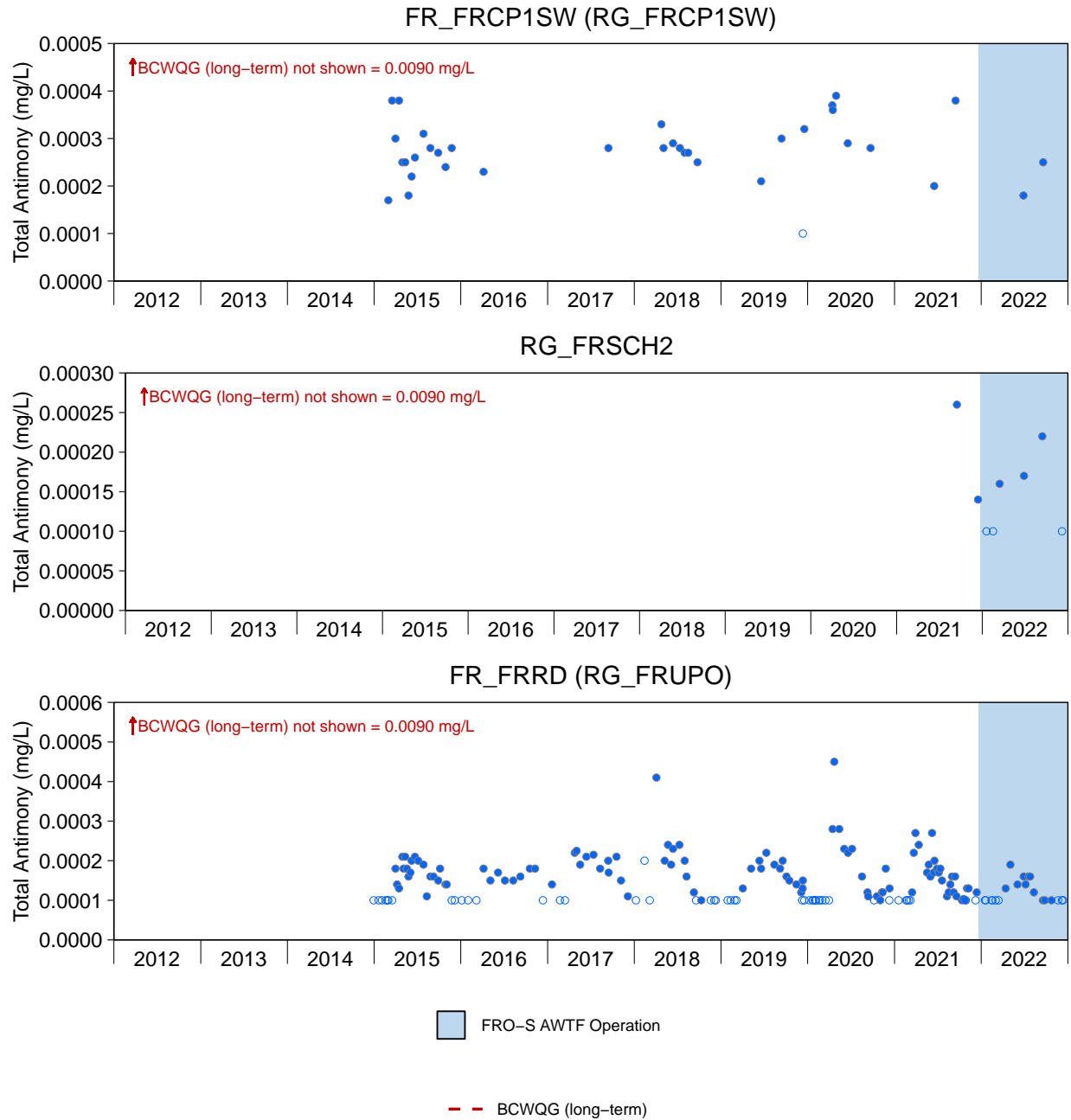


Figure D.1: Time Series Plots for Total Antimony Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

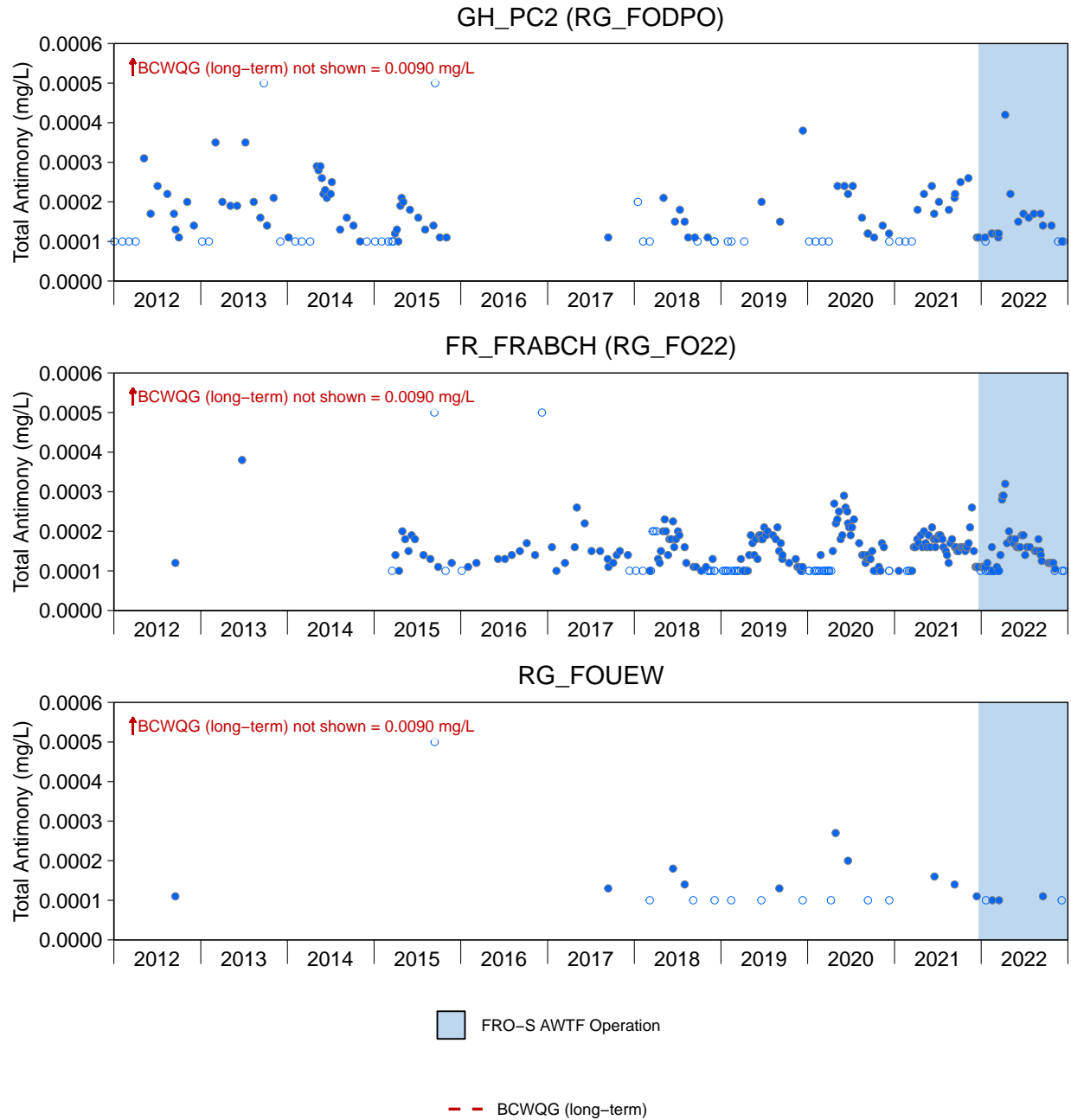
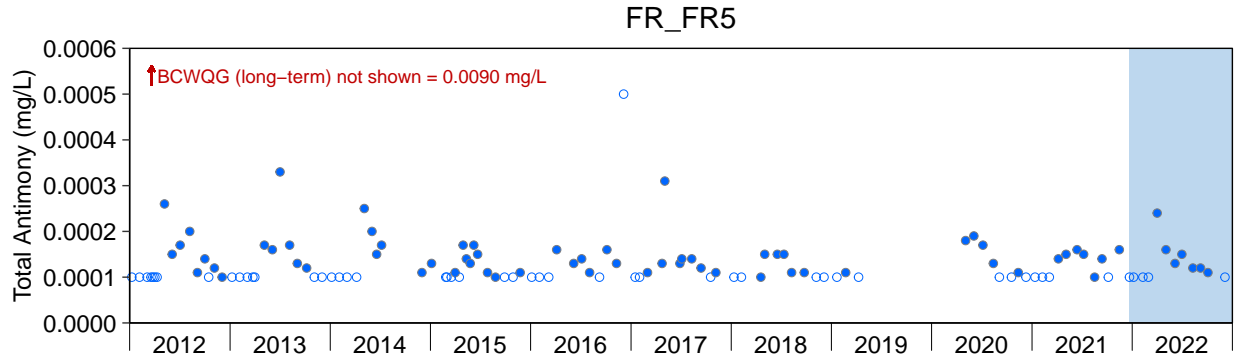


Figure D.1: Time Series Plots for Total Antimony Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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



□ FRO-S AWTF Operation

- - BCWQG (long-term)

Figure D.1: Time Series Plots for Total Antimony Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

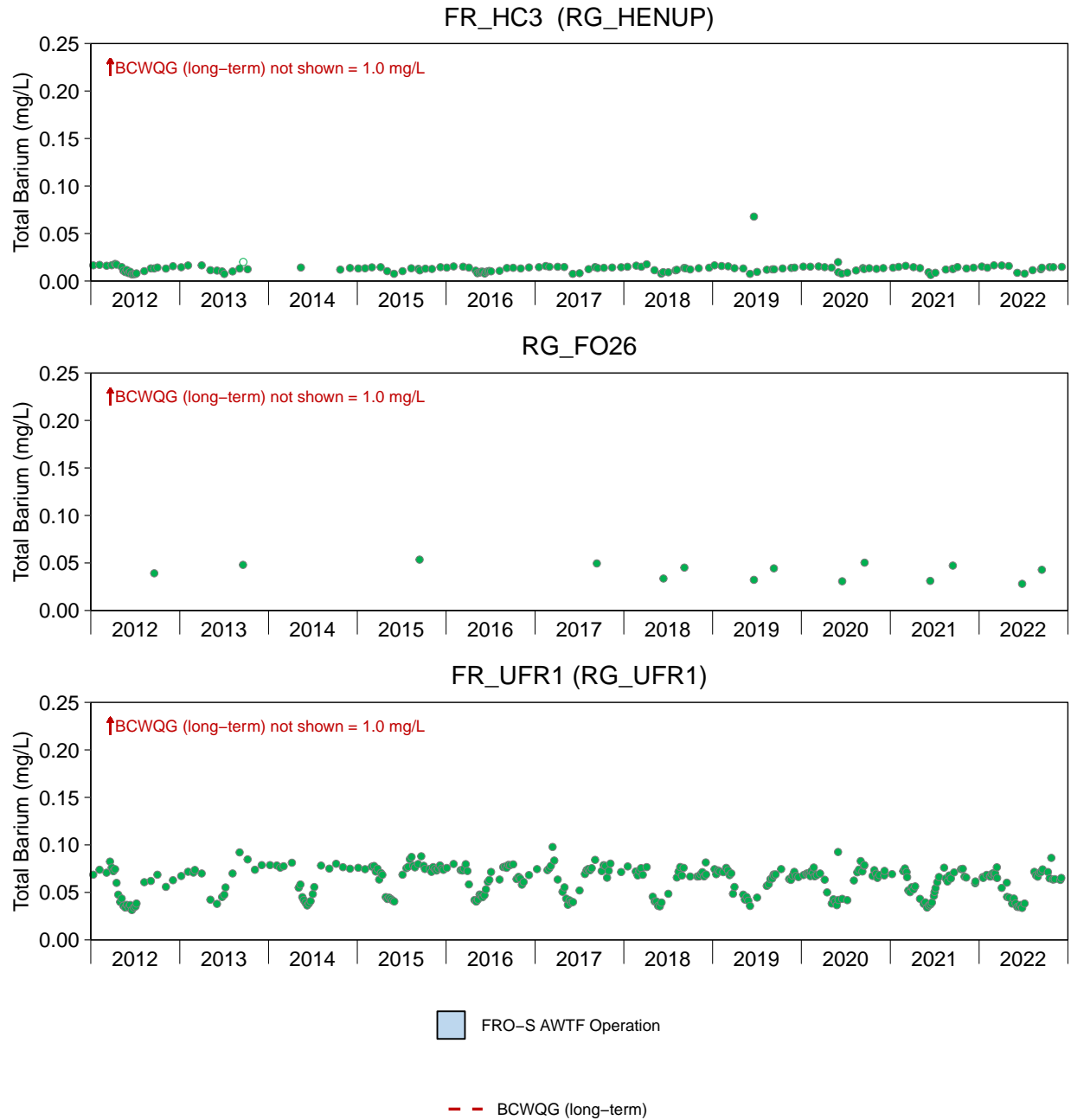


Figure D.2: Time Series Plots for Total Barium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

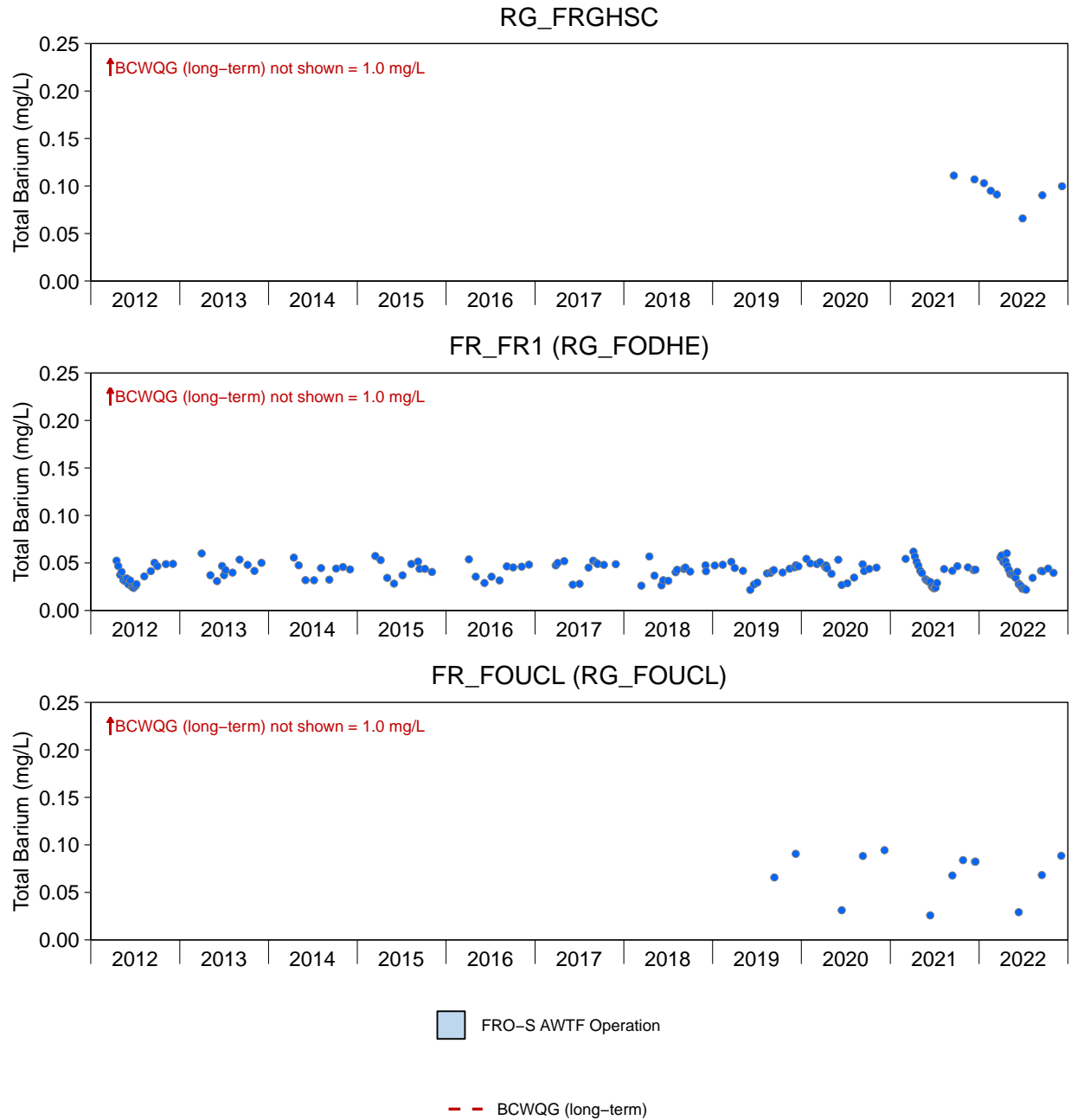


Figure D.2: Time Series Plots for Total Barium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

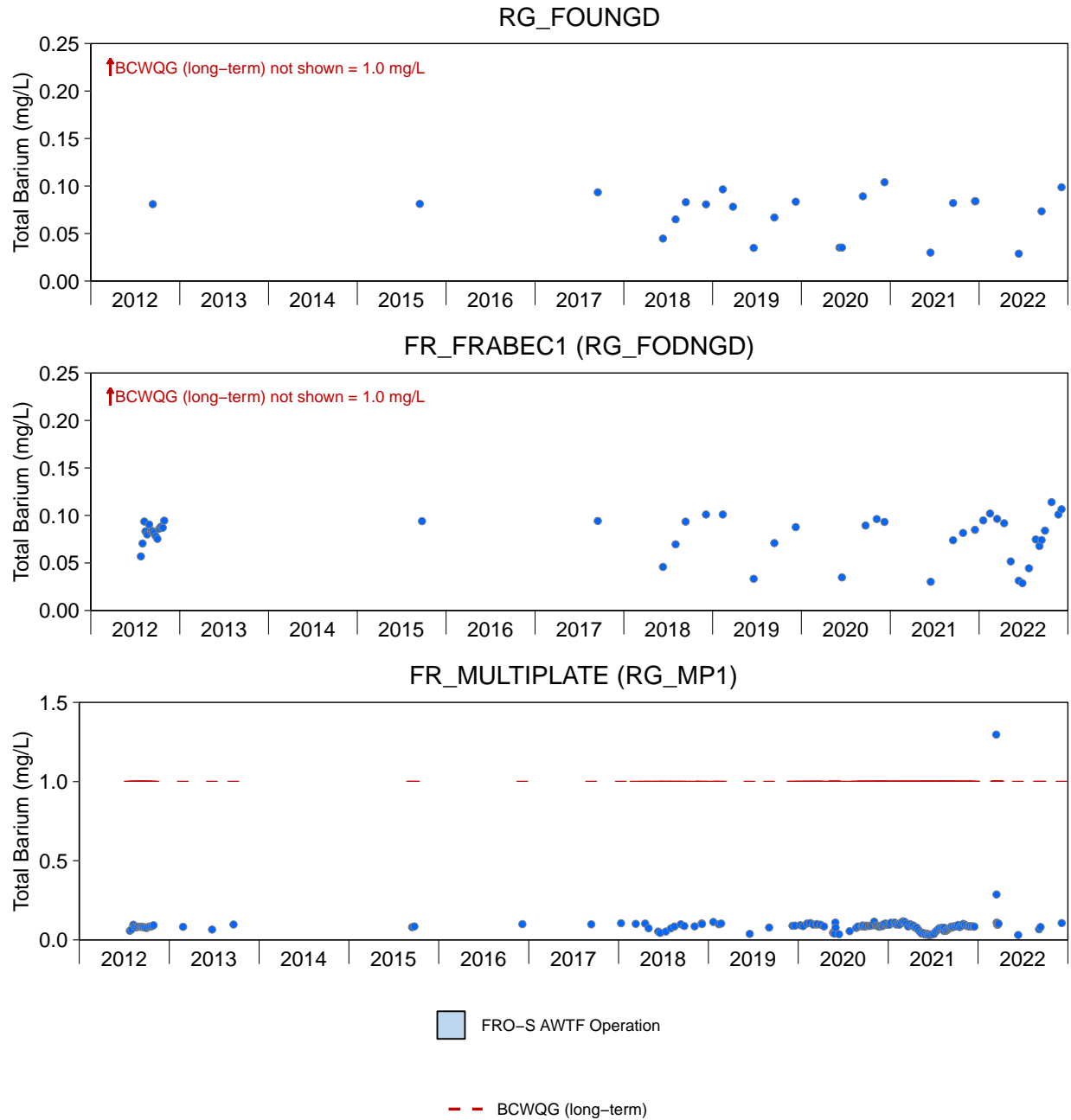


Figure D.2: Time Series Plots for Total Barium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

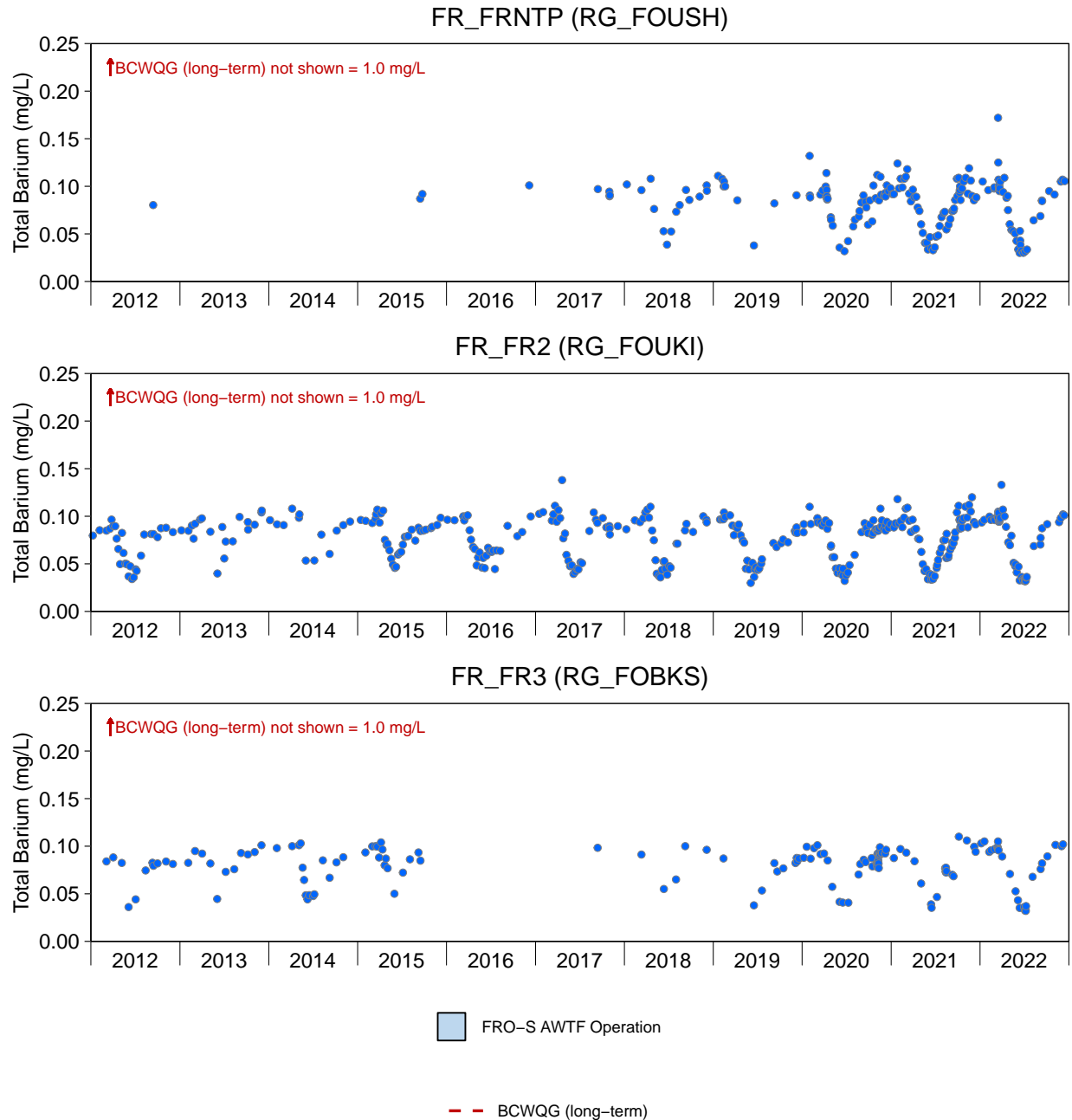


Figure D.2: Time Series Plots for Total Barium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

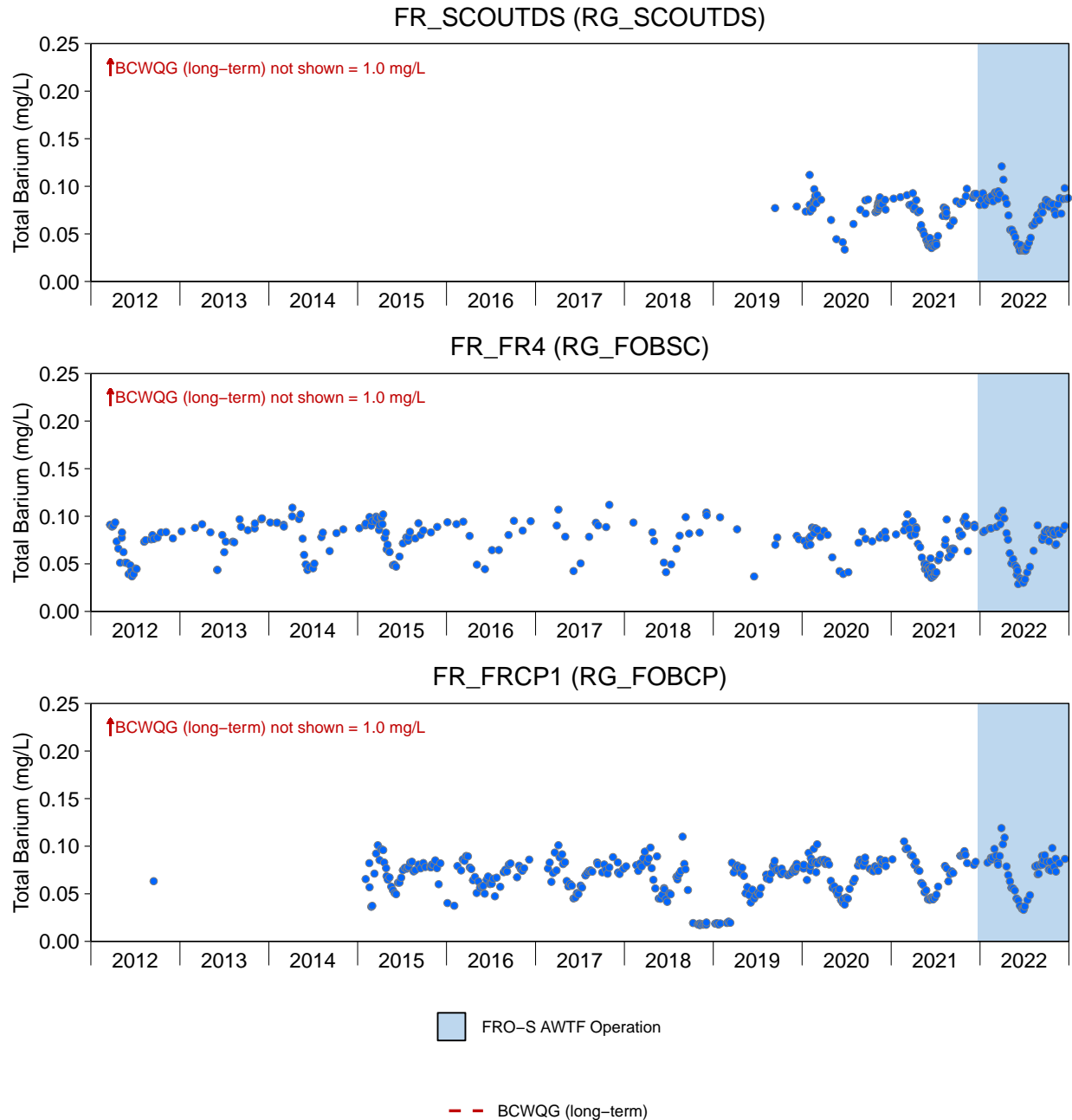


Figure D.2: Time Series Plots for Total Barium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

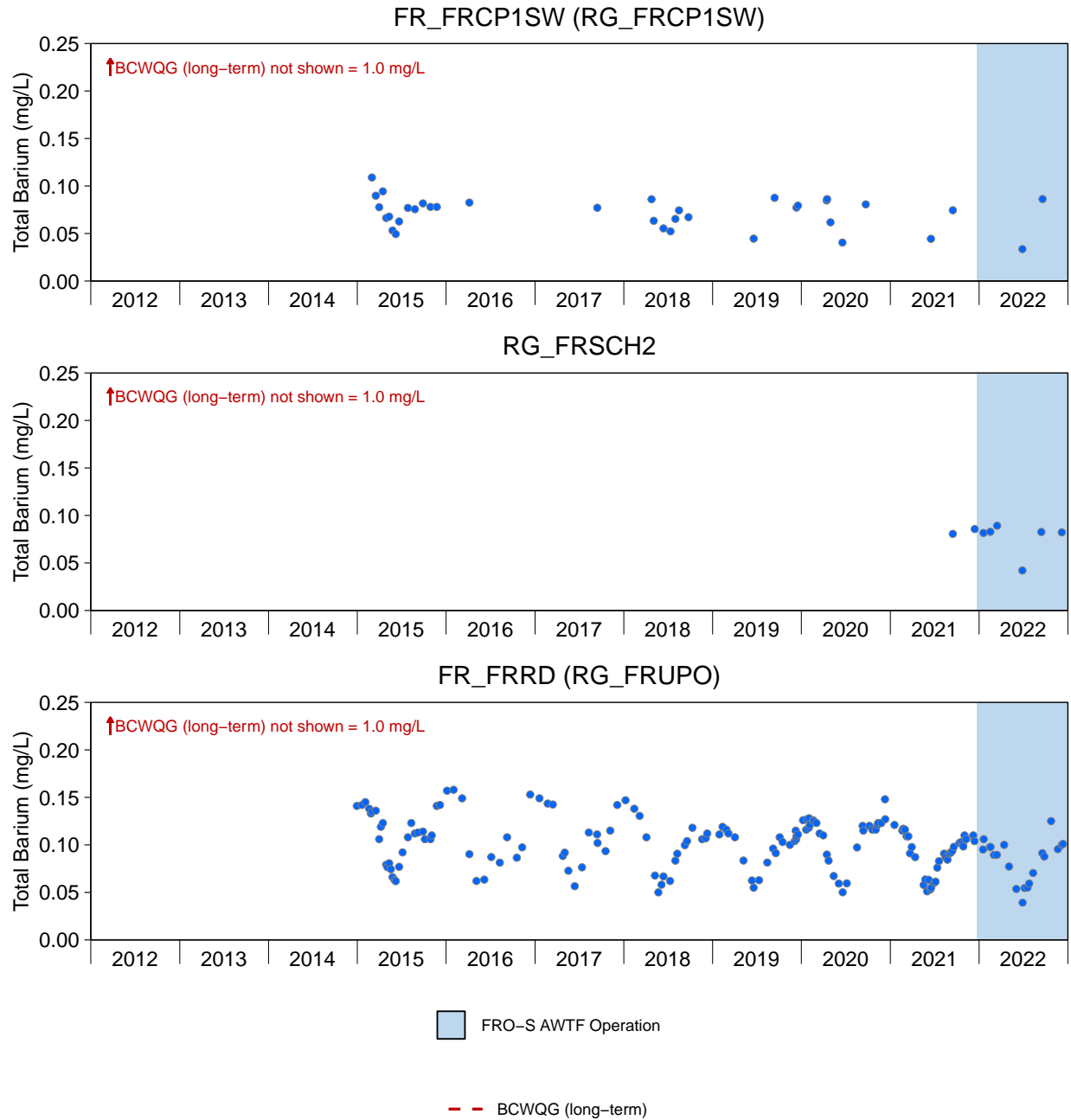


Figure D.2: Time Series Plots for Total Barium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

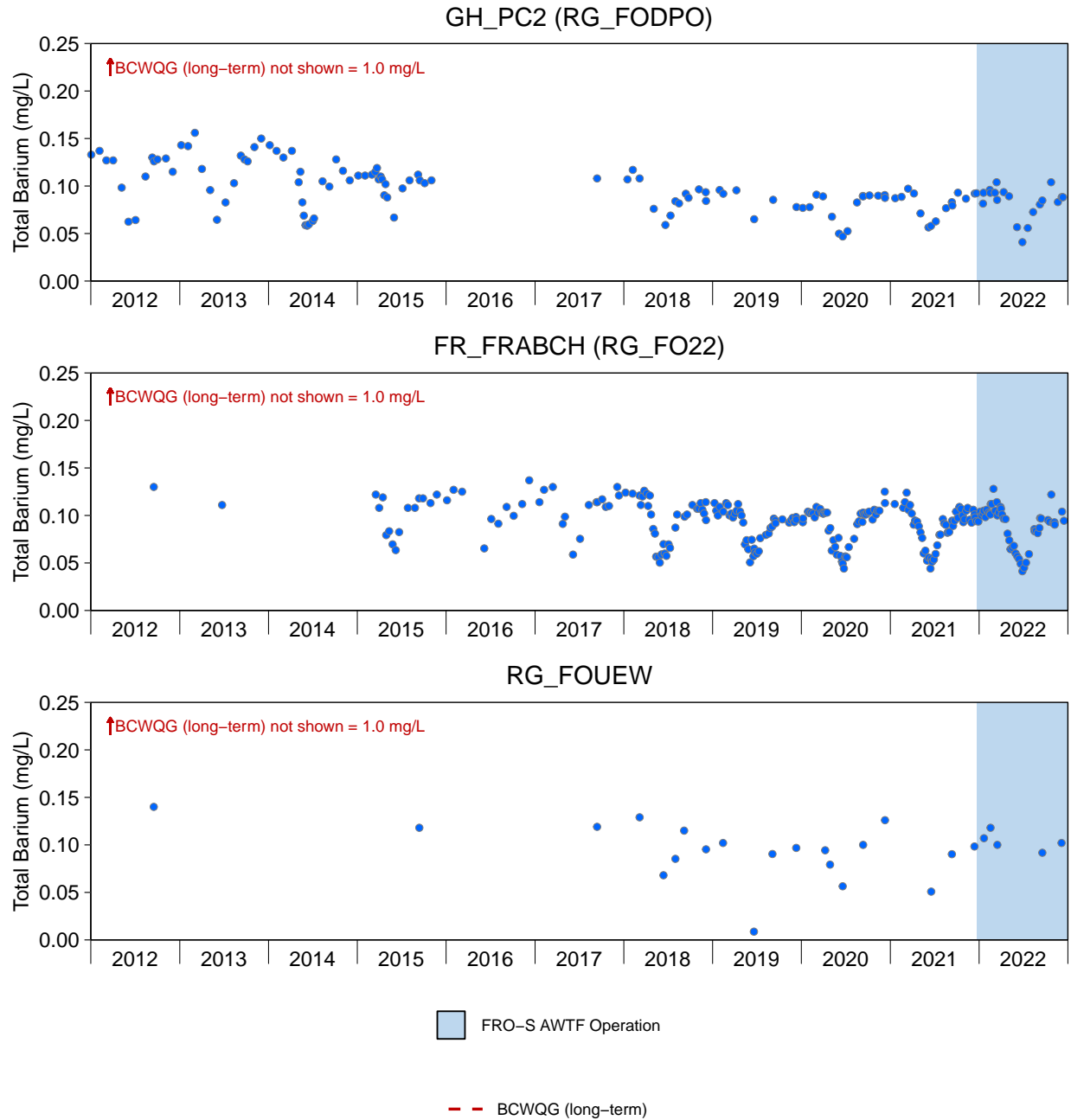
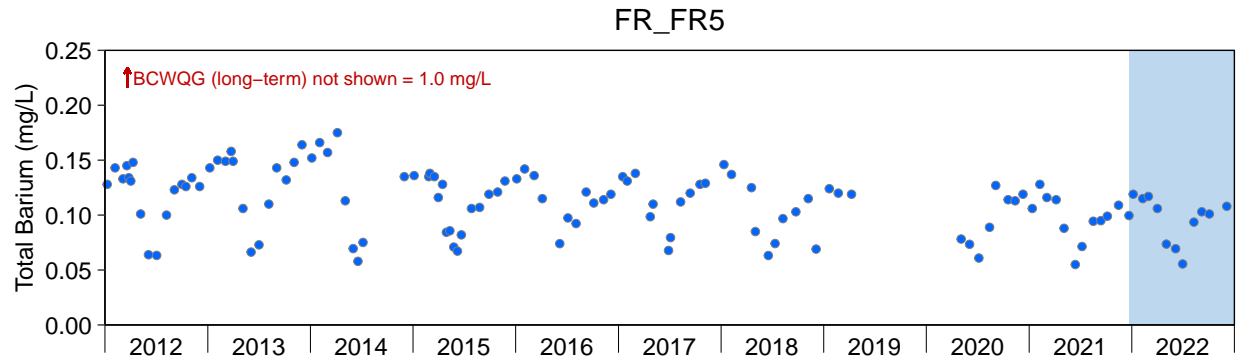


Figure D.2: Time Series Plots for Total Barium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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



□ FRO-S AWTF Operation

- - BCWQG (long-term)

Figure D.2: Time Series Plots for Total Barium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

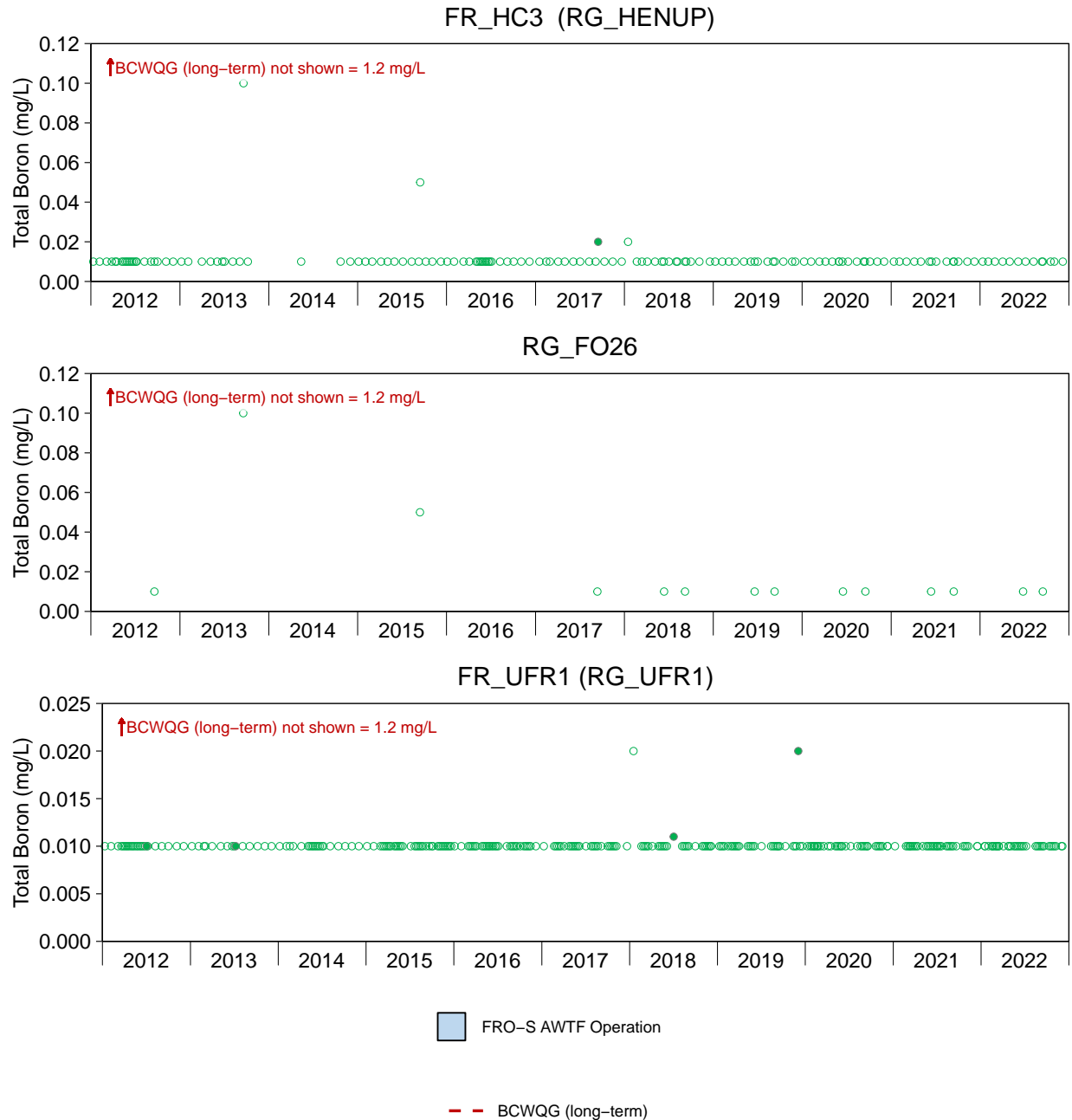


Figure D.3: Time Series Plots for Total Boron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

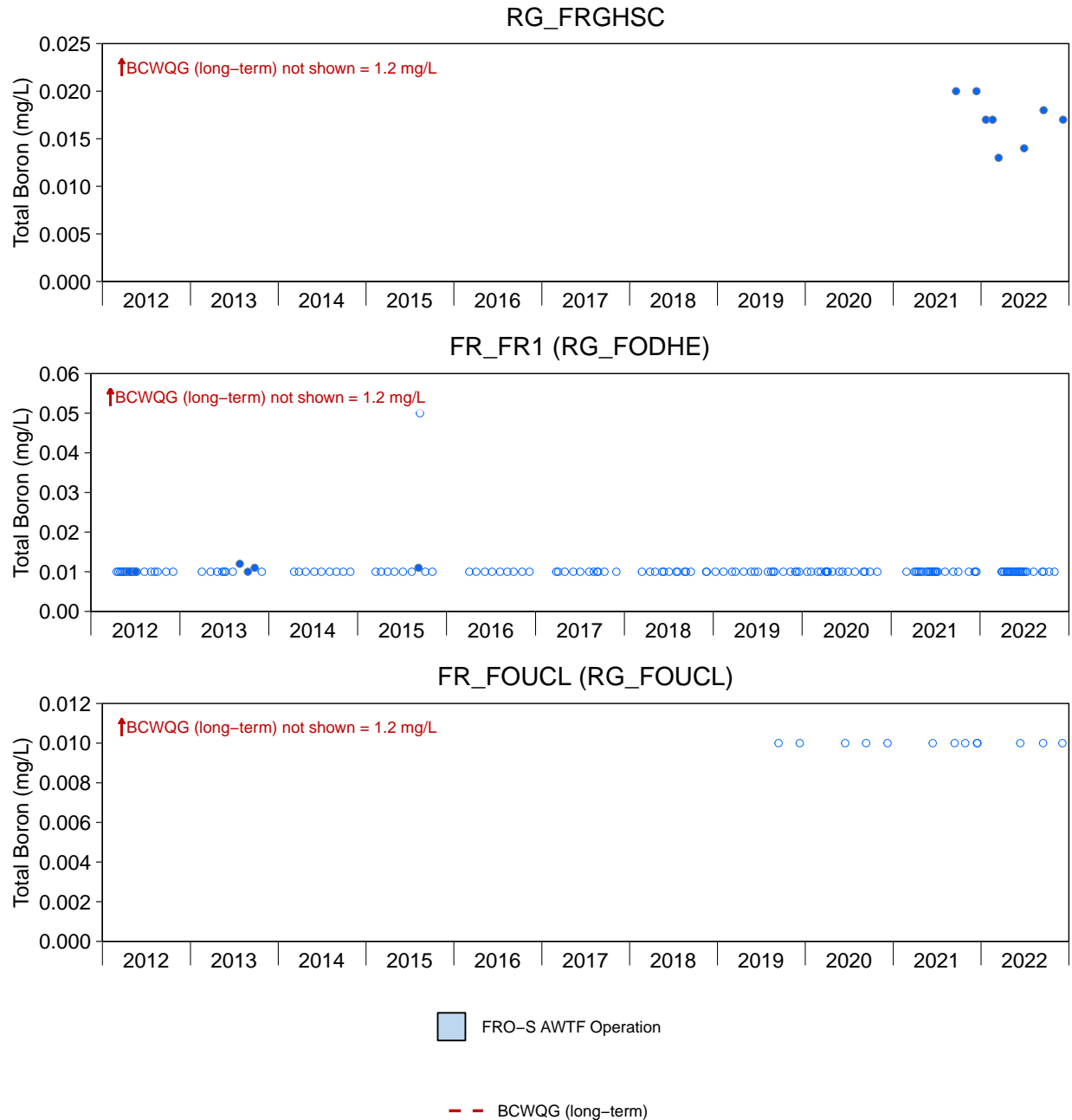


Figure D.3: Time Series Plots for Total Boron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

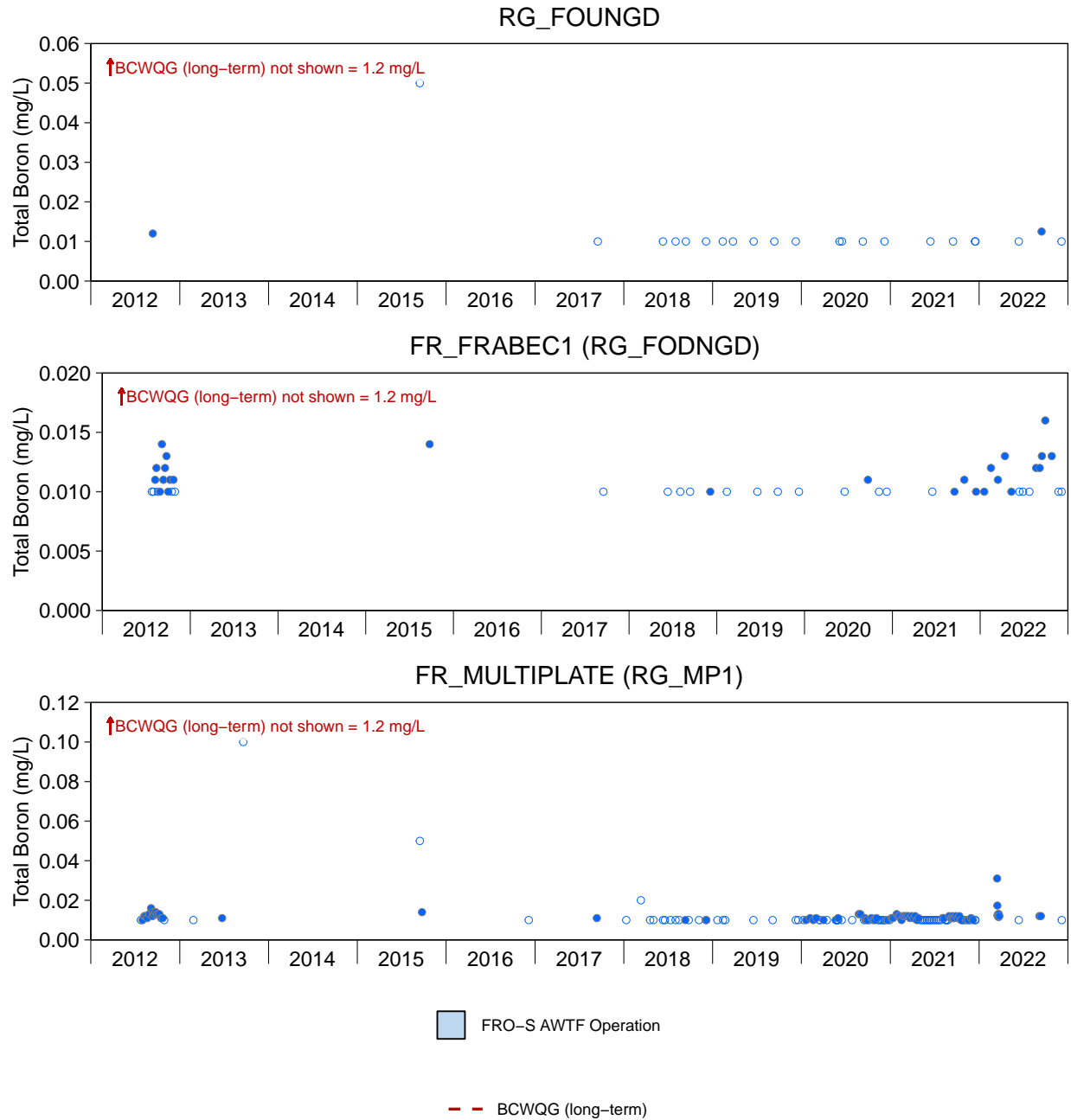


Figure D.3: Time Series Plots for Total Boron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

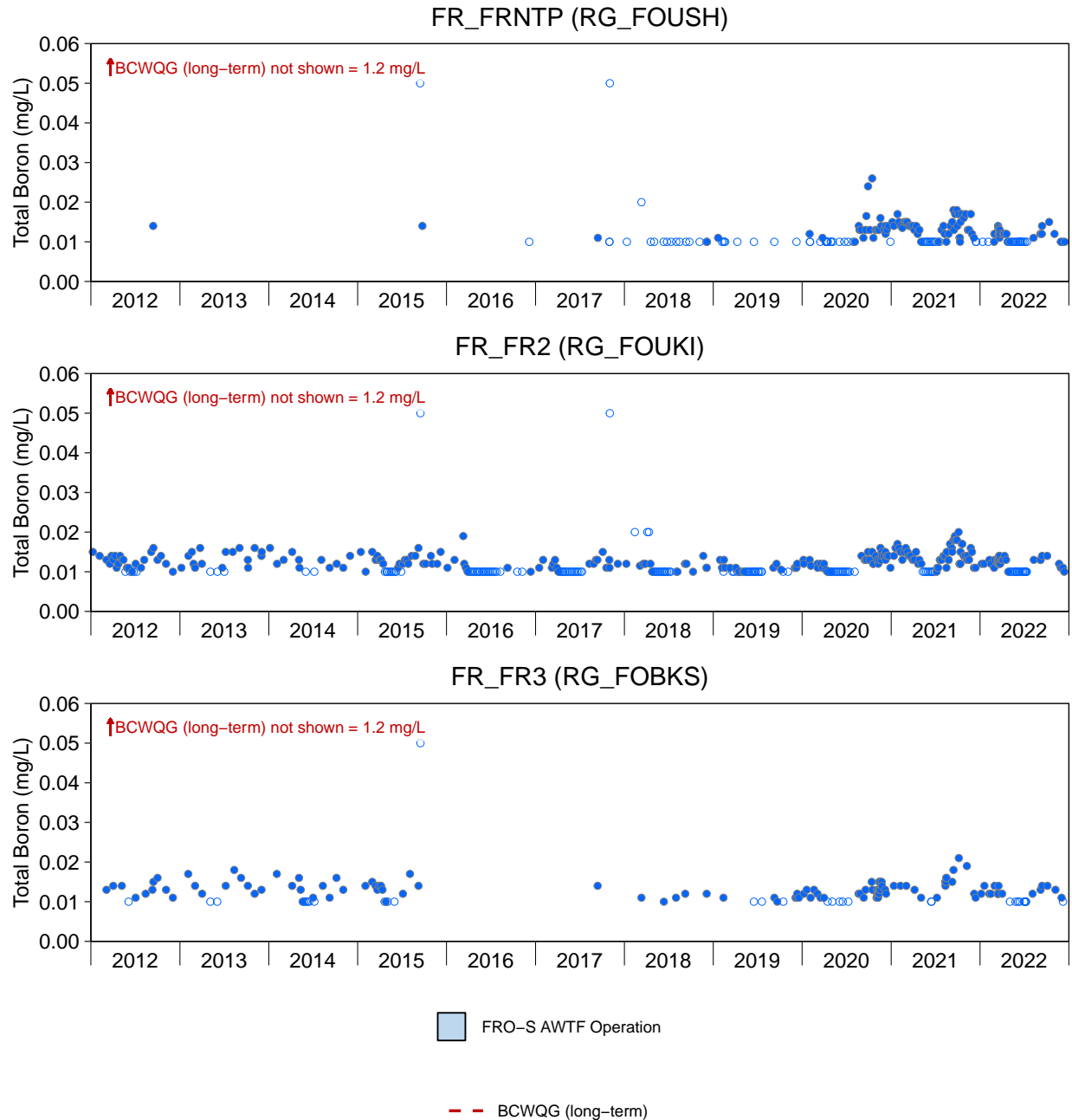


Figure D.3: Time Series Plots for Total Boron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

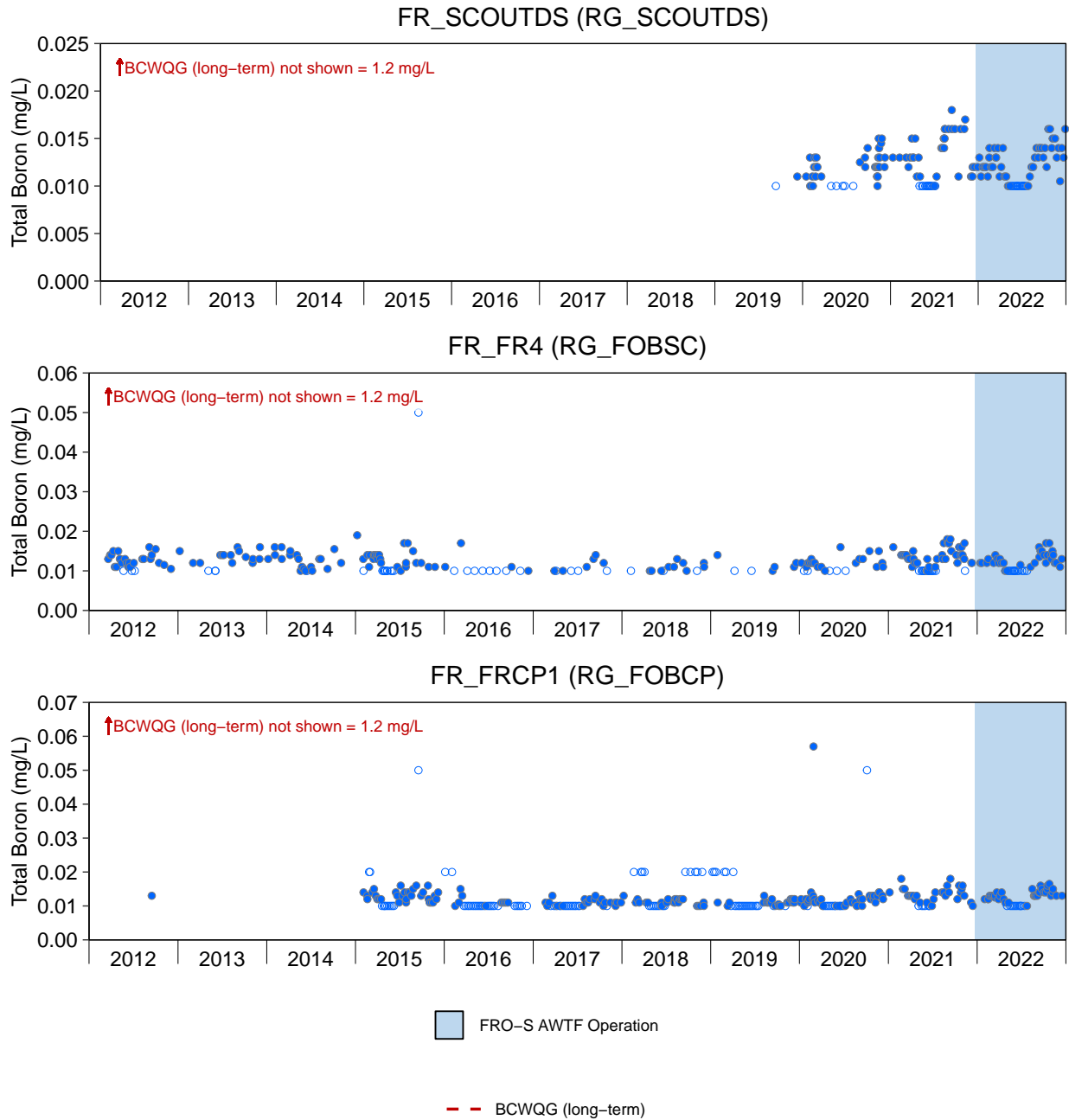


Figure D.3: Time Series Plots for Total Boron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

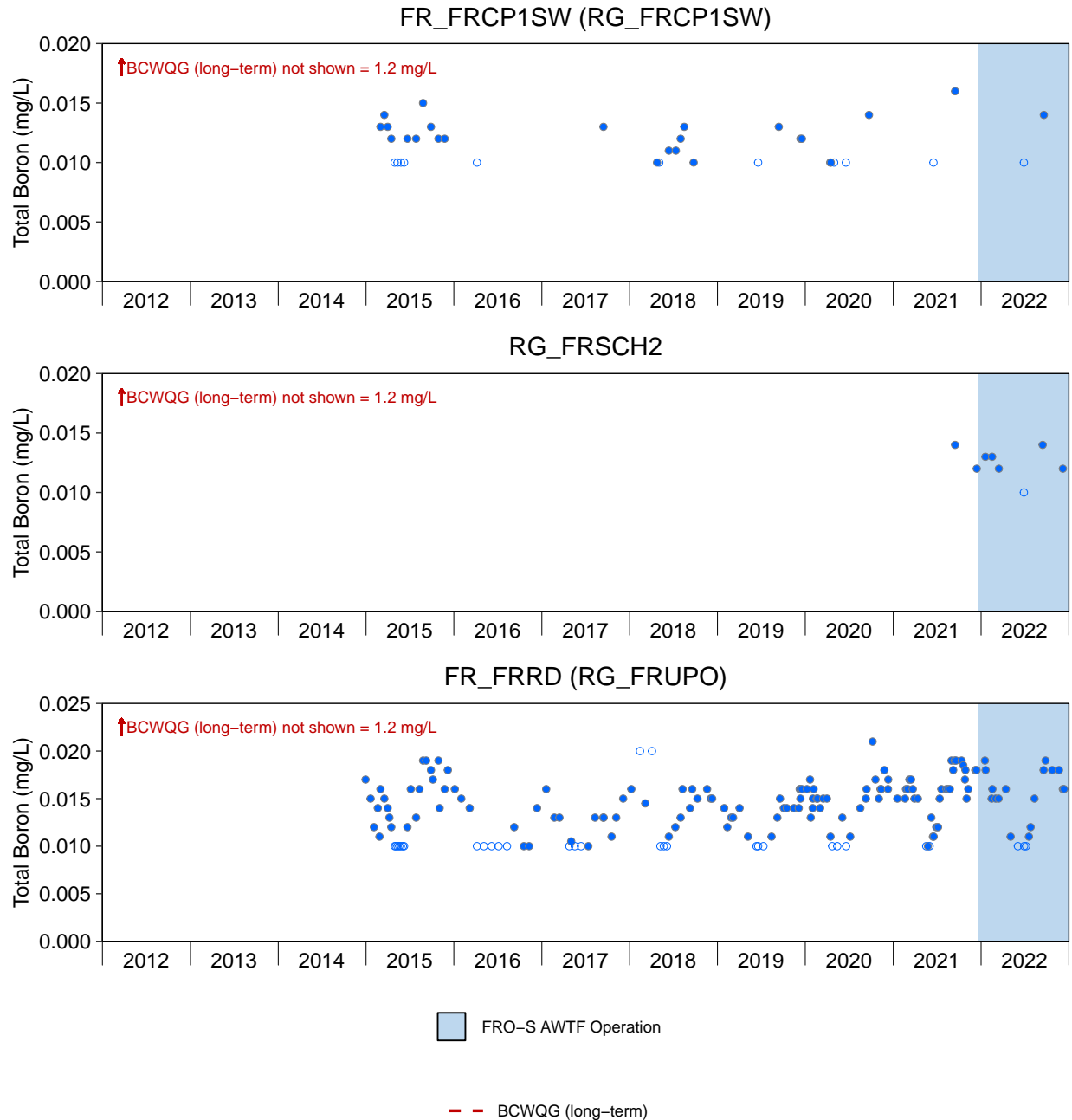


Figure D.3: Time Series Plots for Total Boron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

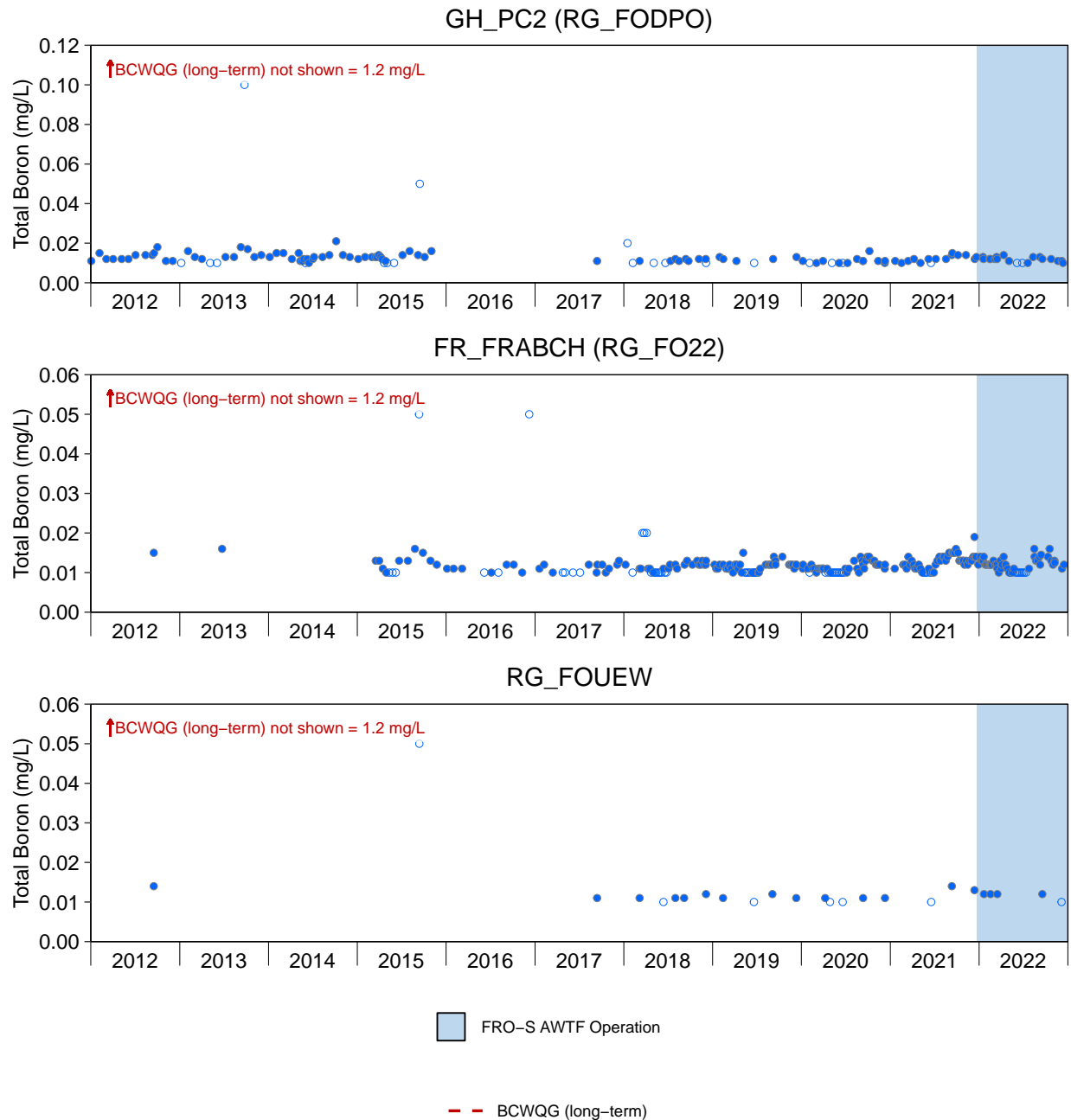


Figure D.3: Time Series Plots for Total Boron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

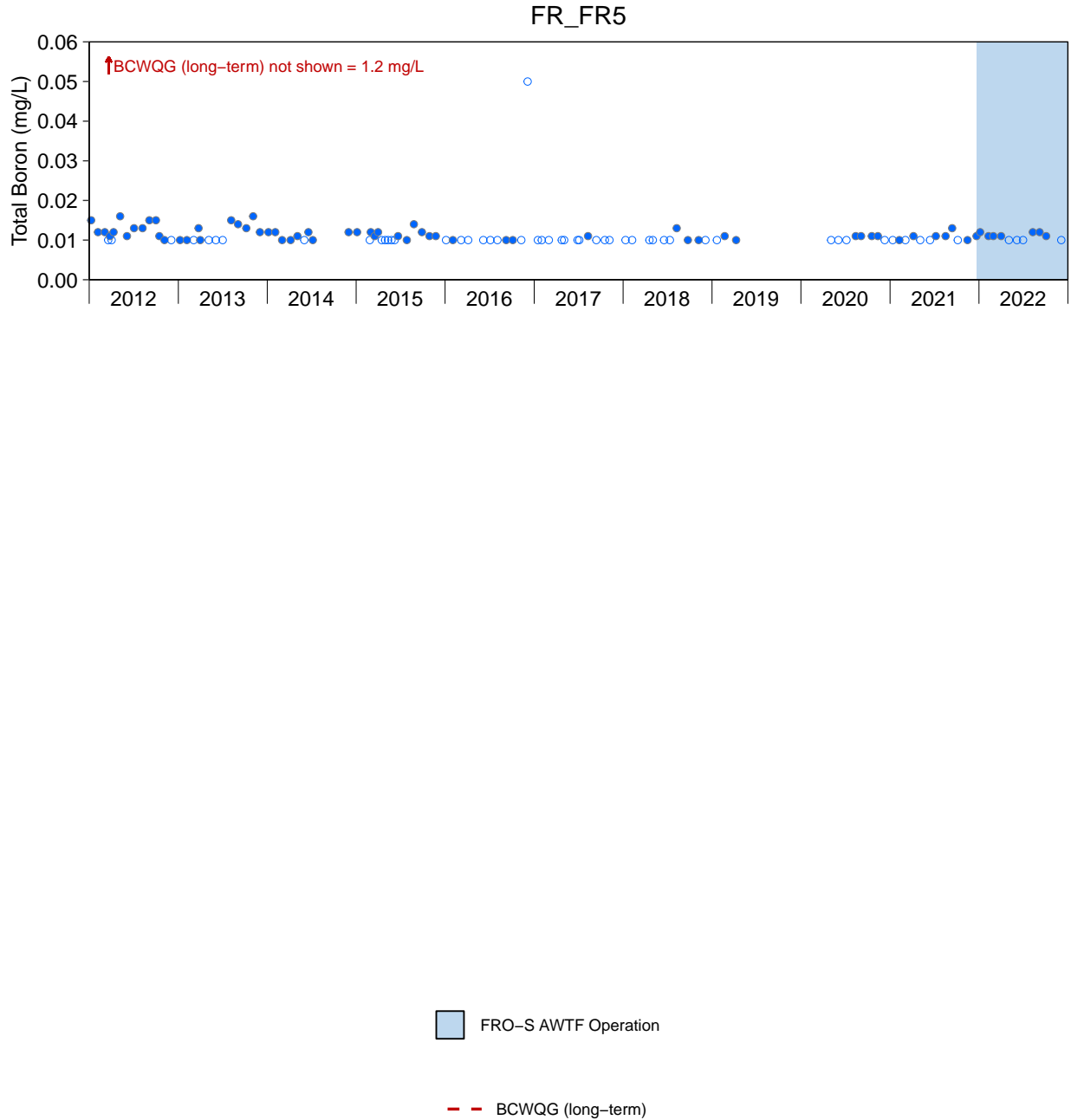


Figure D.3: Time Series Plots for Total Boron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

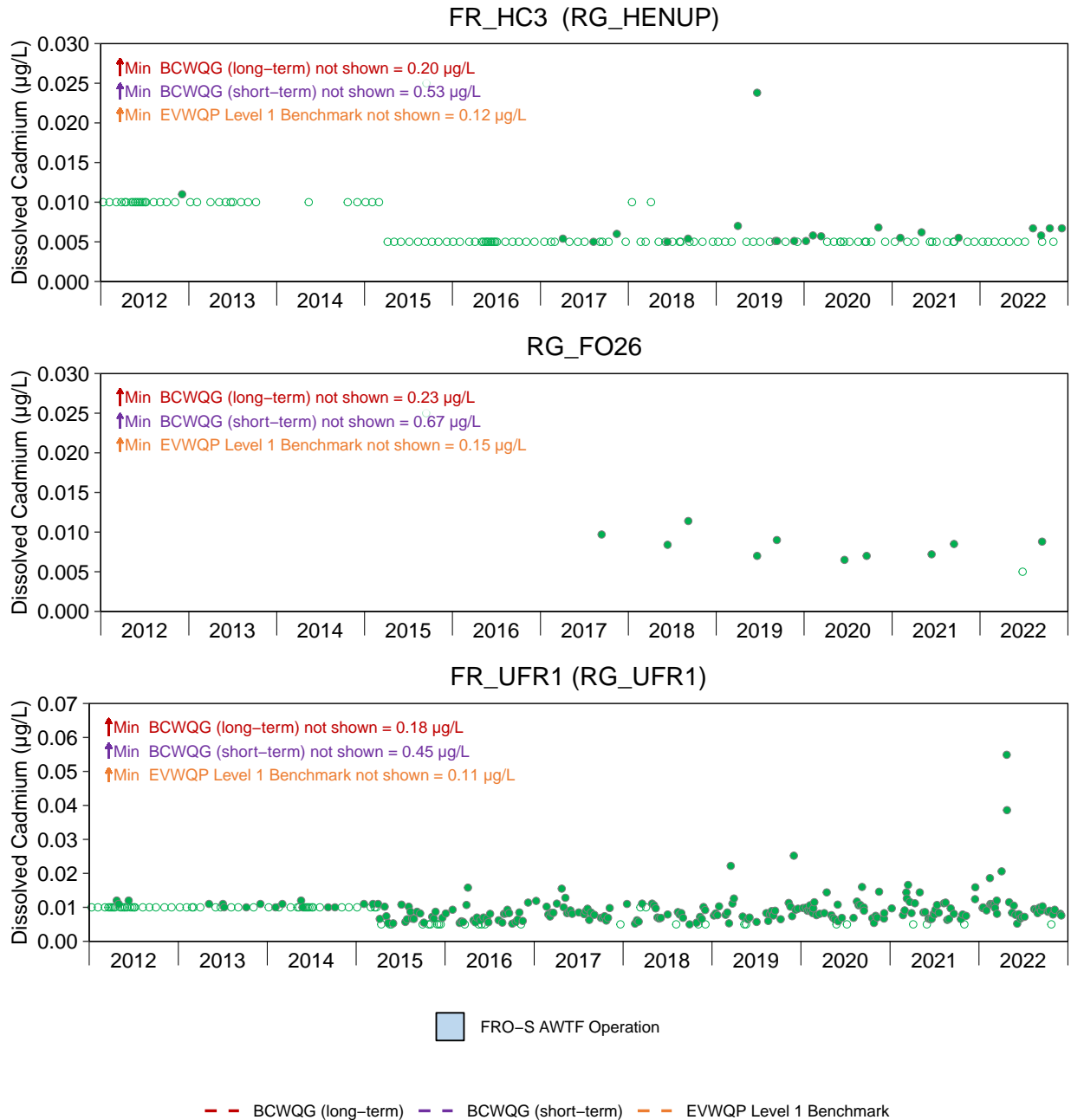


Figure D.4: Time Series Plots for Dissolved Cadmium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

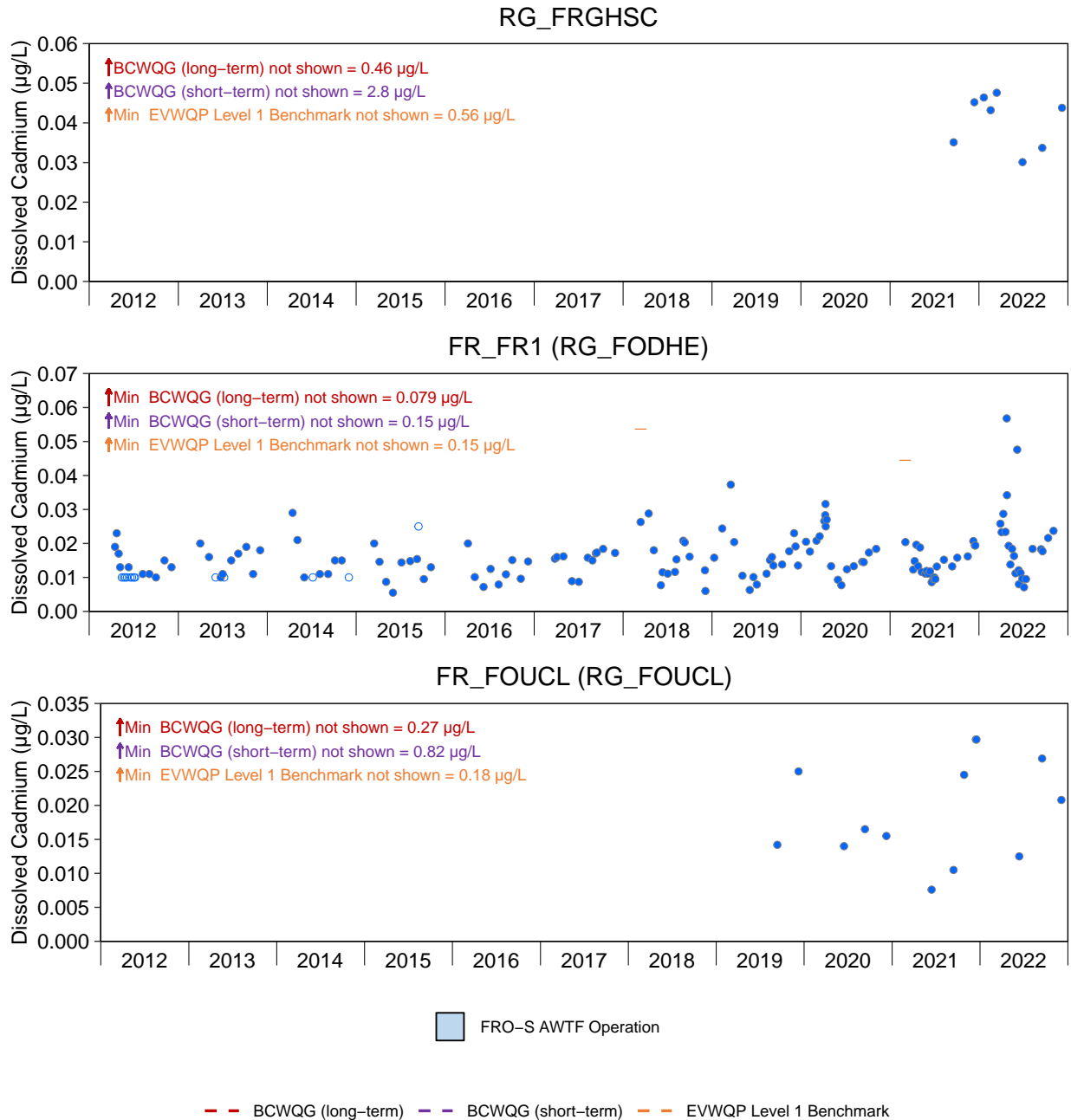


Figure D.4: Time Series Plots for Dissolved Cadmium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

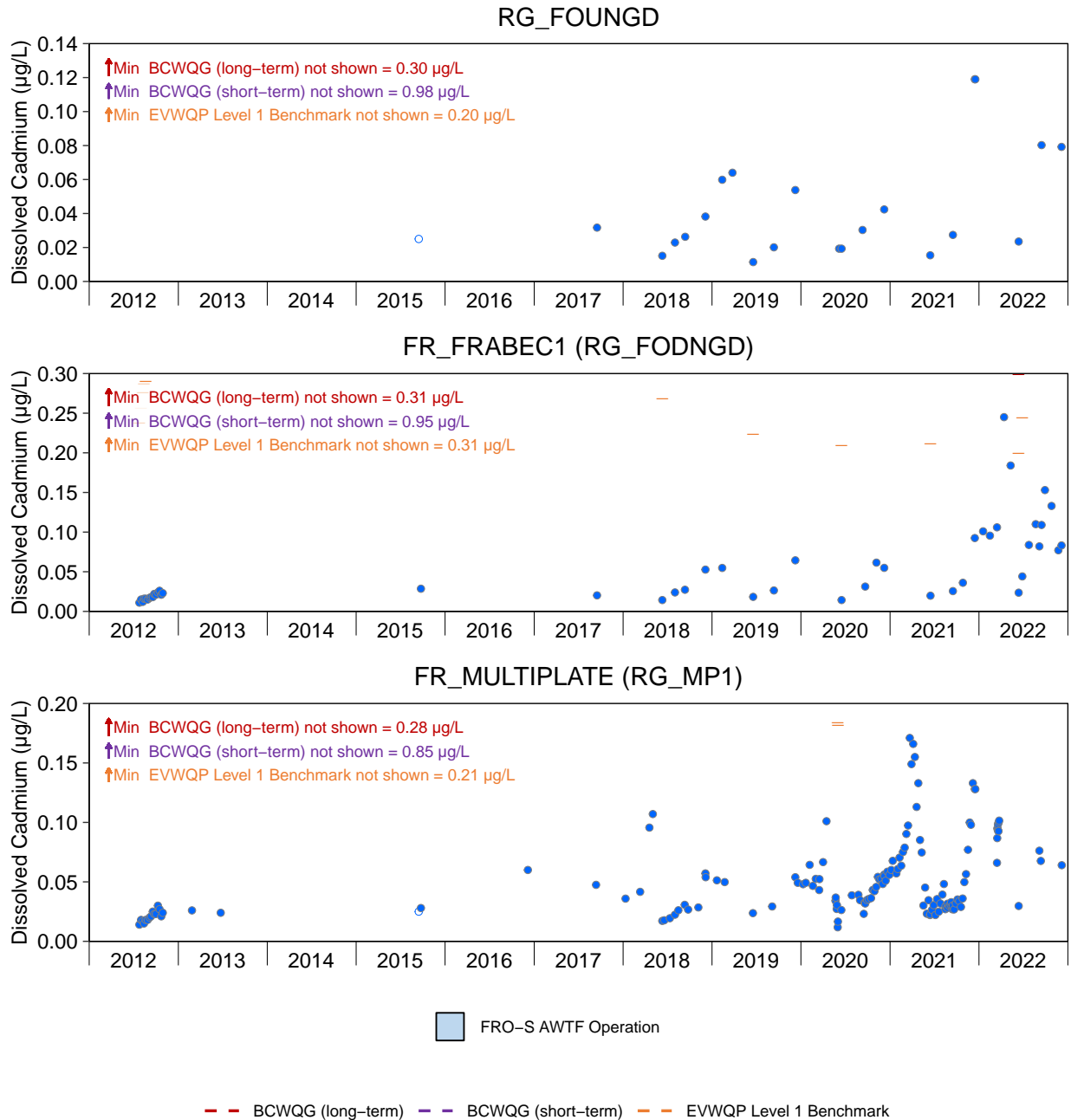


Figure D.4: Time Series Plots for Dissolved Cadmium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

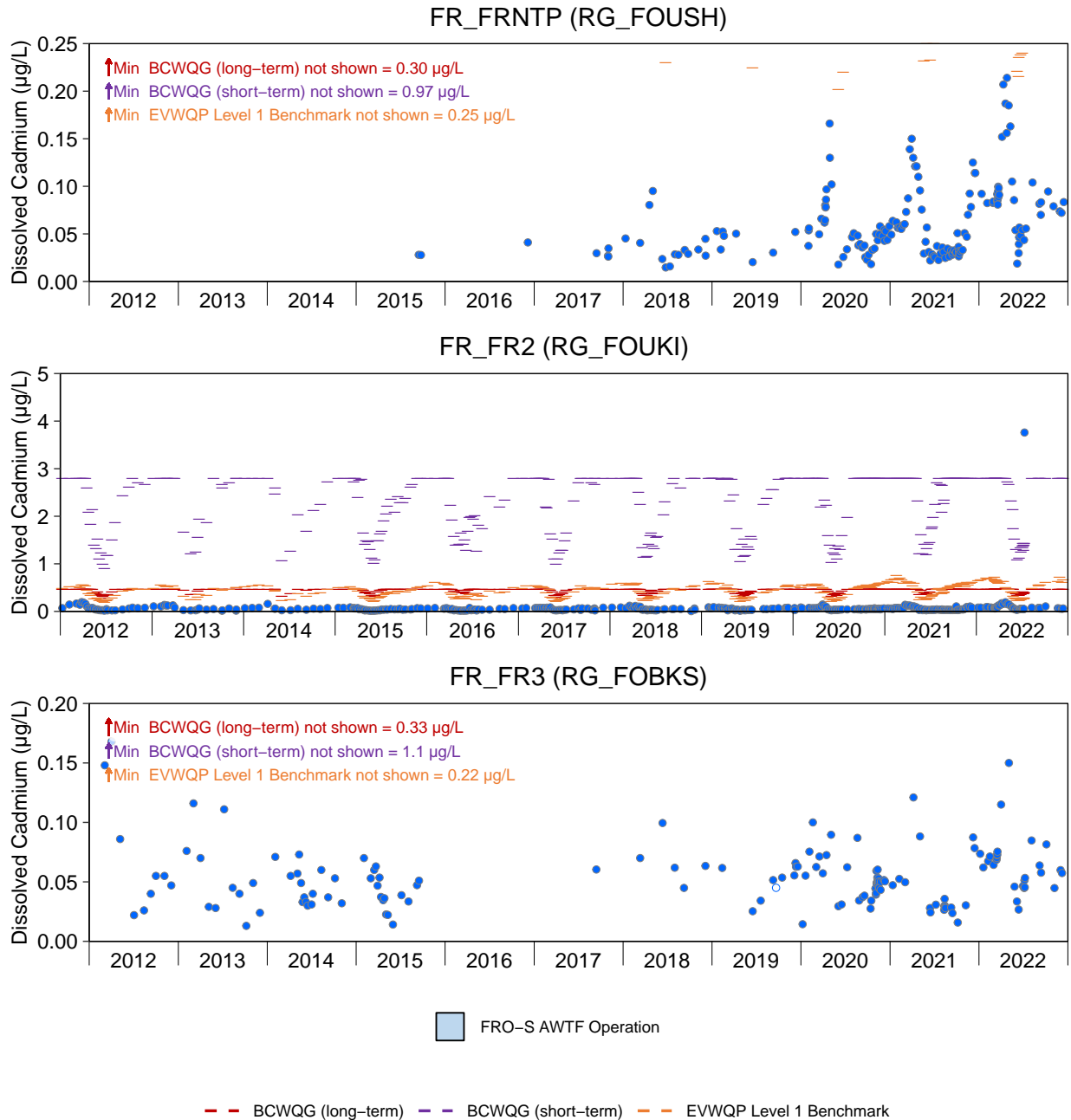


Figure D.4: Time Series Plots for Dissolved Cadmium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

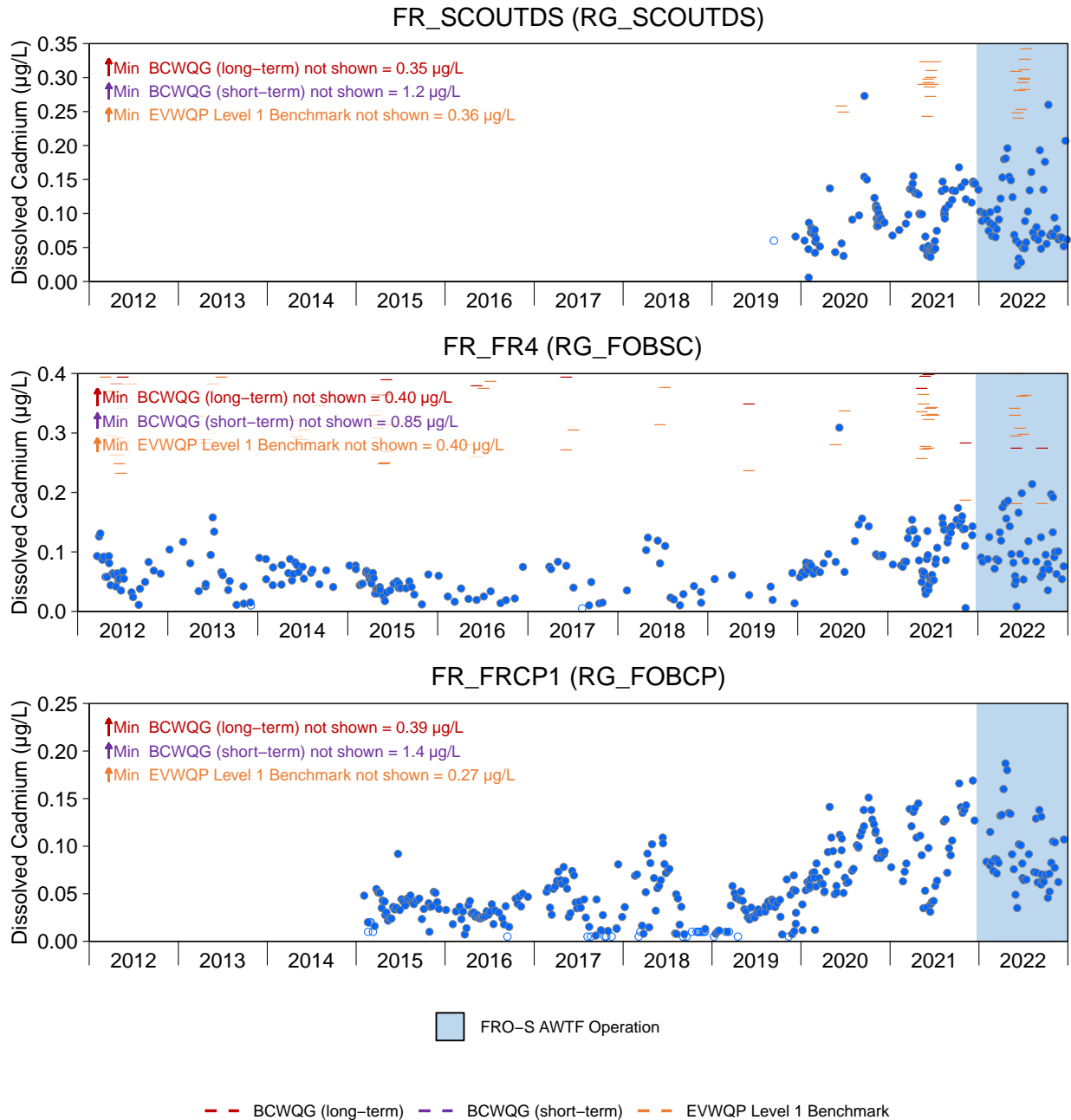


Figure D.4: Time Series Plots for Dissolved Cadmium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

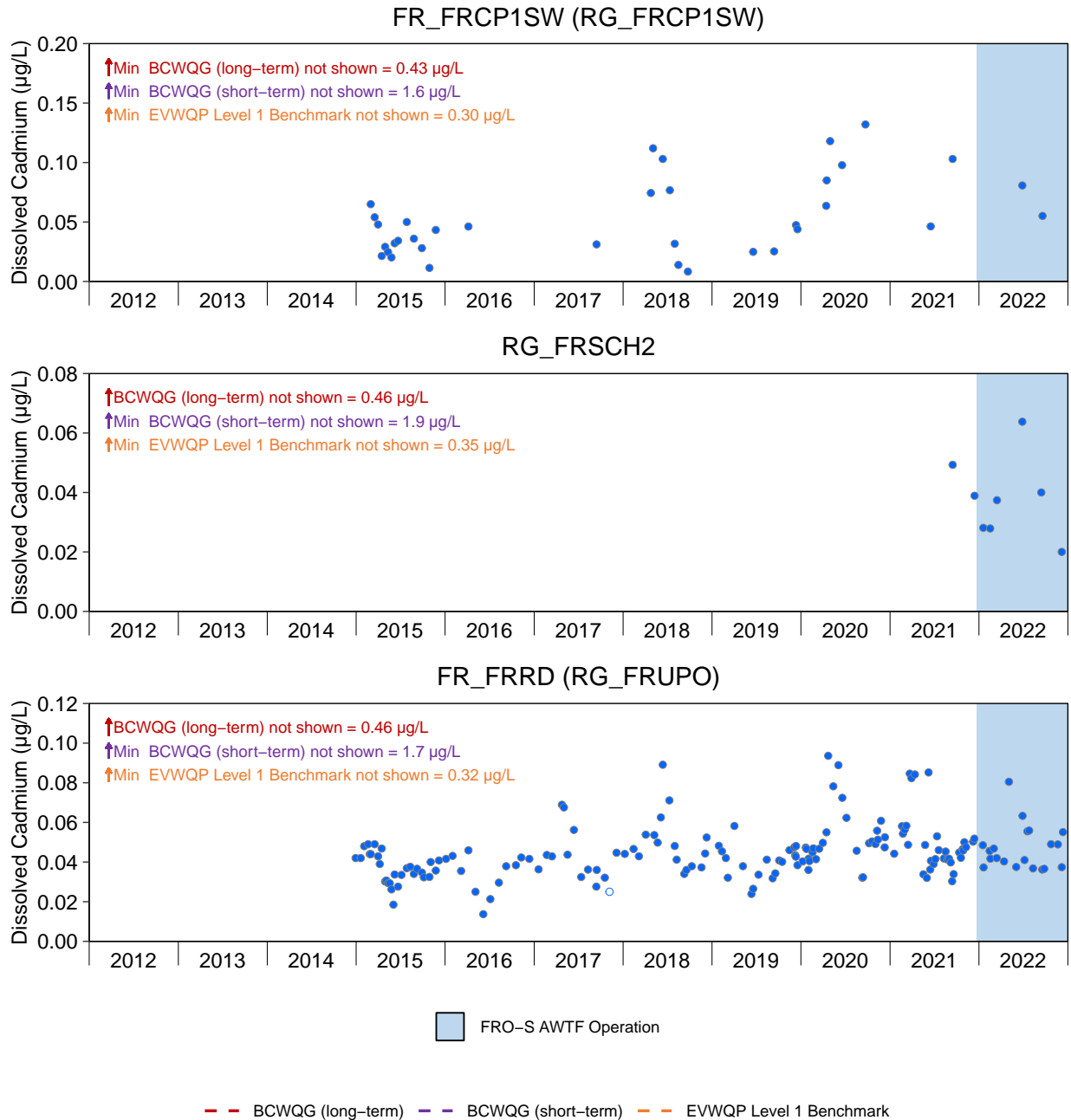


Figure D.4: Time Series Plots for Dissolved Cadmium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

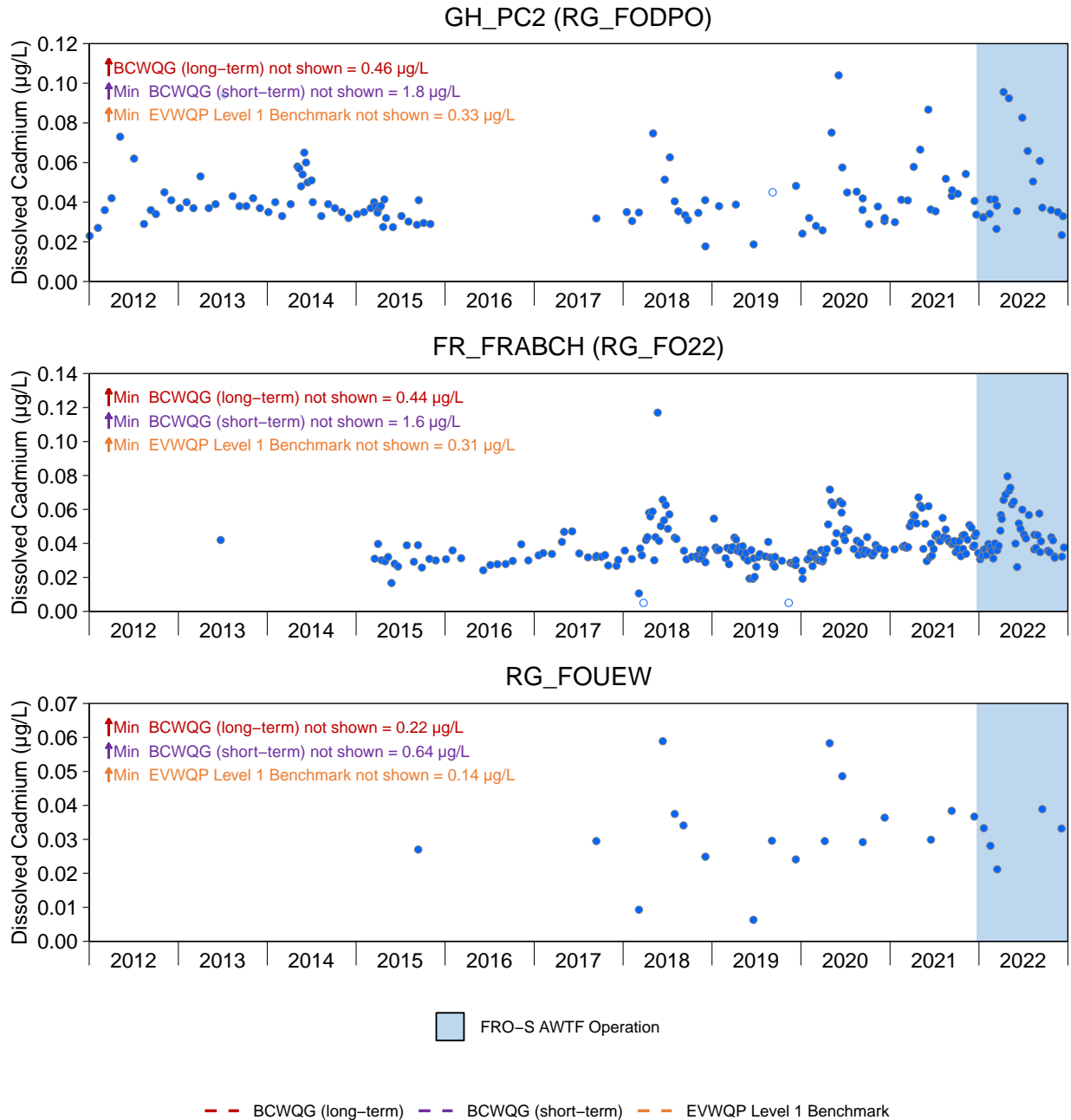
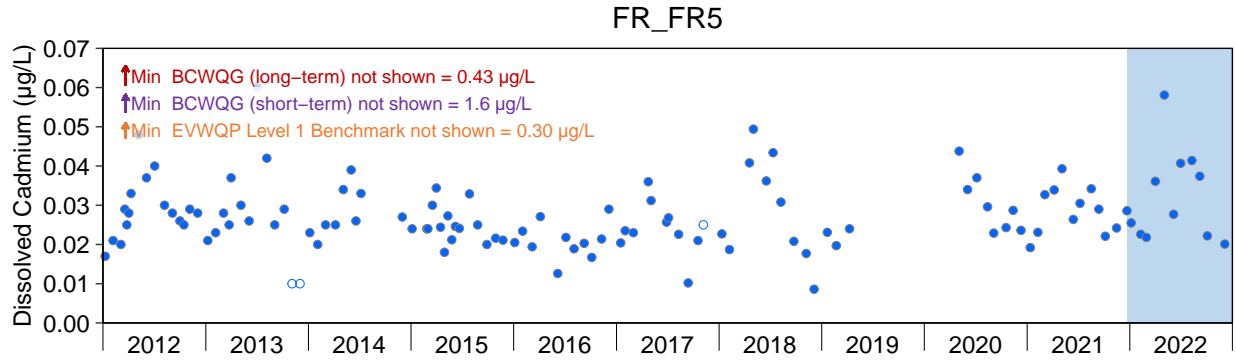


Figure D.4: Time Series Plots for Dissolved Cadmium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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



□ FRO-S AWTF Operation

— BCWQG (long-term) — BCWQG (short-term) — EVWQP Level 1 Benchmark

Figure D.4: Time Series Plots for Dissolved Cadmium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

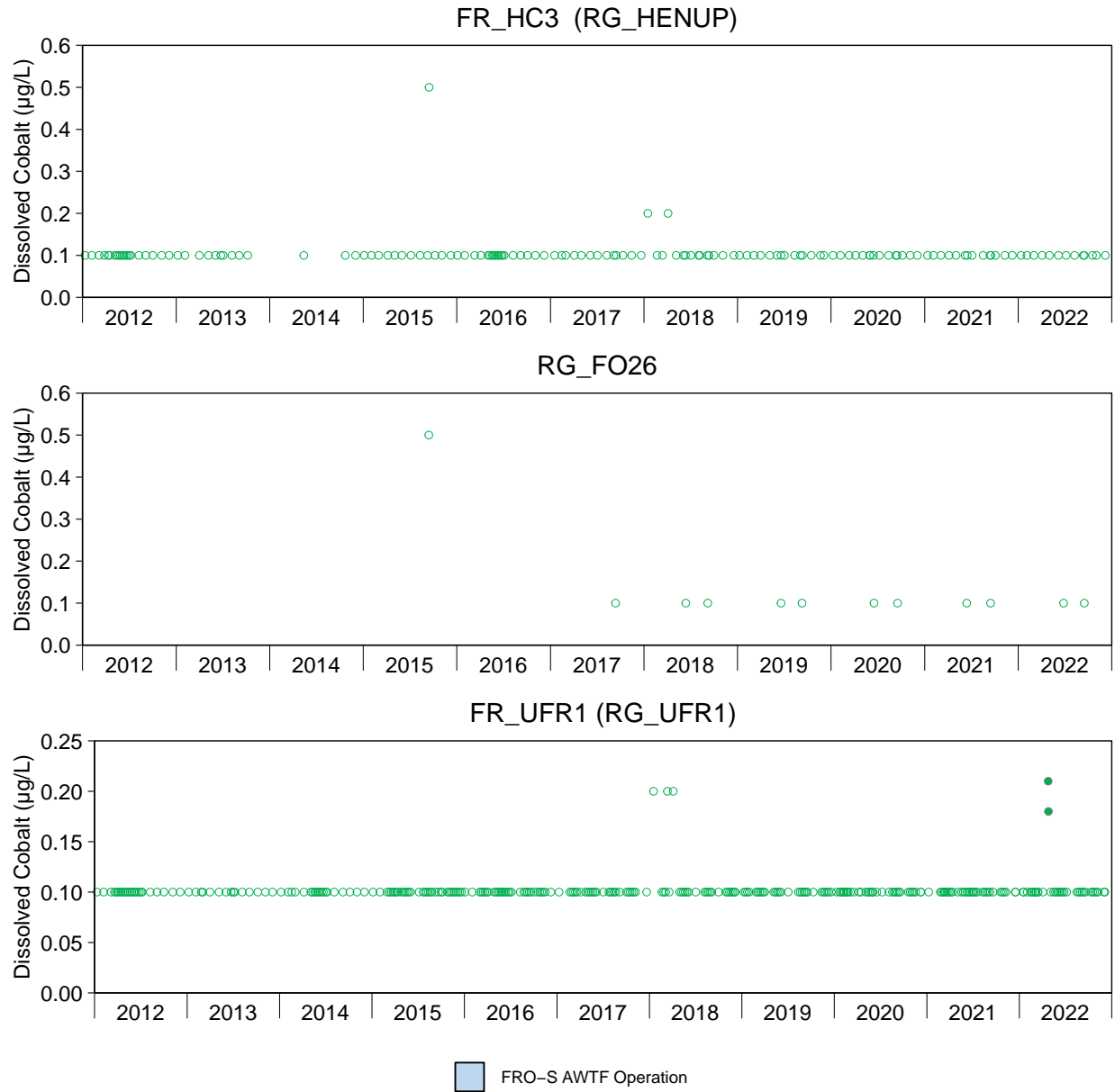


Figure D.5: Time Series Plots for Dissolved Cobalt Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. Dissolved cobalt was used because bioavailability and toxicity has been associated with the dissolved fraction (Environment Canada 2017; Azimuth 2018).

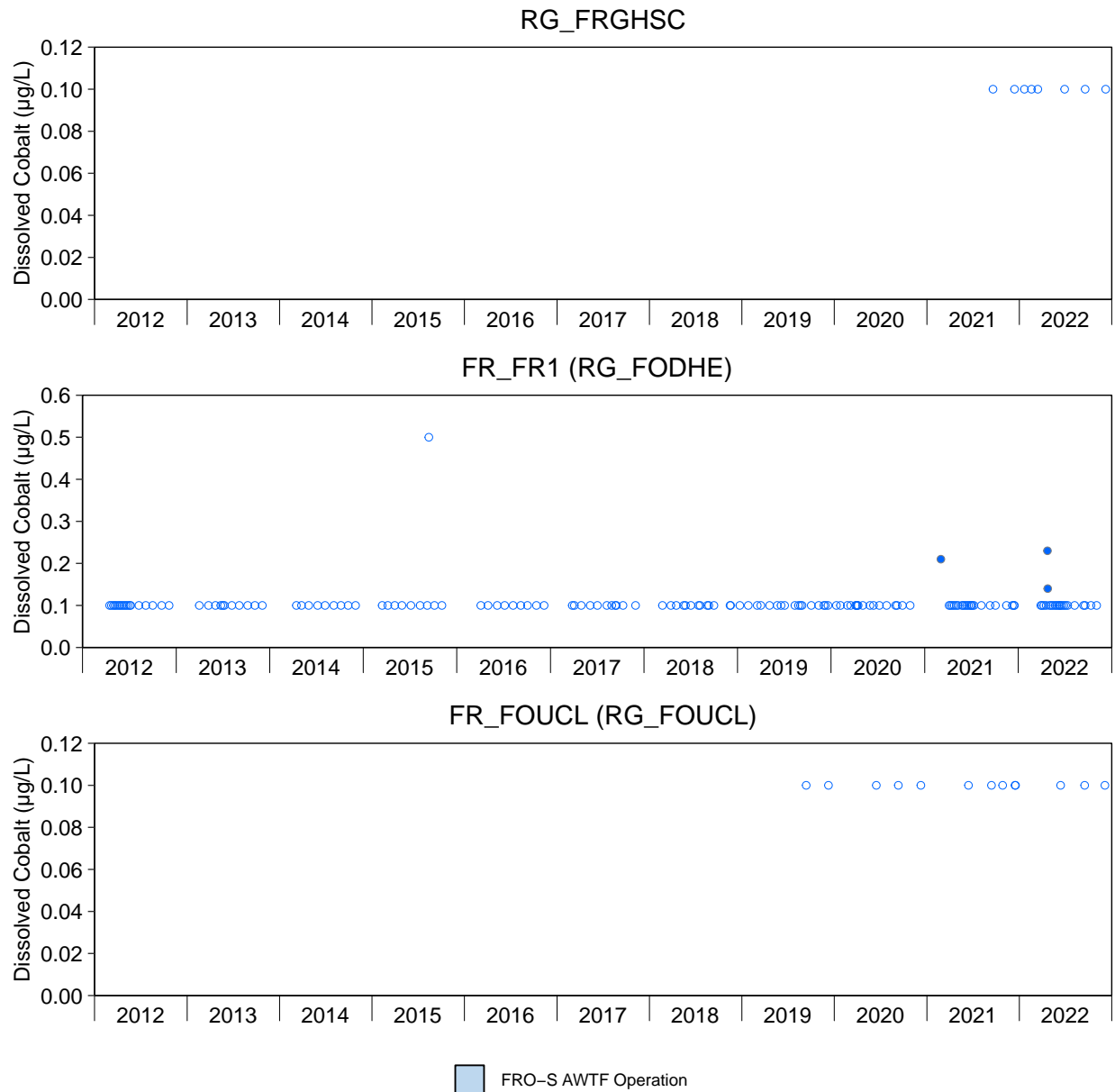


Figure D.5: Time Series Plots for Dissolved Cobalt Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. Dissolved cobalt was used because bioavailability and toxicity has been associated with the dissolved fraction (Environment Canada 2017; Azimuth 2018).

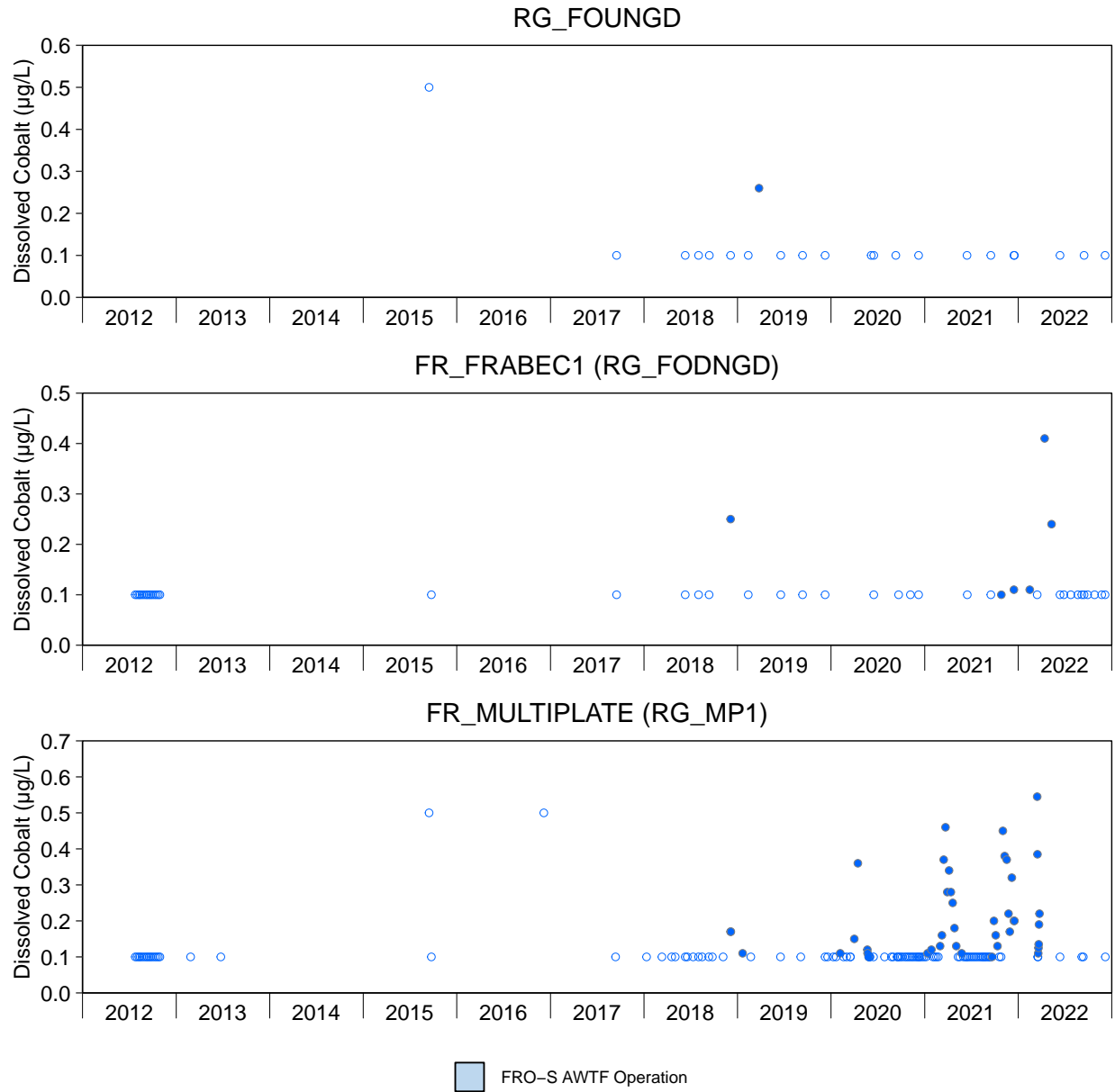


Figure D.5: Time Series Plots for Dissolved Cobalt Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. Dissolved cobalt was used because bioavailability and toxicity has been associated with the dissolved fraction (Environment Canada 2017; Azimuth 2018).

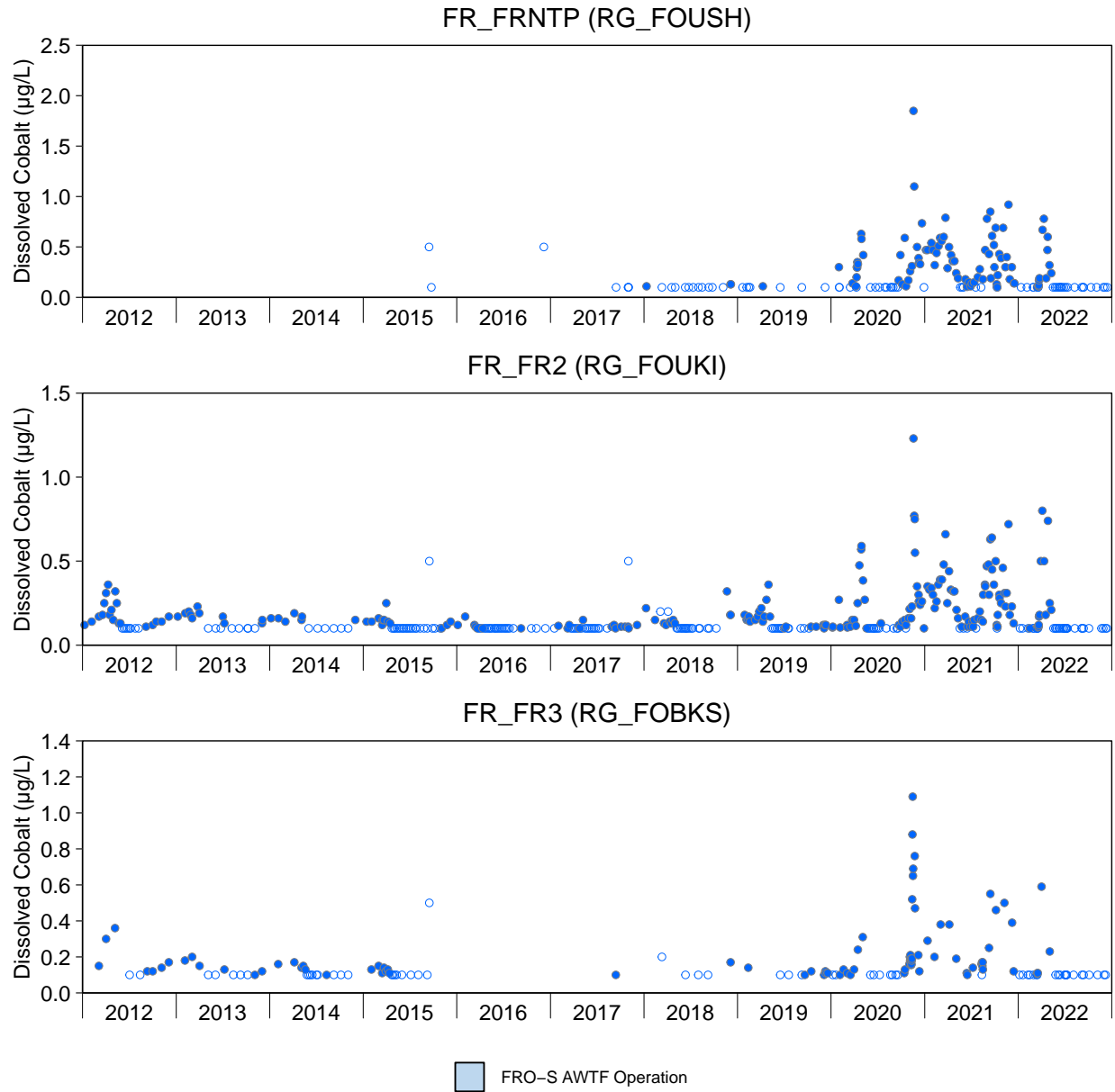


Figure D.5: Time Series Plots for Dissolved Cobalt Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. Dissolved cobalt was used because bioavailability and toxicity has been associated with the dissolved fraction (Environment Canada 2017; Azimuth 2018).

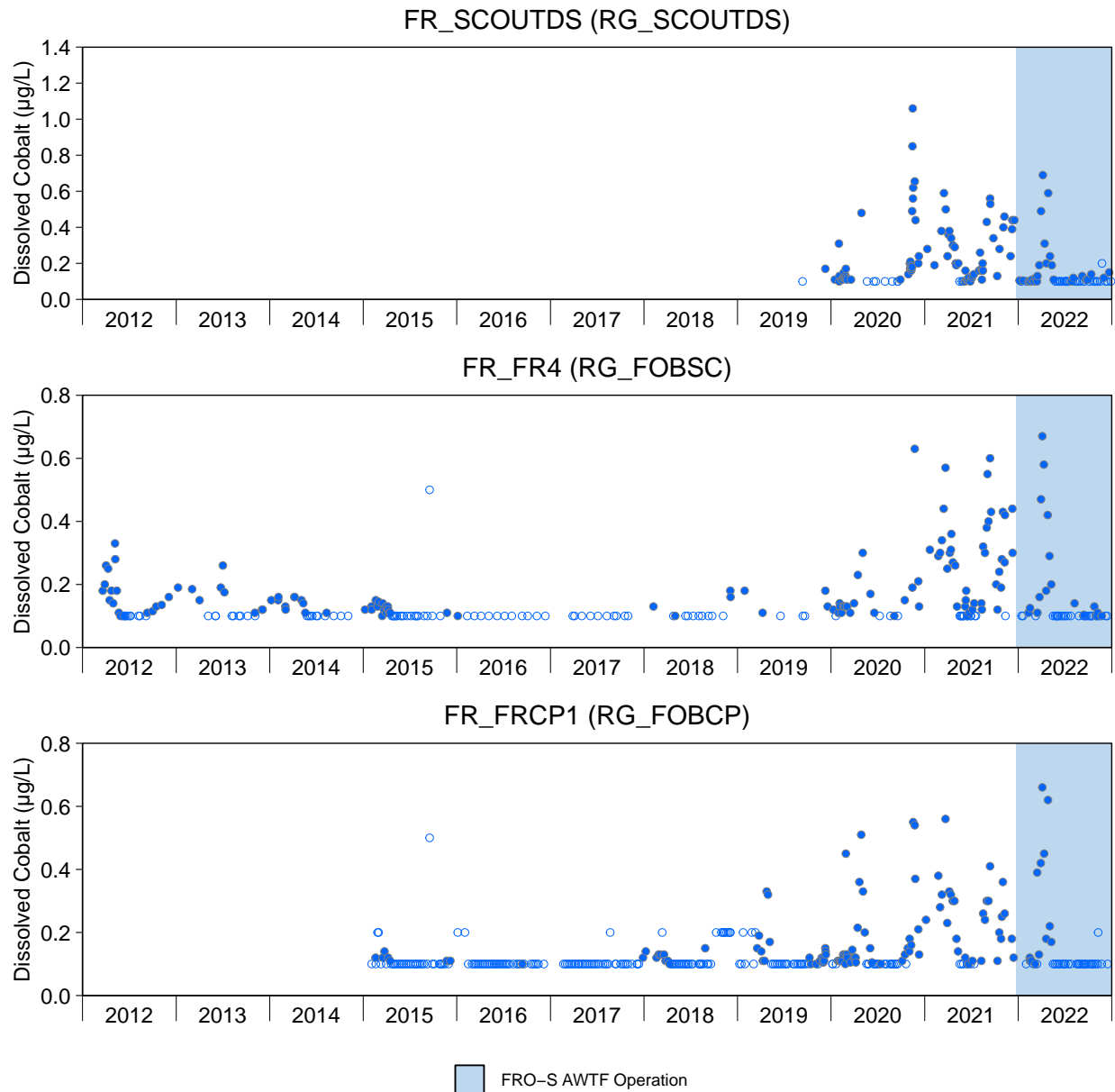


Figure D.5: Time Series Plots for Dissolved Cobalt Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. Dissolved cobalt was used because bioavailability and toxicity has been associated with the dissolved fraction (Environment Canada 2017; Azimuth 2018).

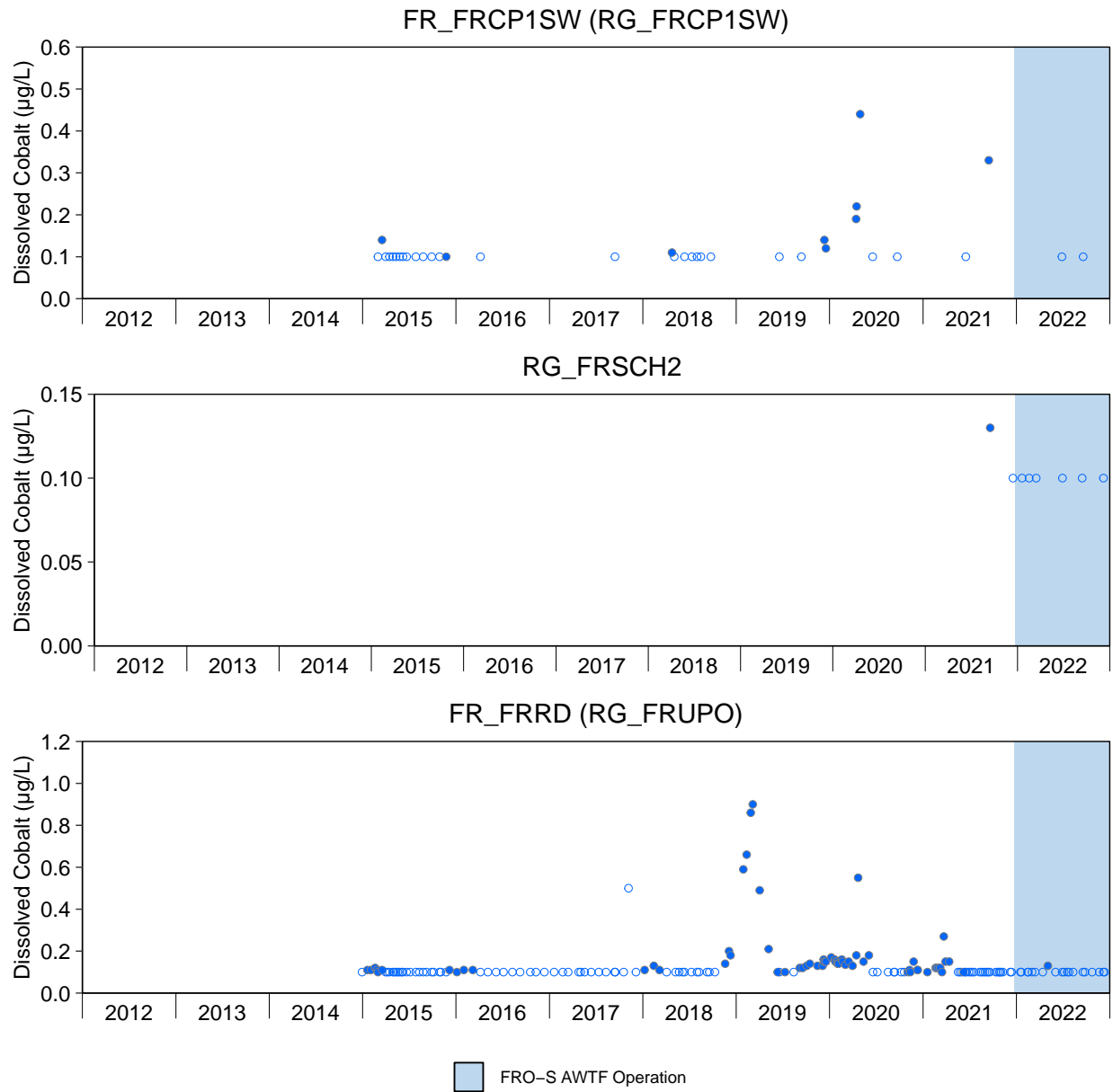


Figure D.5: Time Series Plots for Dissolved Cobalt Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. Dissolved cobalt was used because bioavailability and toxicity has been associated with the dissolved fraction (Environment Canada 2017; Azimuth 2018).

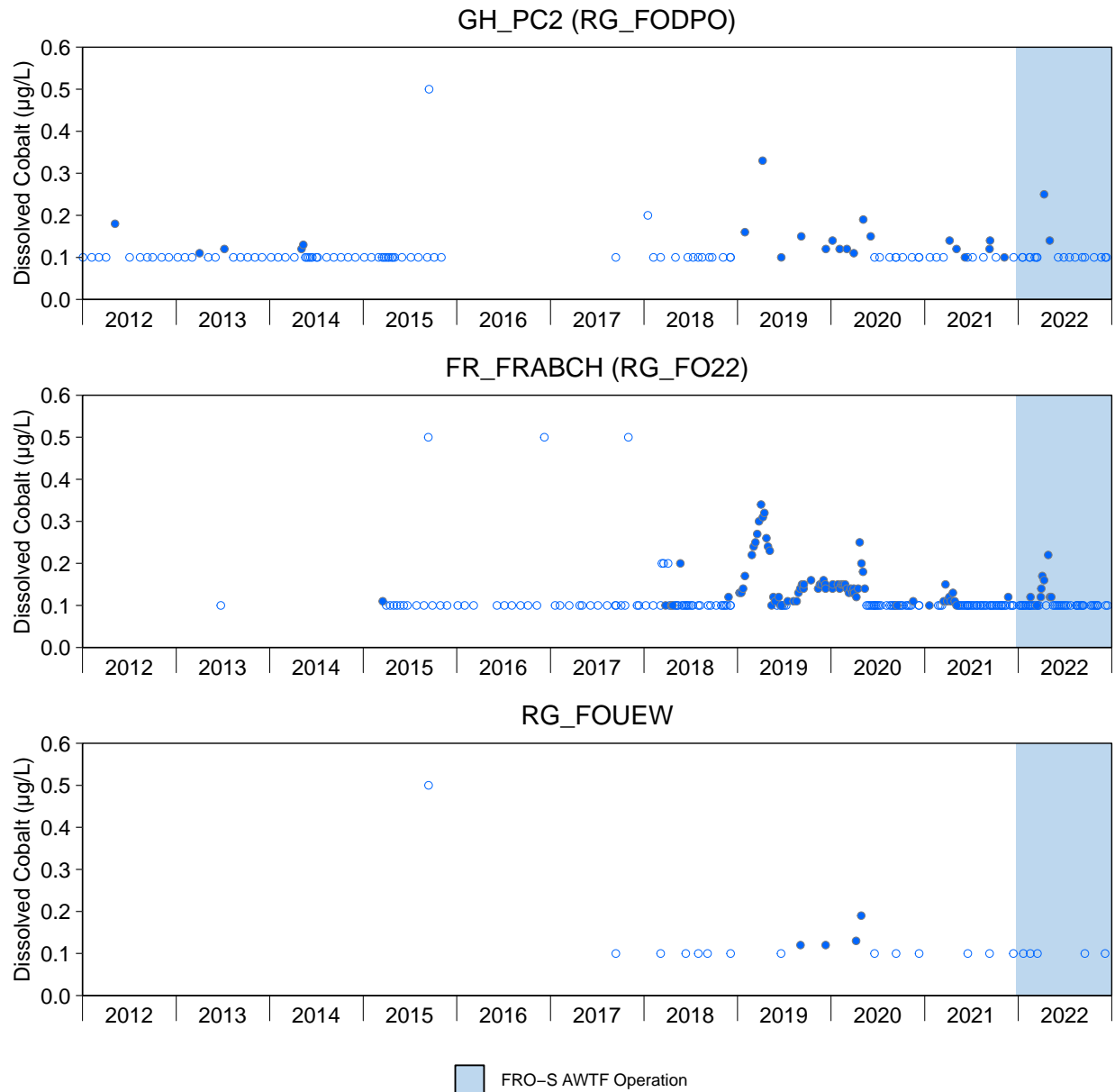


Figure D.5: Time Series Plots for Dissolved Cobalt Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. Dissolved cobalt was used because bioavailability and toxicity has been associated with the dissolved fraction (Environment Canada 2017; Azimuth 2018).

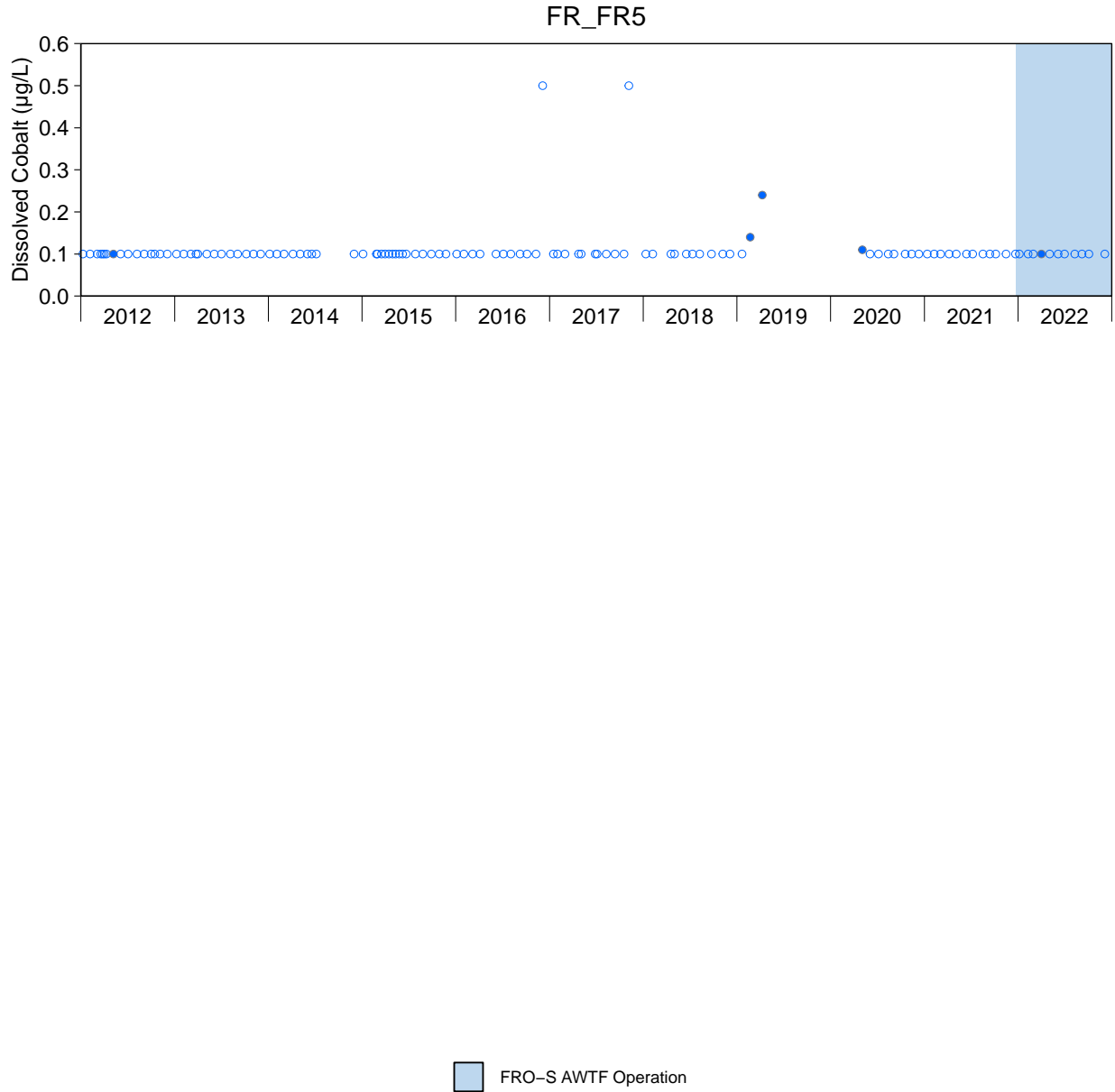


Figure D.5: Time Series Plots for Dissolved Cobalt Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. Dissolved cobalt was used because bioavailability and toxicity has been associated with the dissolved fraction (Environment Canada 2017; Azimuth 2018).

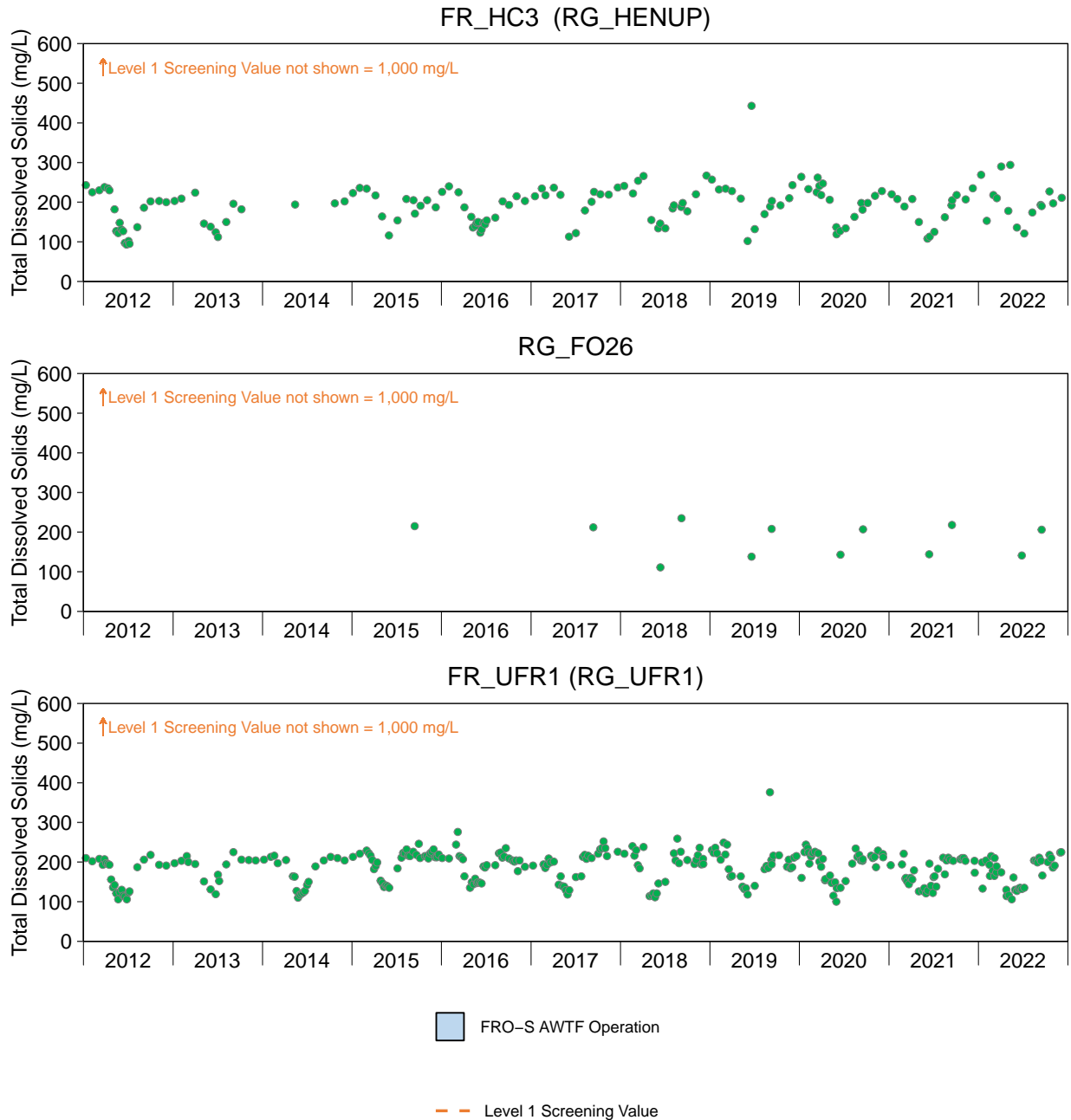


Figure D.6: Time Series Plots for Total Dissolved Solids Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

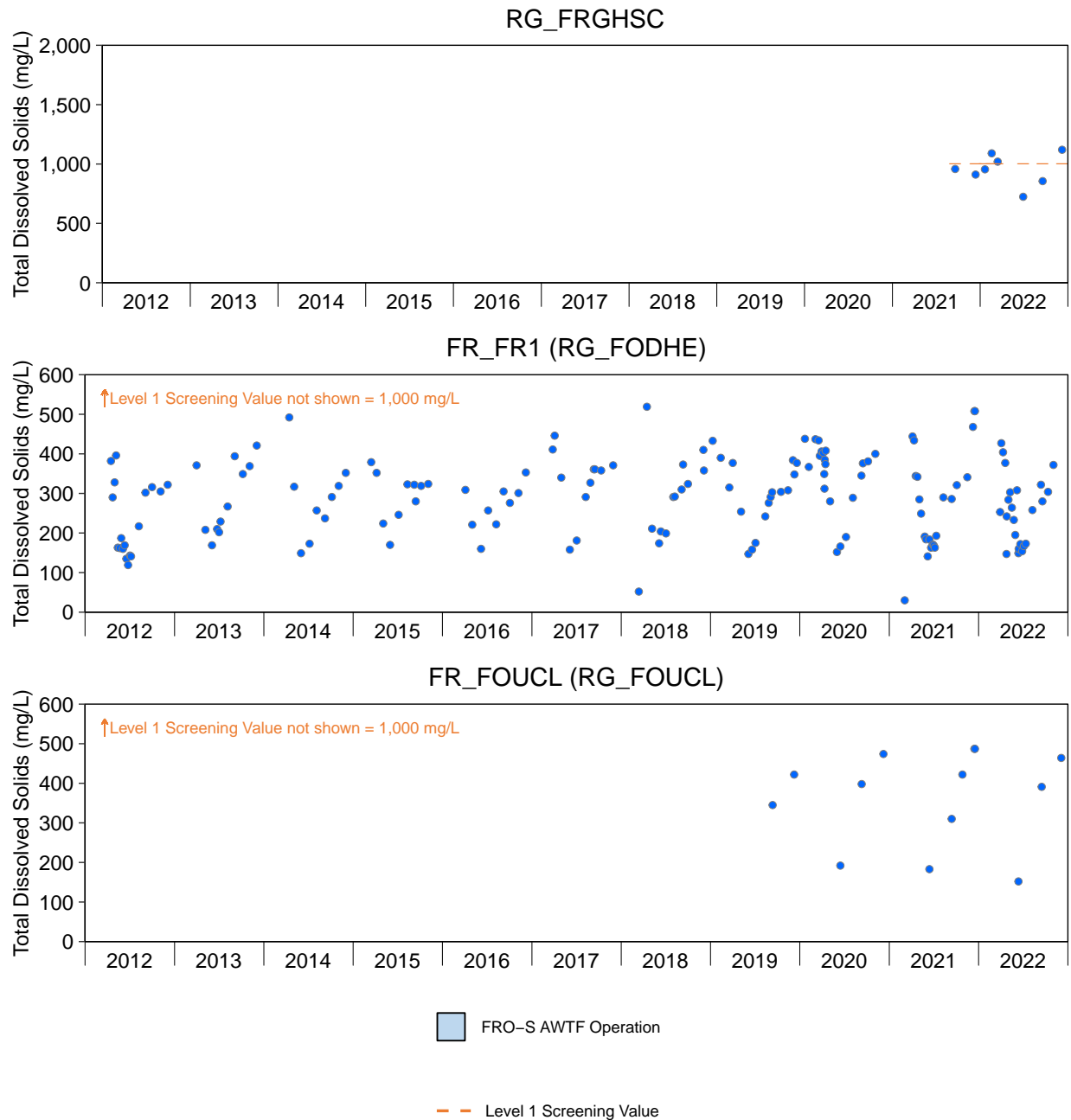


Figure D.6: Time Series Plots for Total Dissolved Solids Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

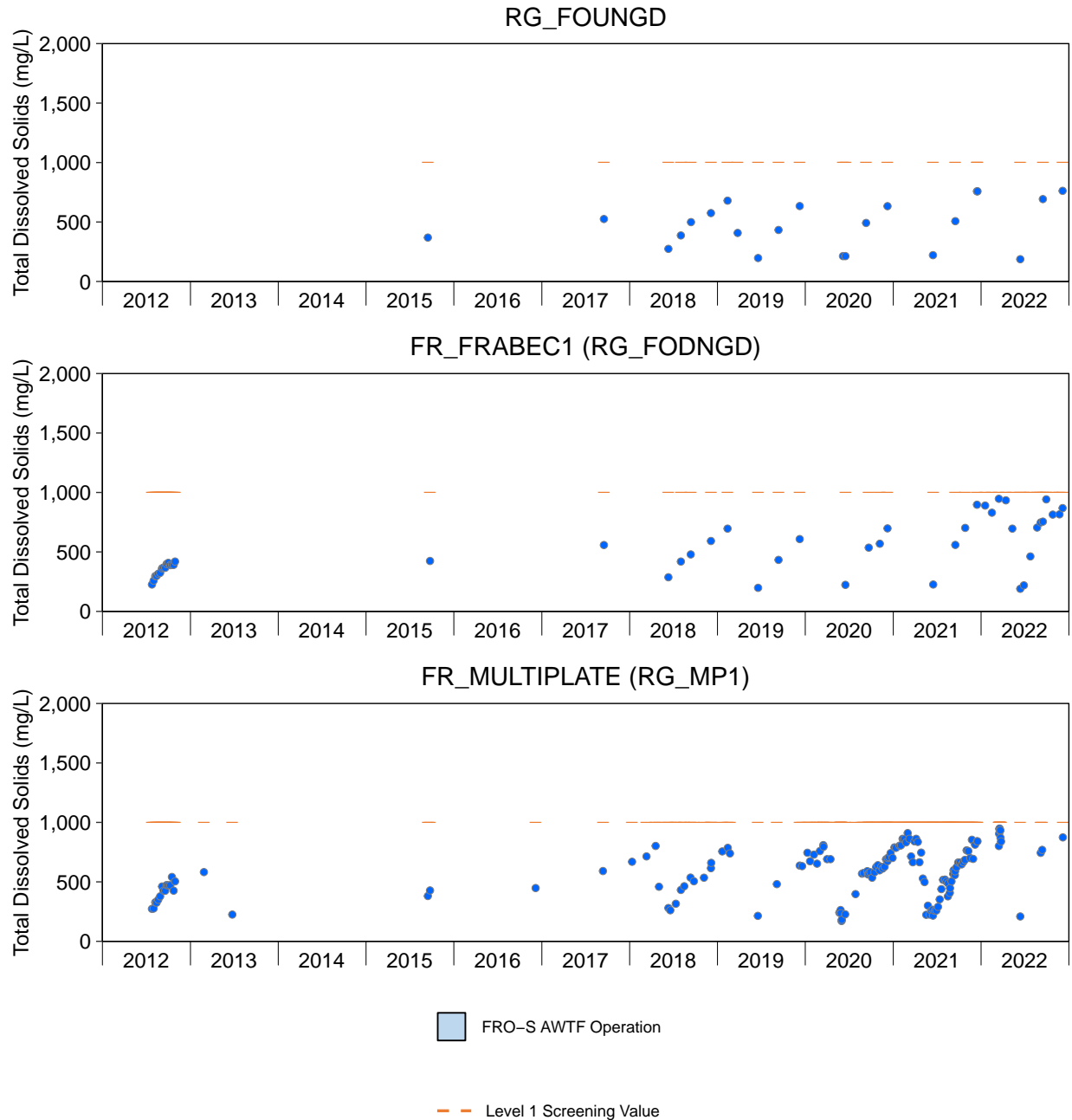


Figure D.6: Time Series Plots for Total Dissolved Solids Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

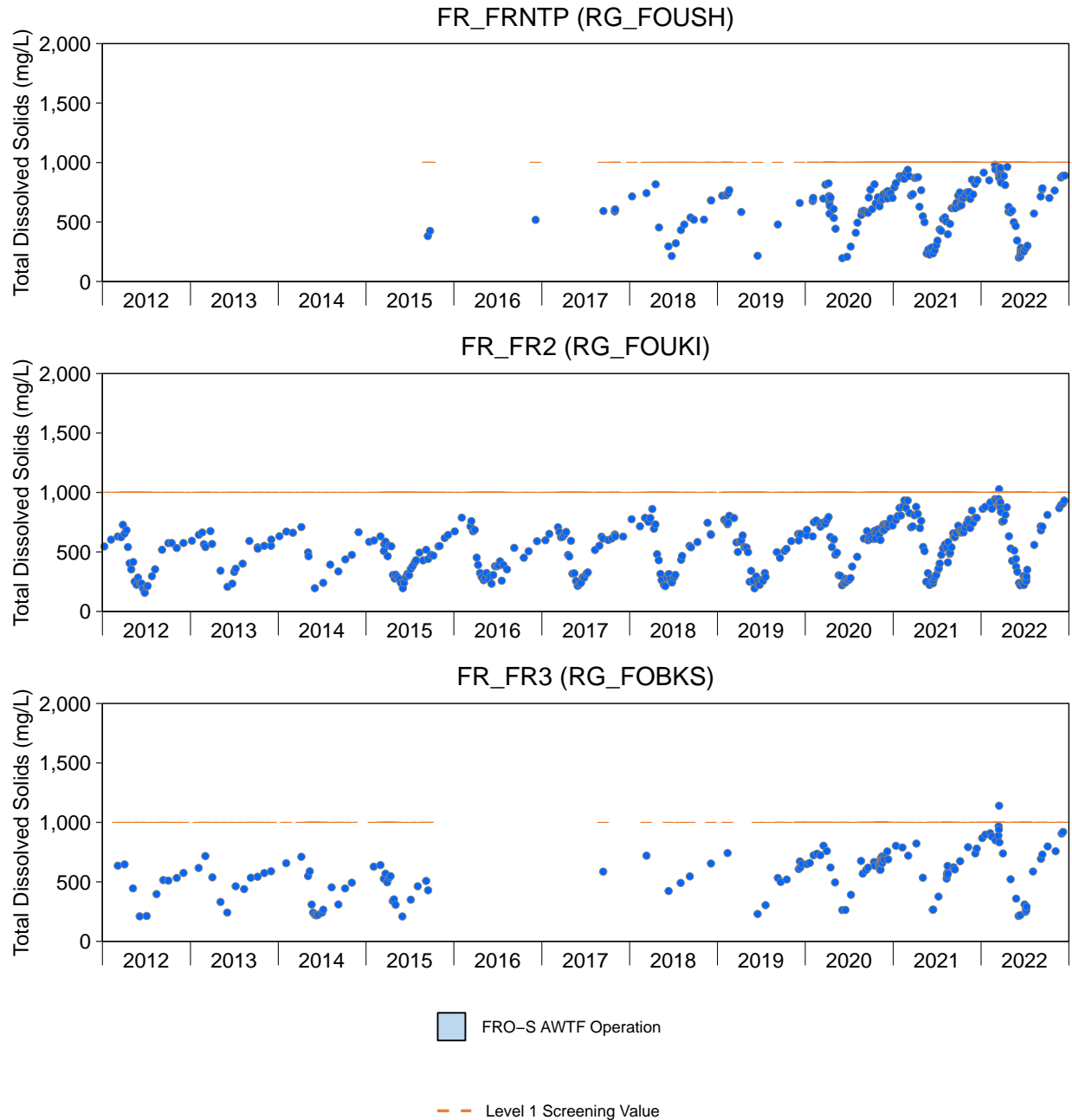


Figure D.6: Time Series Plots for Total Dissolved Solids Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

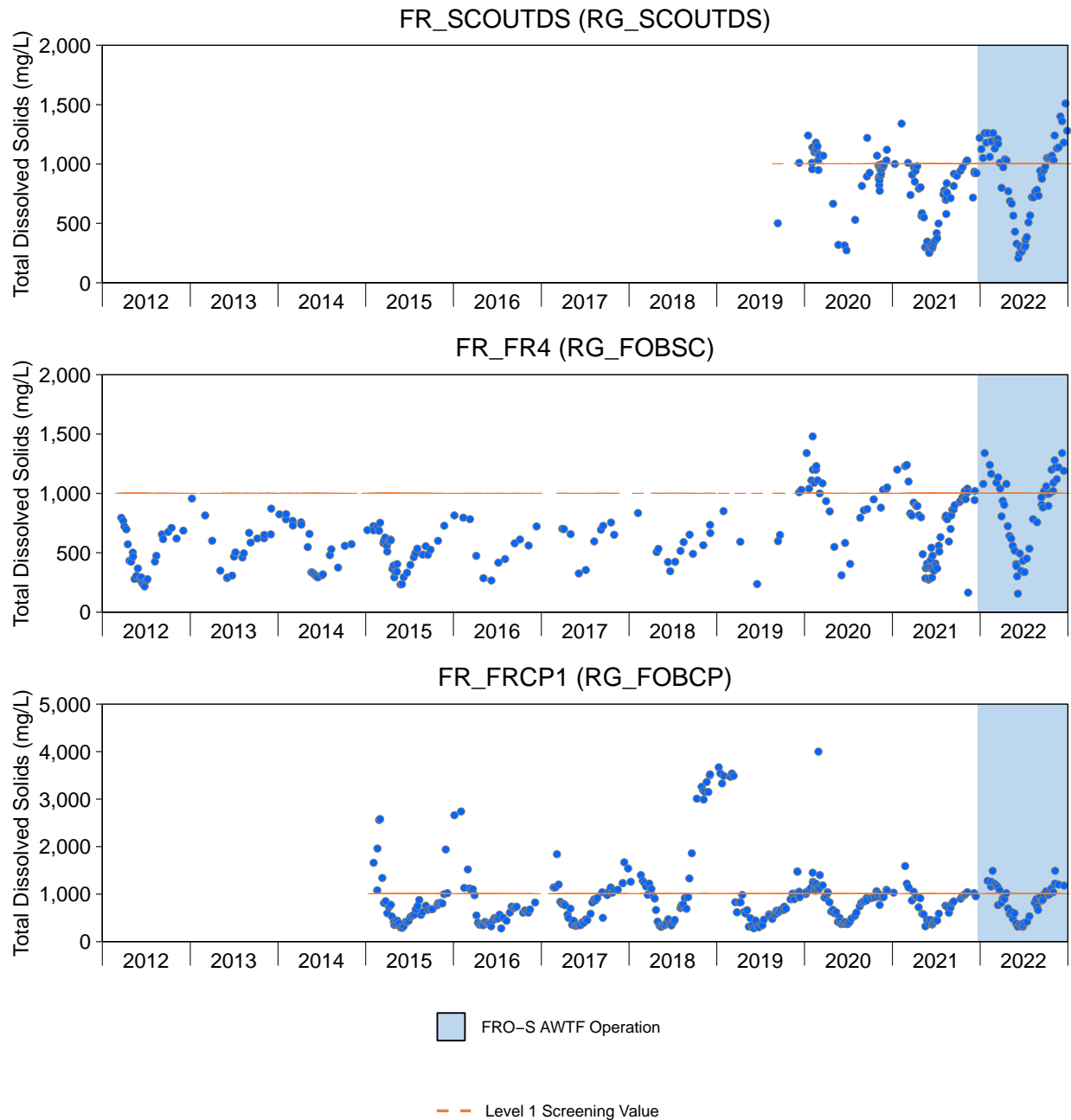


Figure D.6: Time Series Plots for Total Dissolved Solids Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

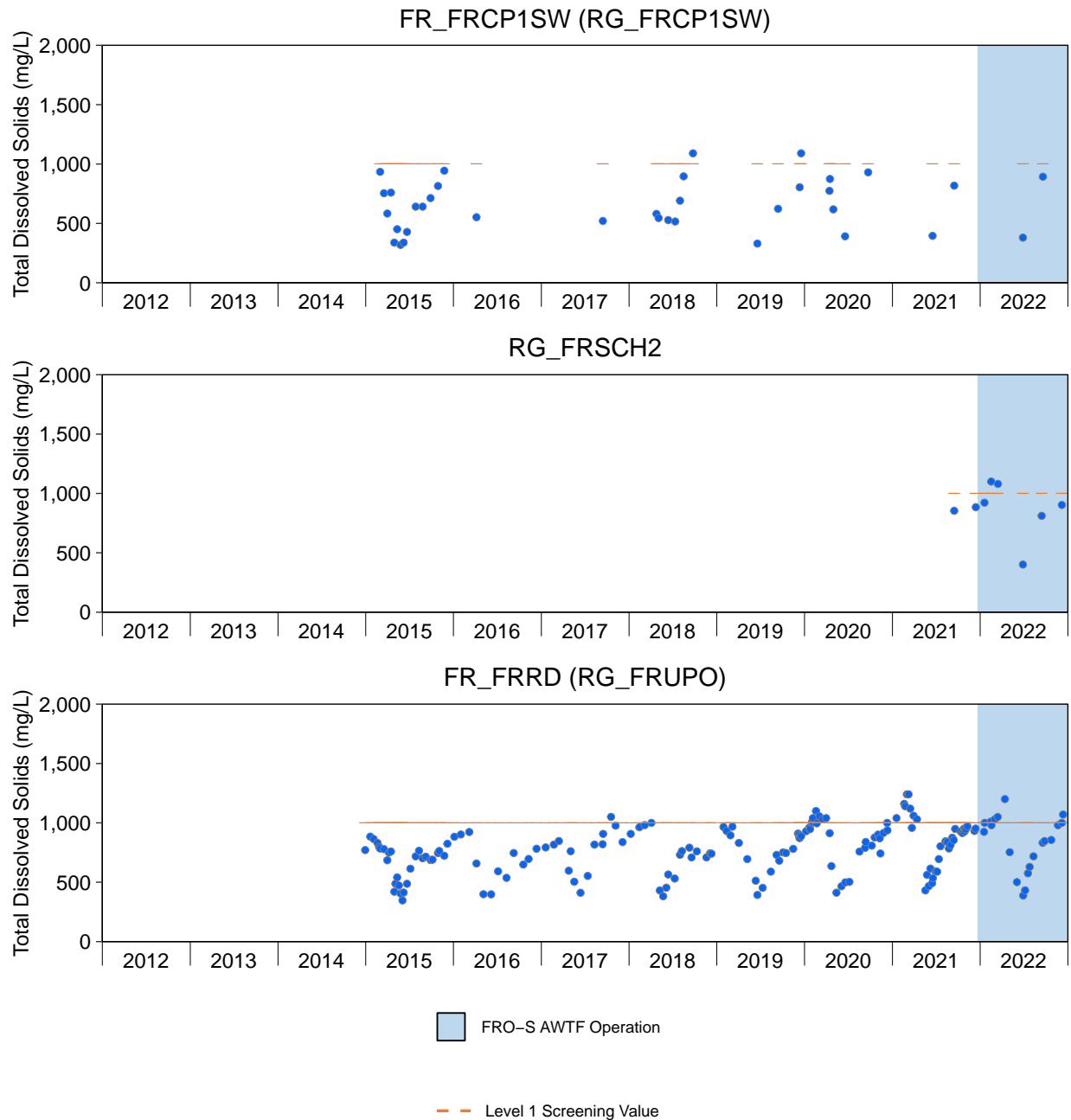


Figure D.6: Time Series Plots for Total Dissolved Solids Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

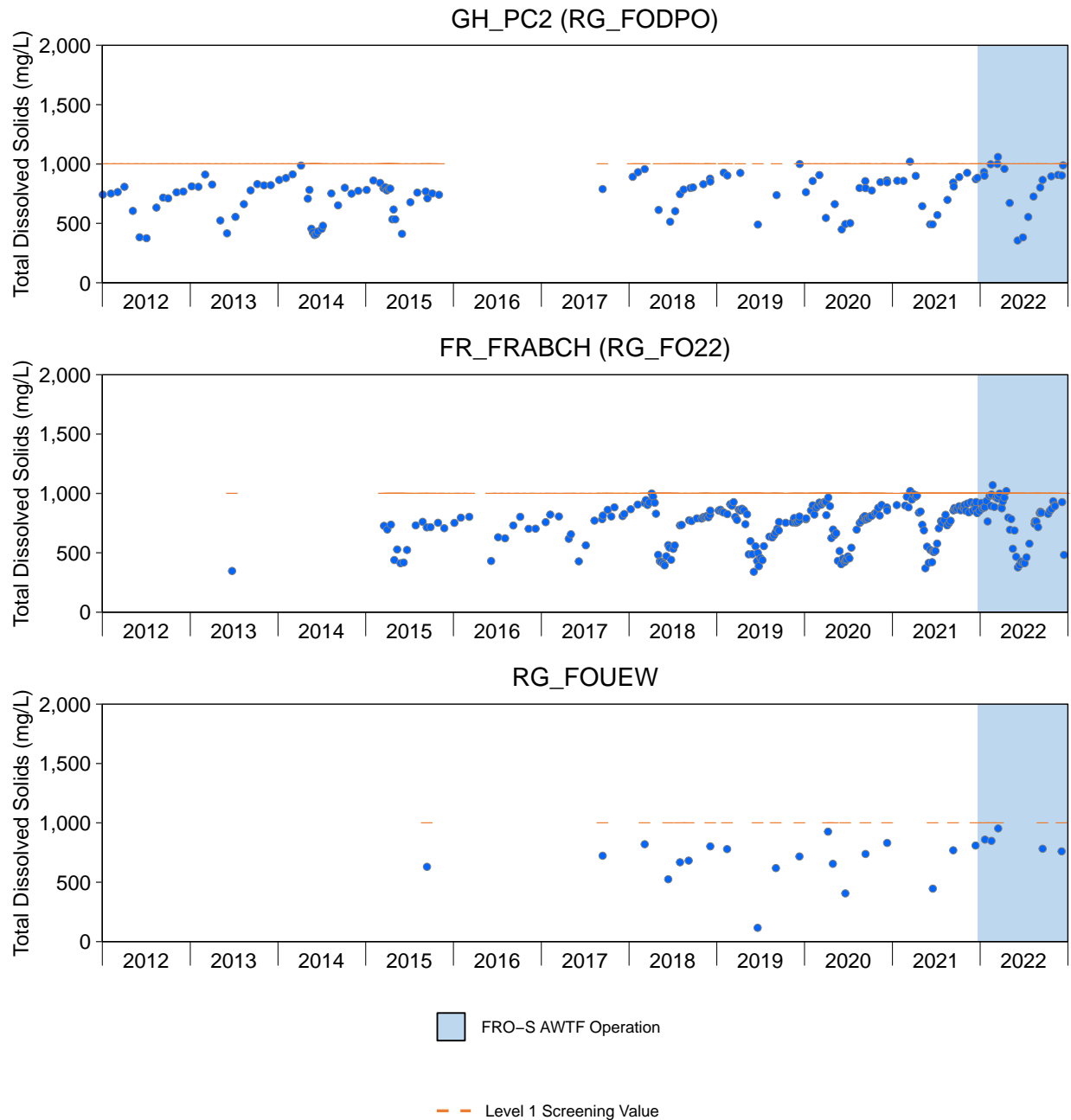
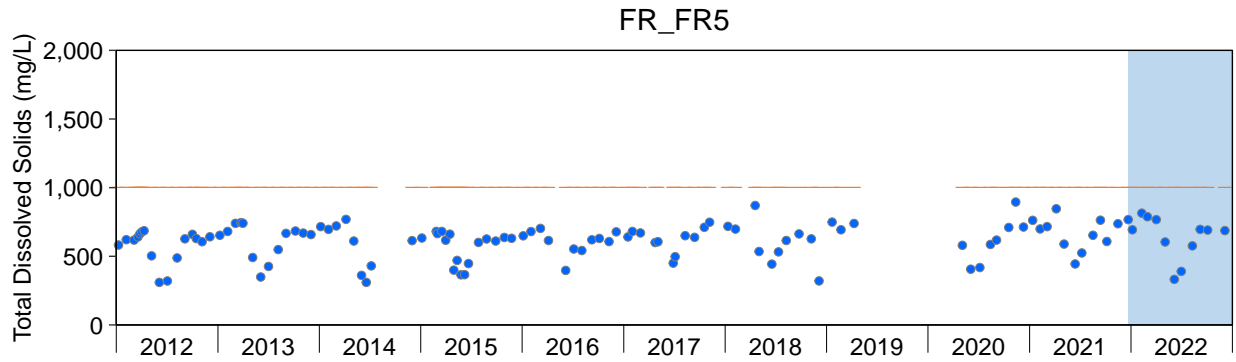


Figure D.6: Time Series Plots for Total Dissolved Solids Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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



□ FRO-S AWTF Operation

- - - Level 1 Screening Value

Figure D.6: Time Series Plots for Total Dissolved Solids Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

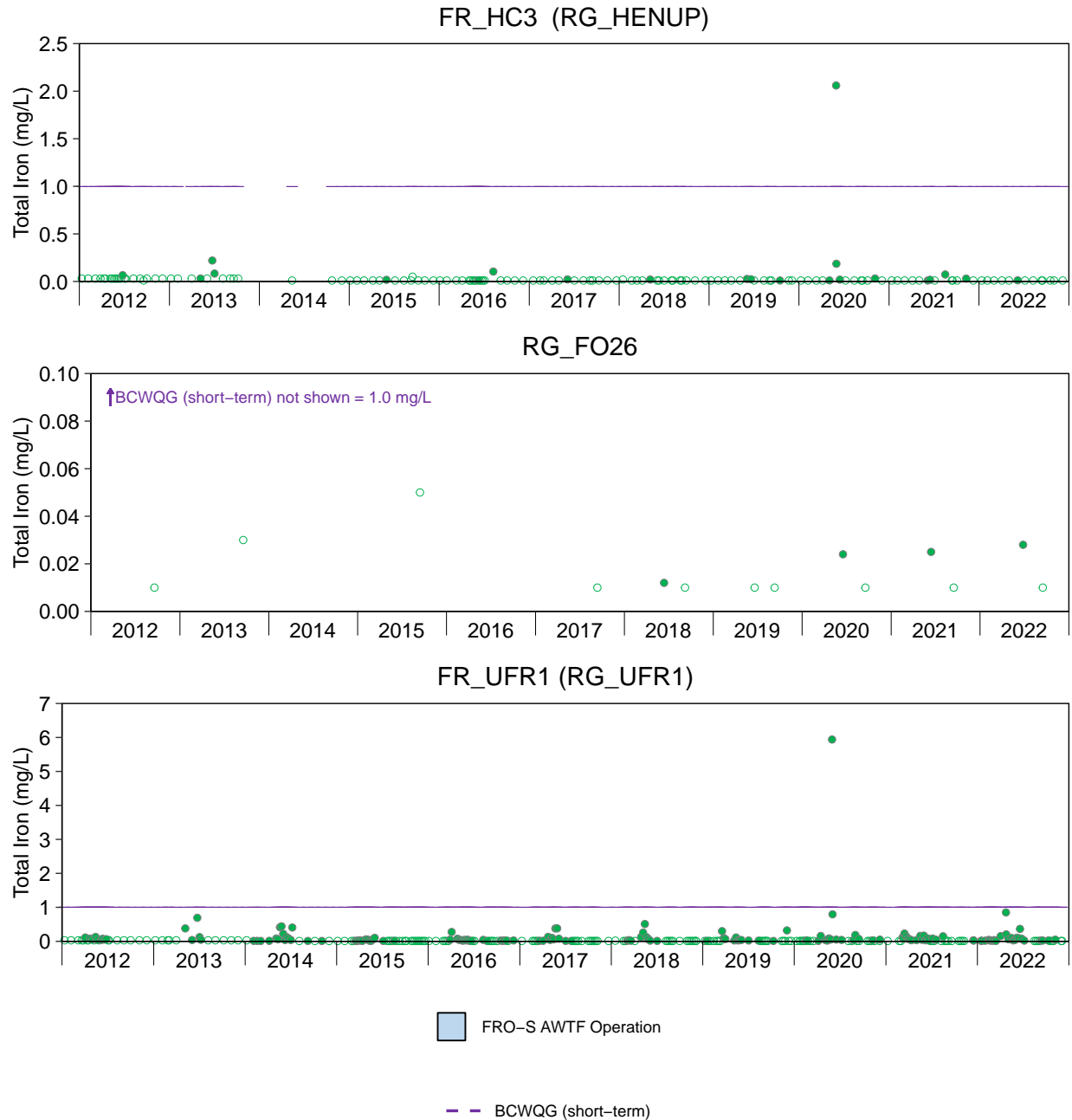


Figure D.7: Time Series Plots for Total Iron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

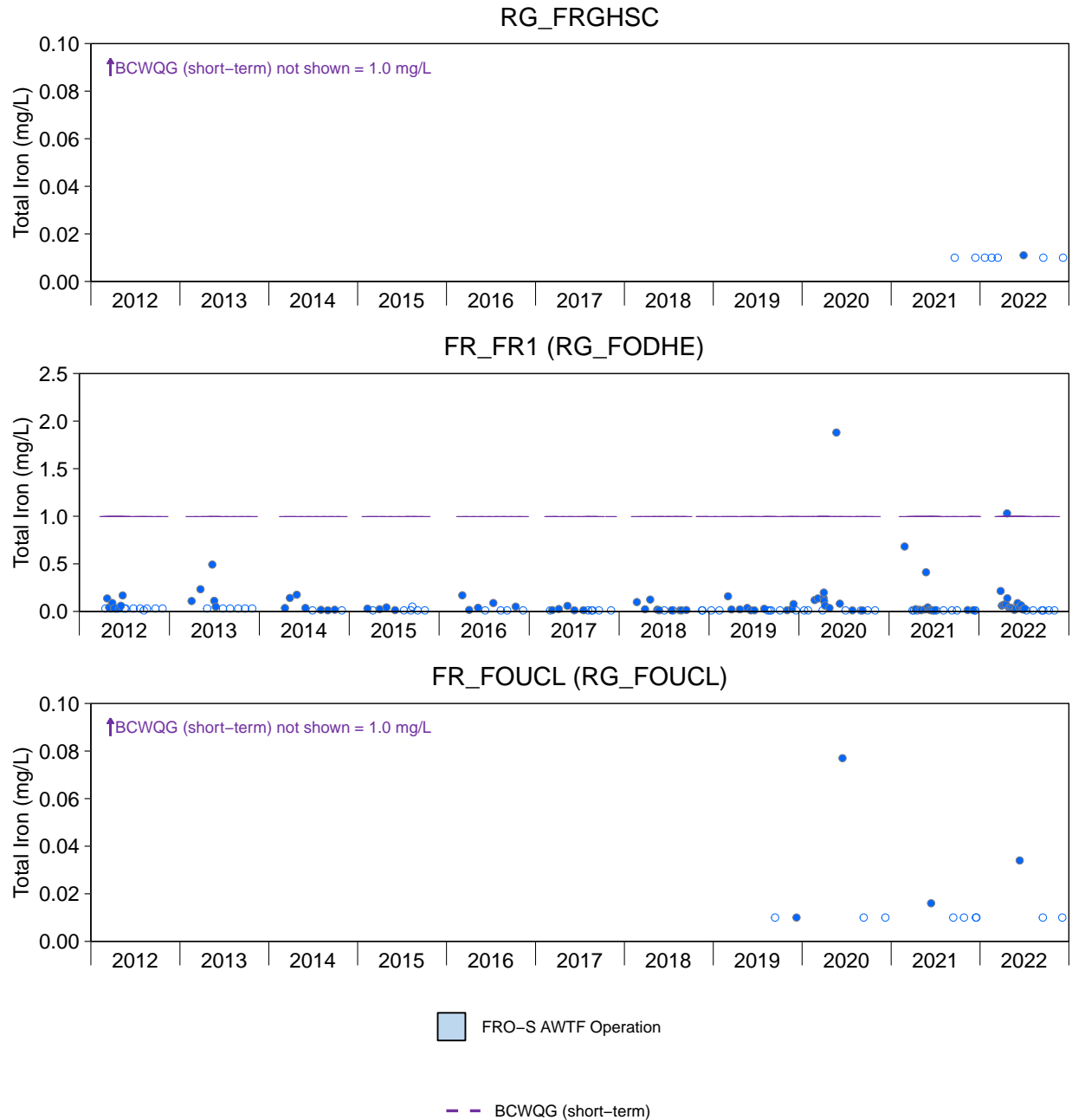


Figure D.7: Time Series Plots for Total Iron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

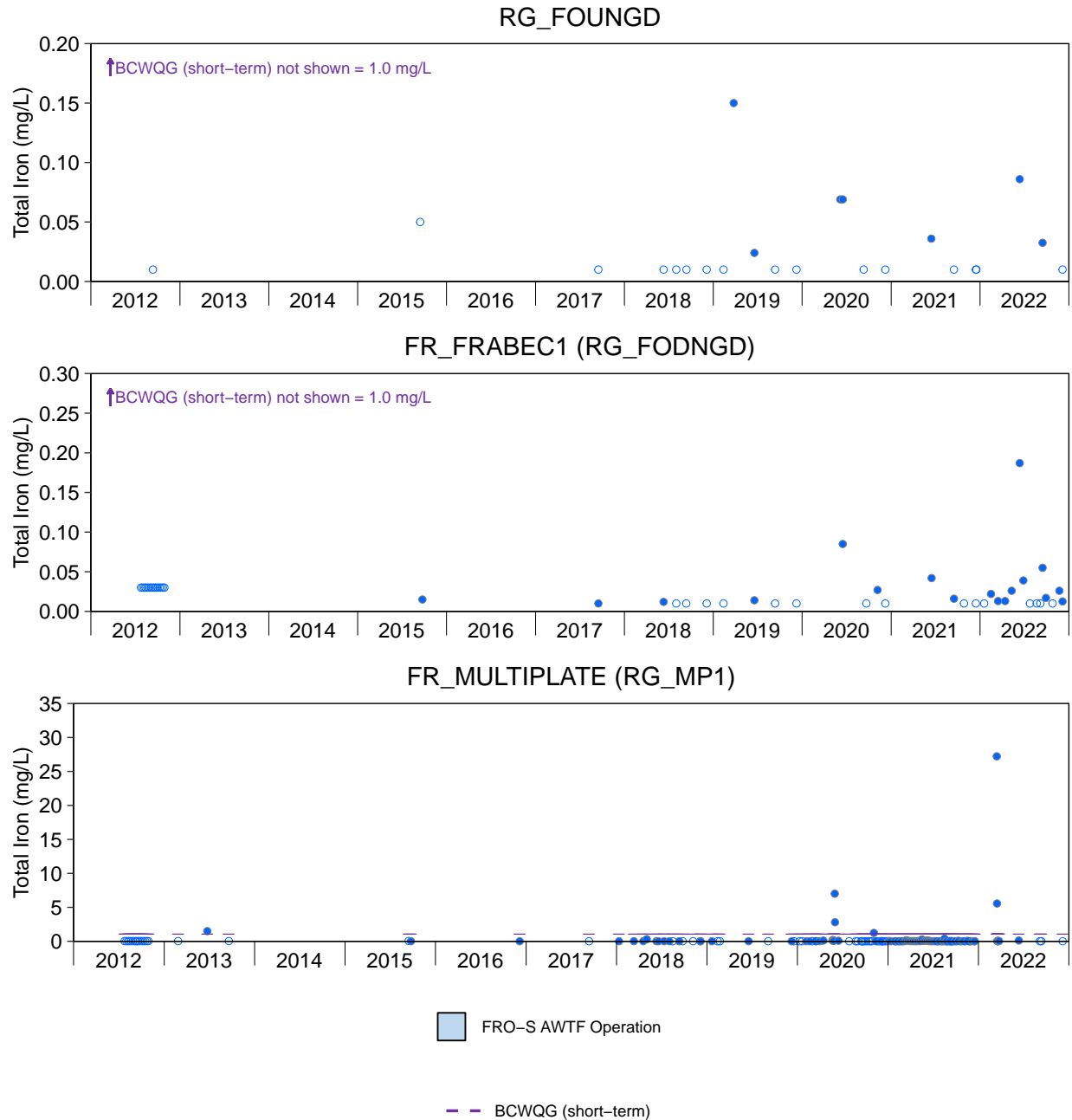


Figure D.7: Time Series Plots for Total Iron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

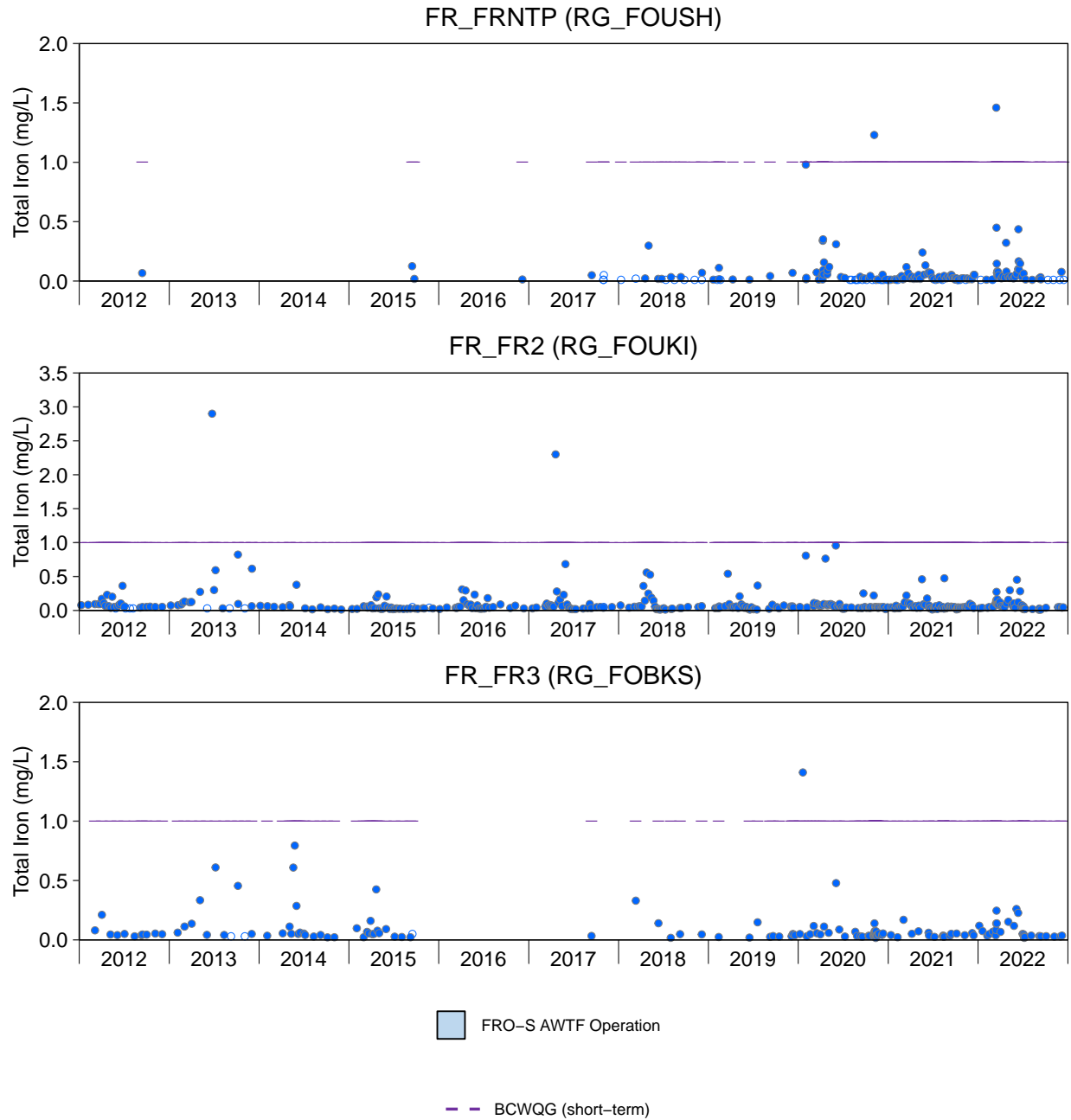


Figure D.7: Time Series Plots for Total Iron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

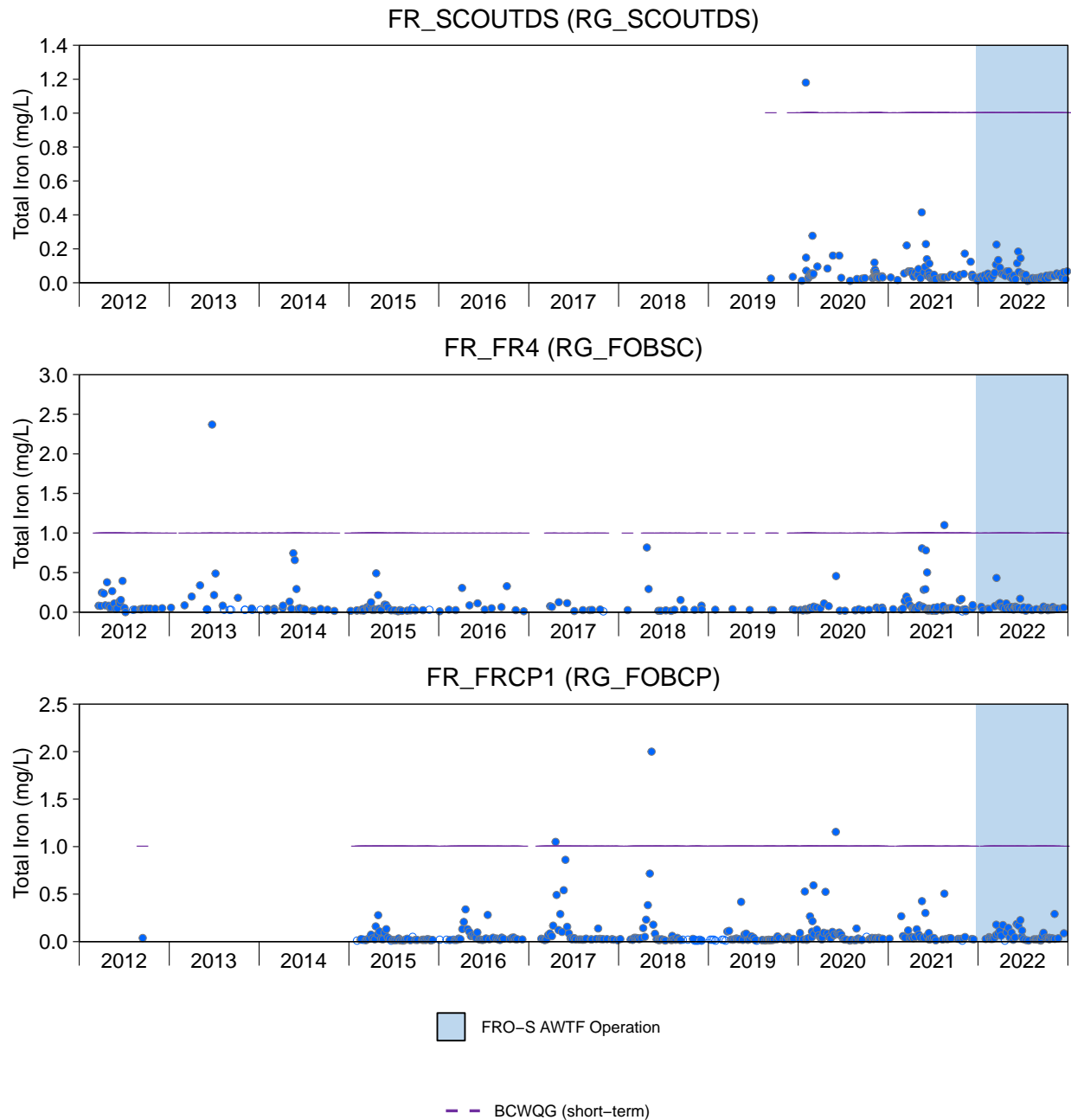


Figure D.7: Time Series Plots for Total Iron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

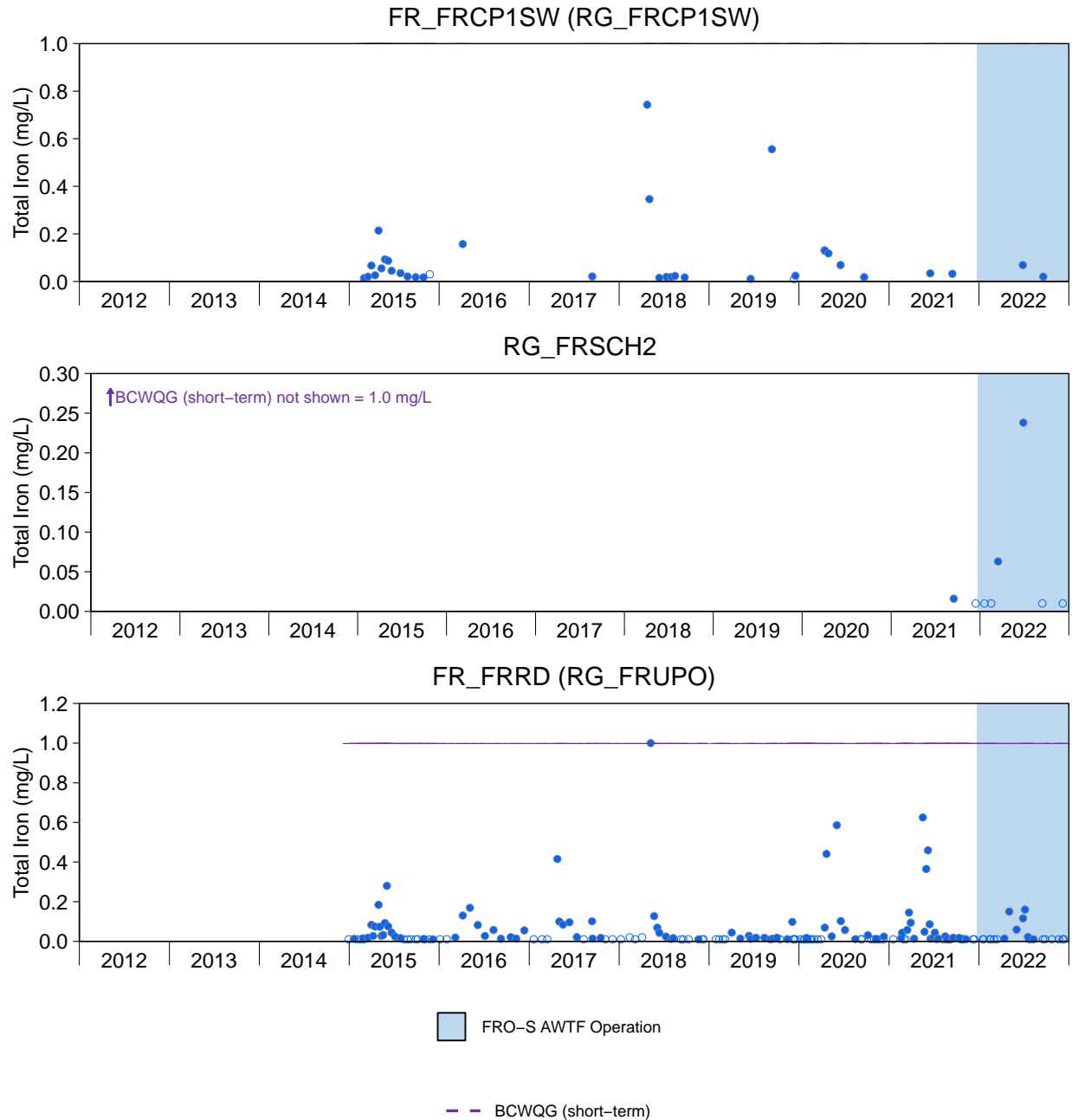


Figure D.7: Time Series Plots for Total Iron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

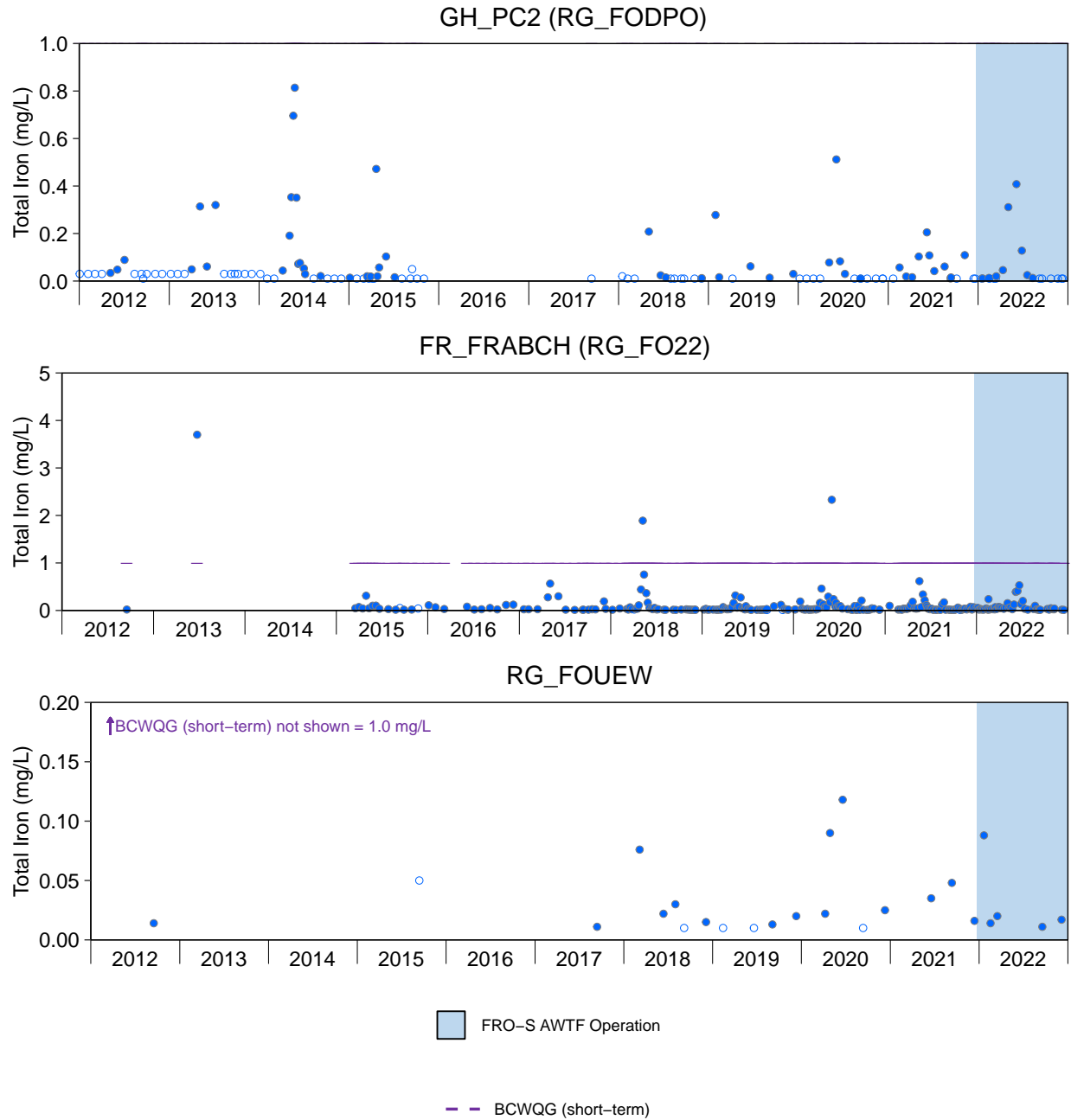


Figure D.7: Time Series Plots for Total Iron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

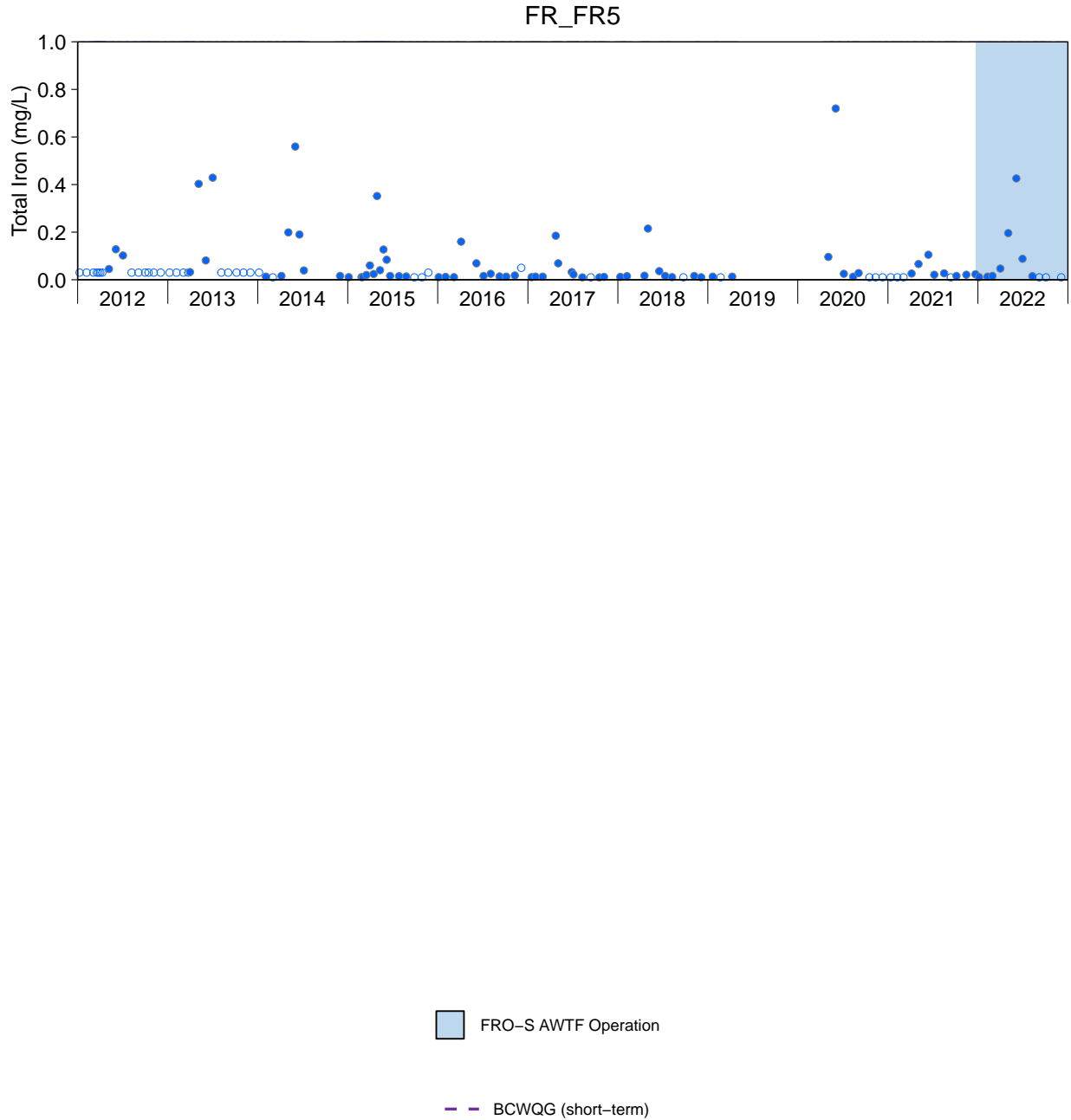


Figure D.7: Time Series Plots for Total Iron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

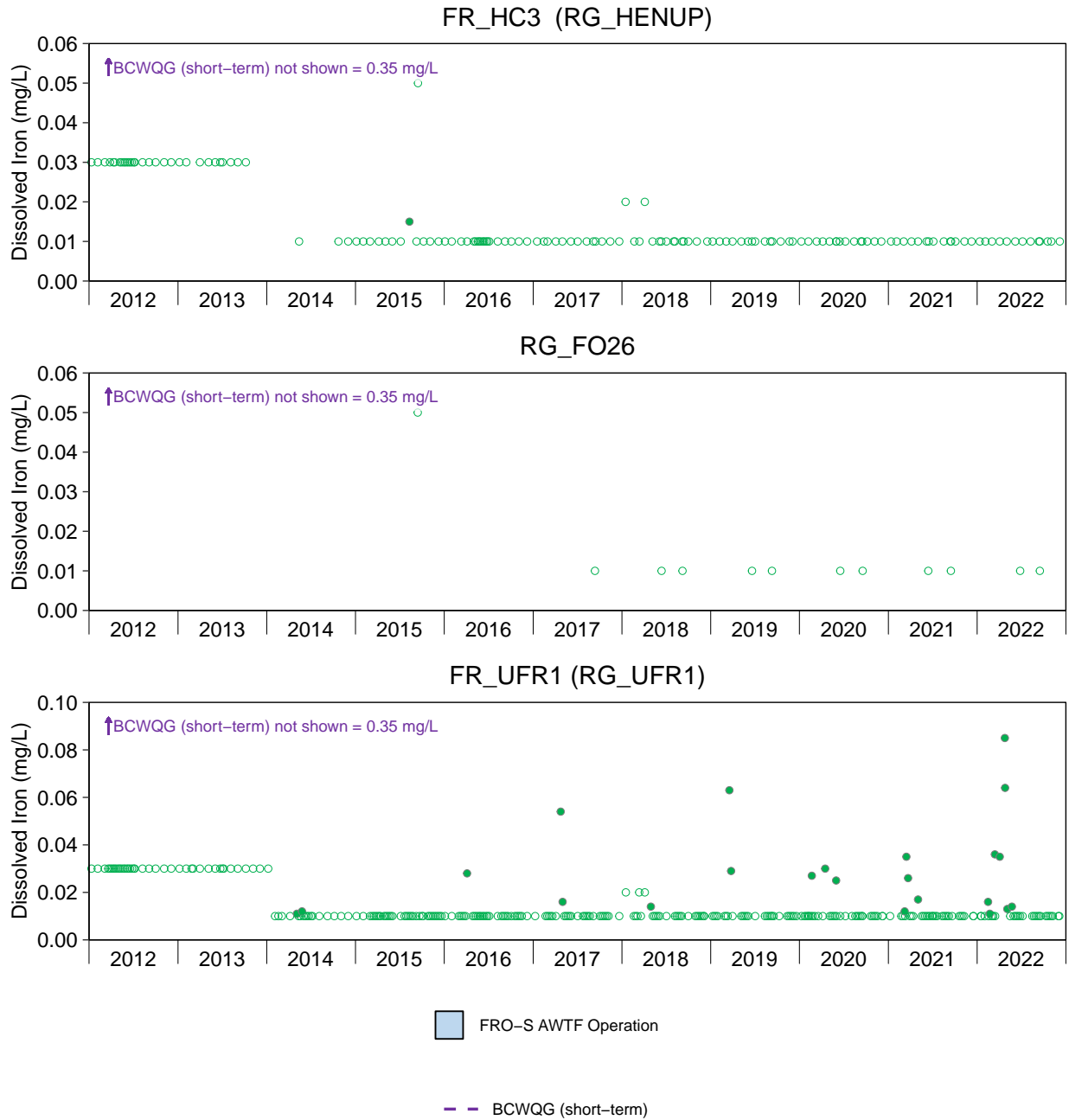


Figure D.8: Time Series Plots for Dissolved Iron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

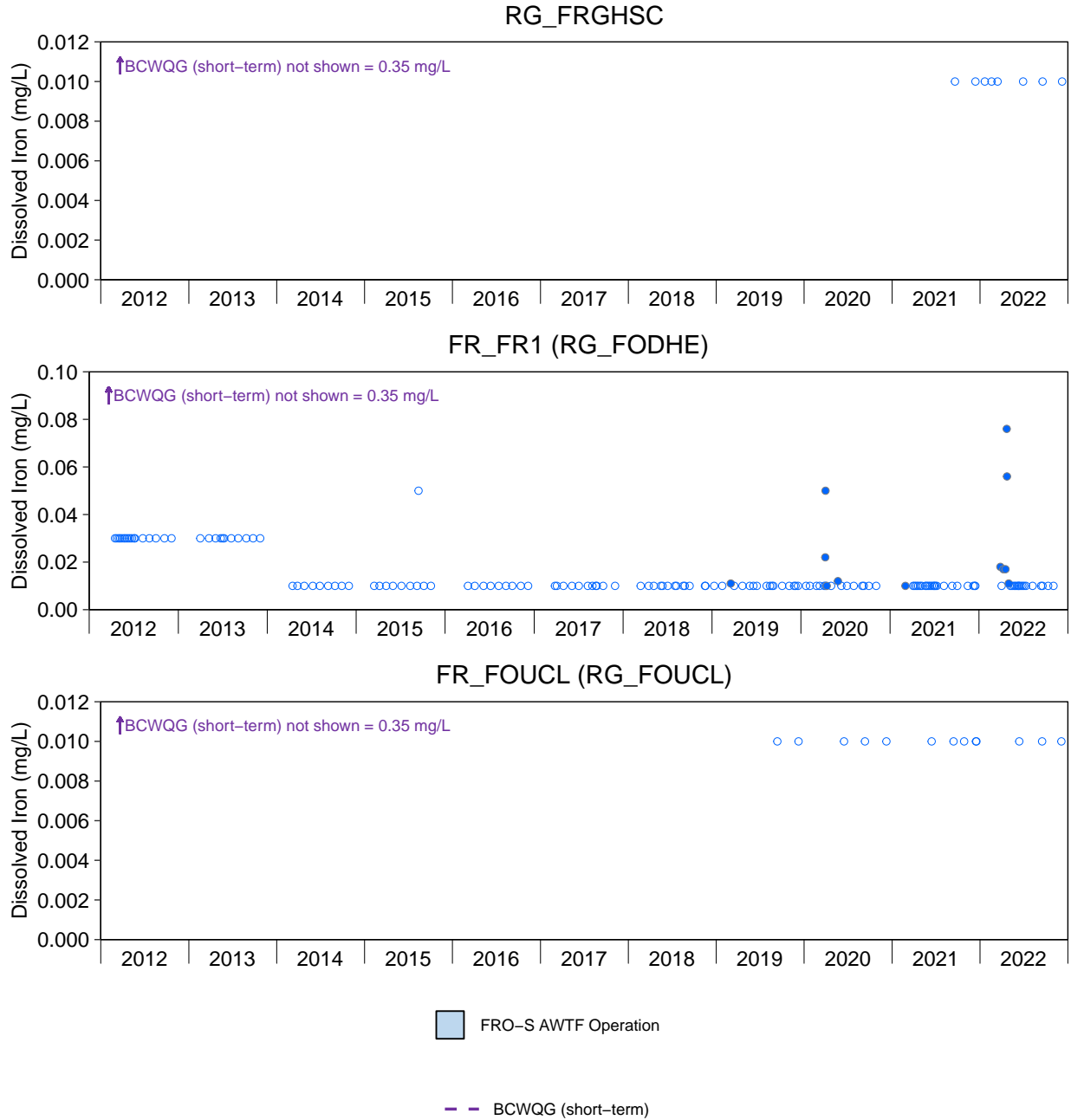


Figure D.8: Time Series Plots for Dissolved Iron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

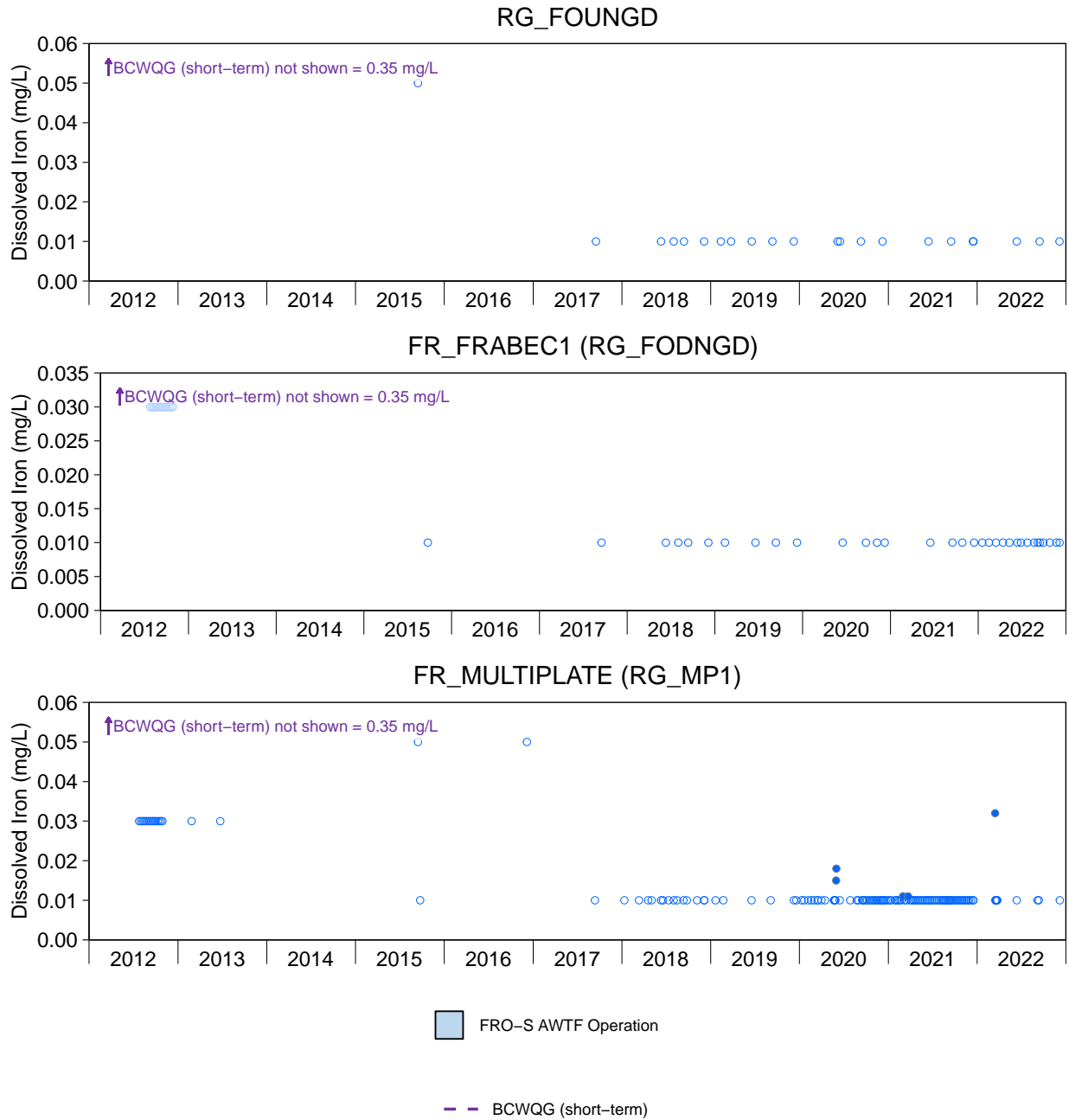


Figure D.8: Time Series Plots for Dissolved Iron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

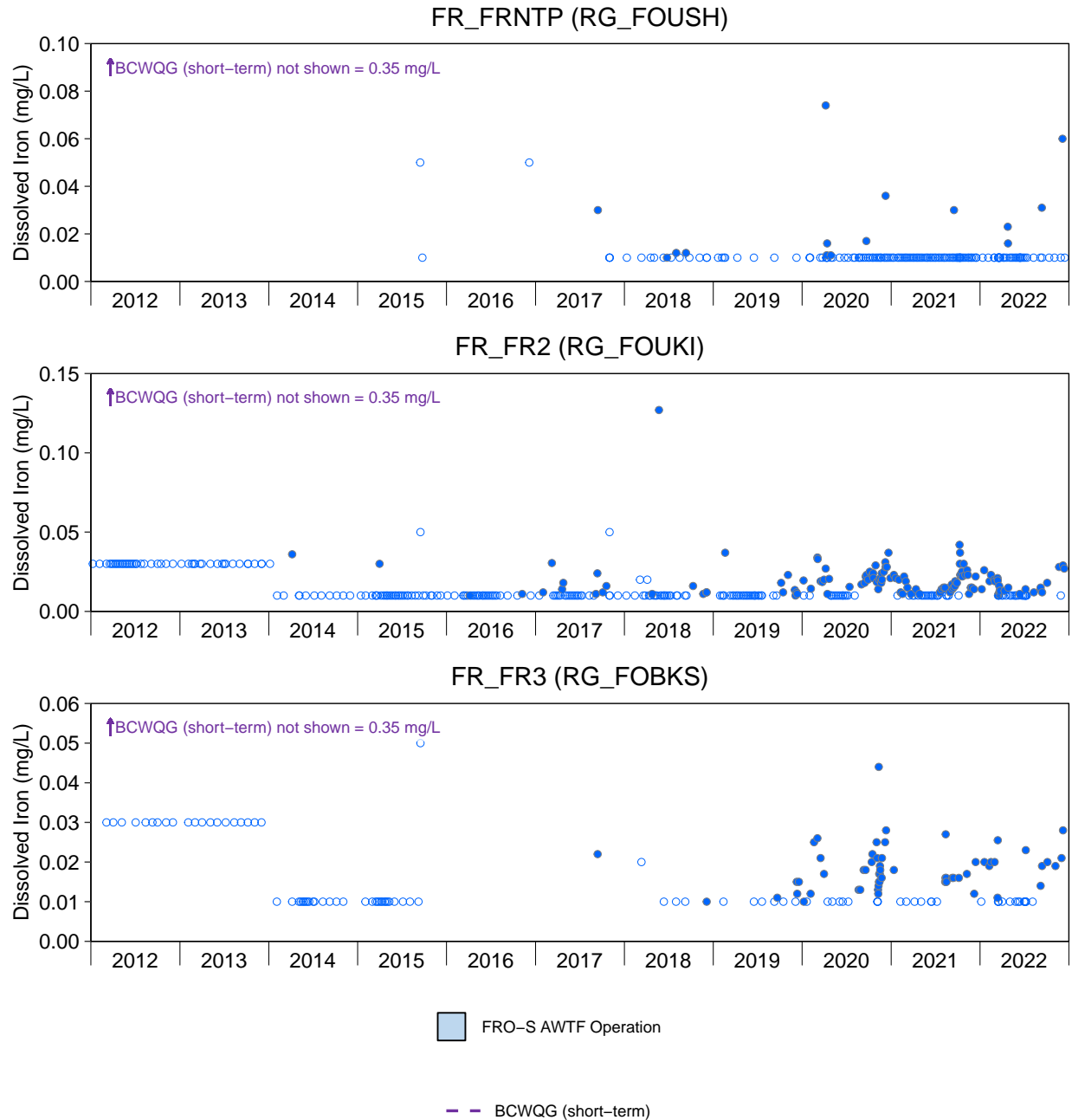


Figure D.8: Time Series Plots for Dissolved Iron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

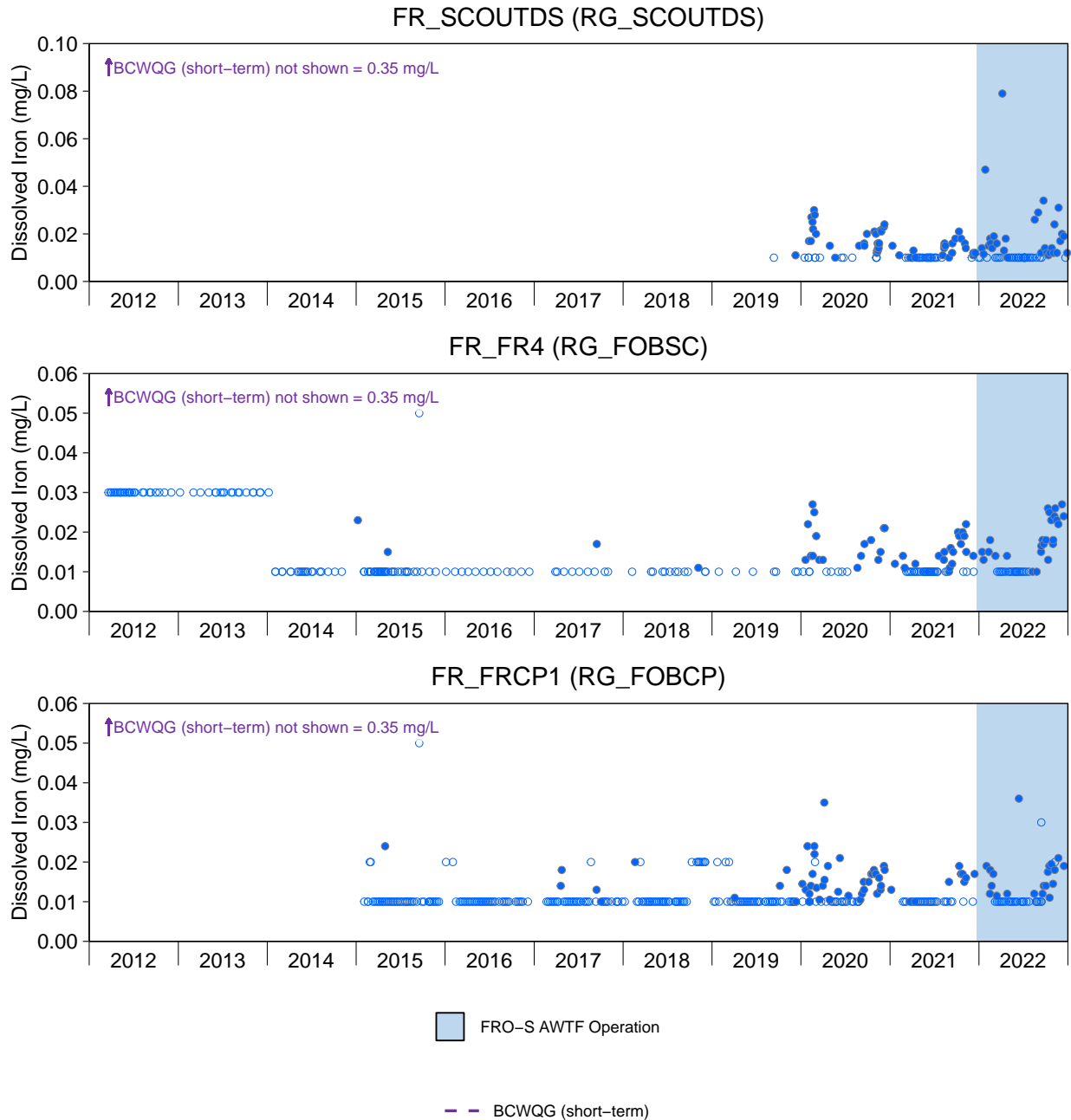


Figure D.8: Time Series Plots for Dissolved Iron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

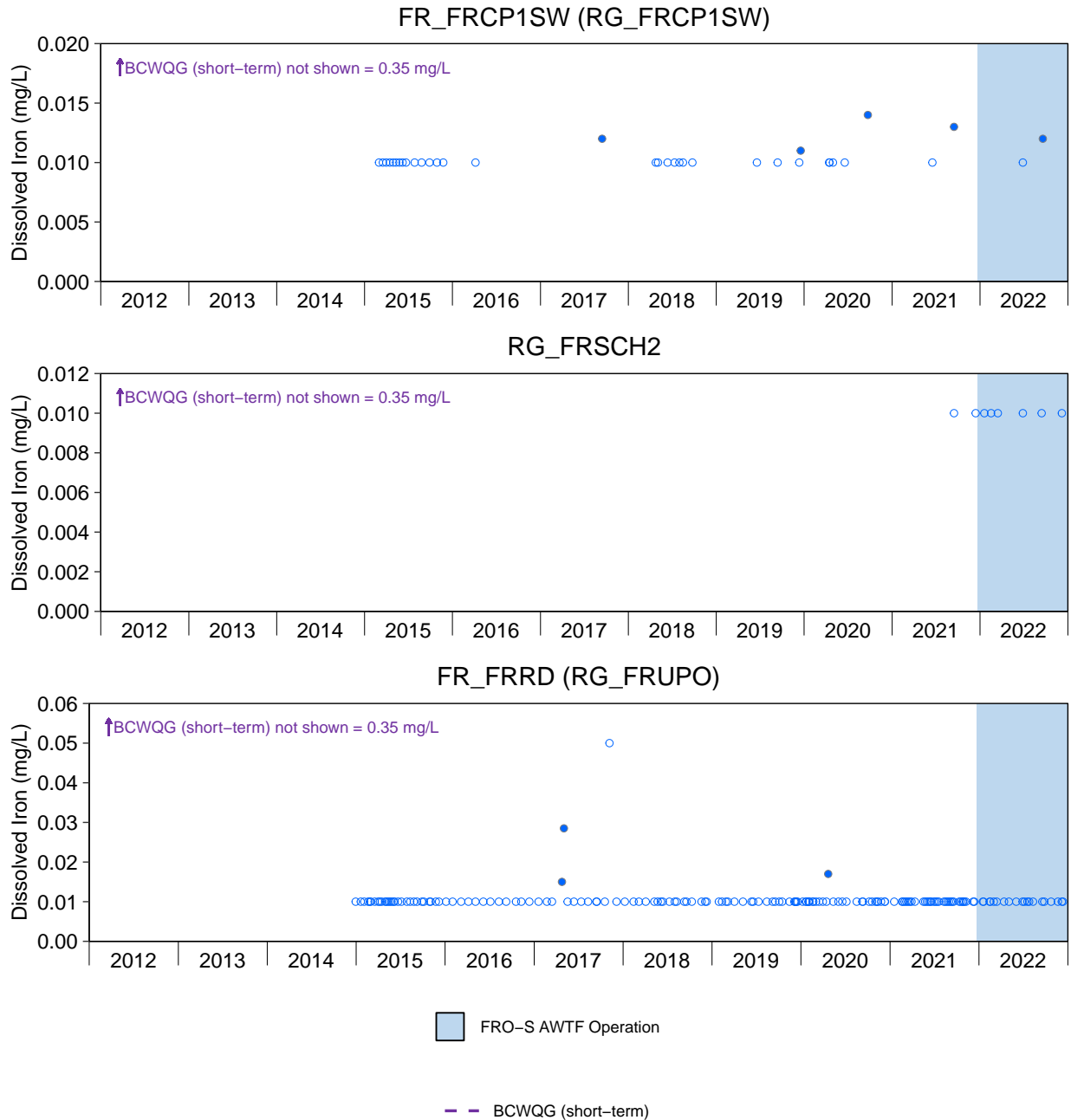


Figure D.8: Time Series Plots for Dissolved Iron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

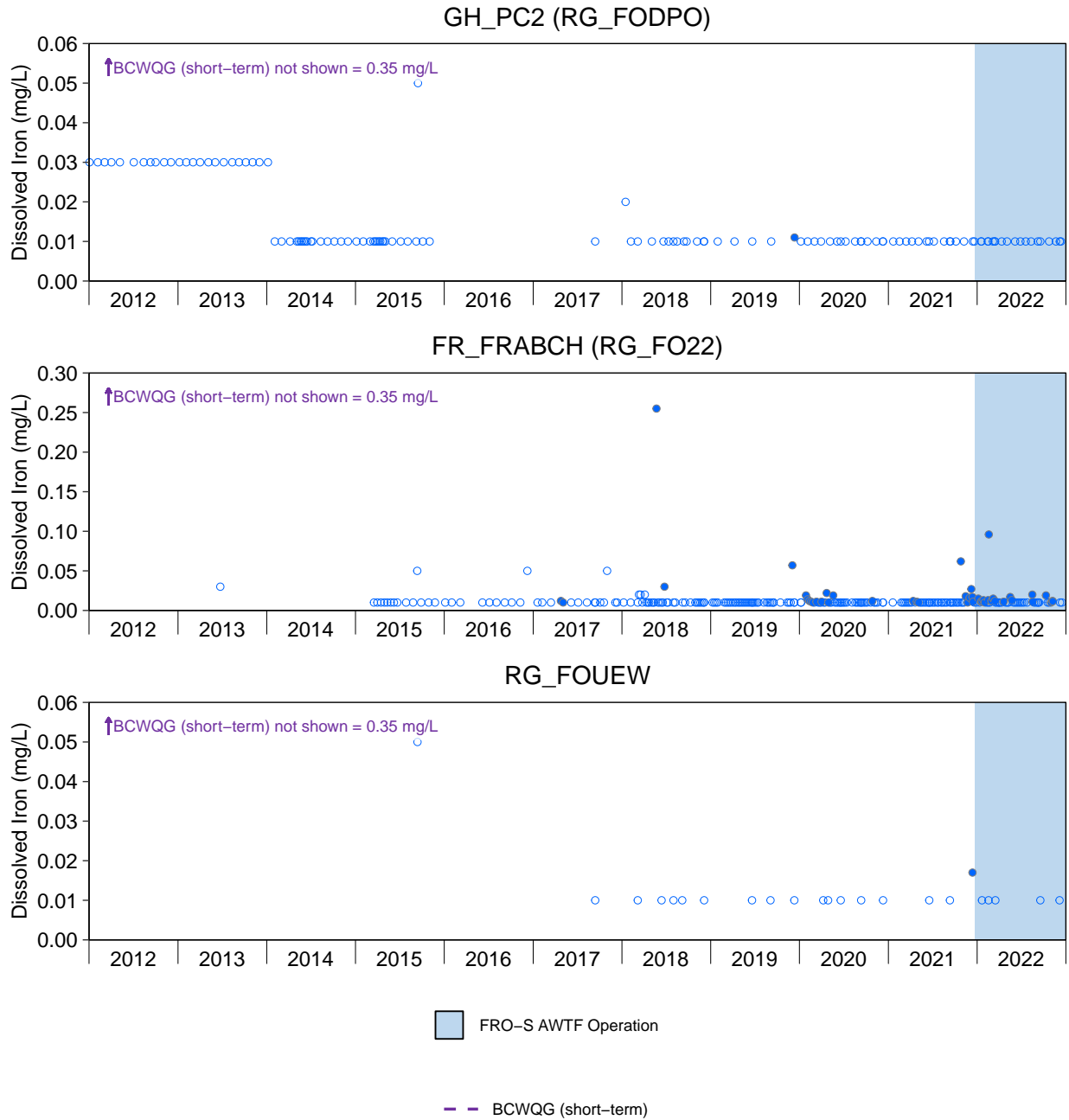


Figure D.8: Time Series Plots for Dissolved Iron Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

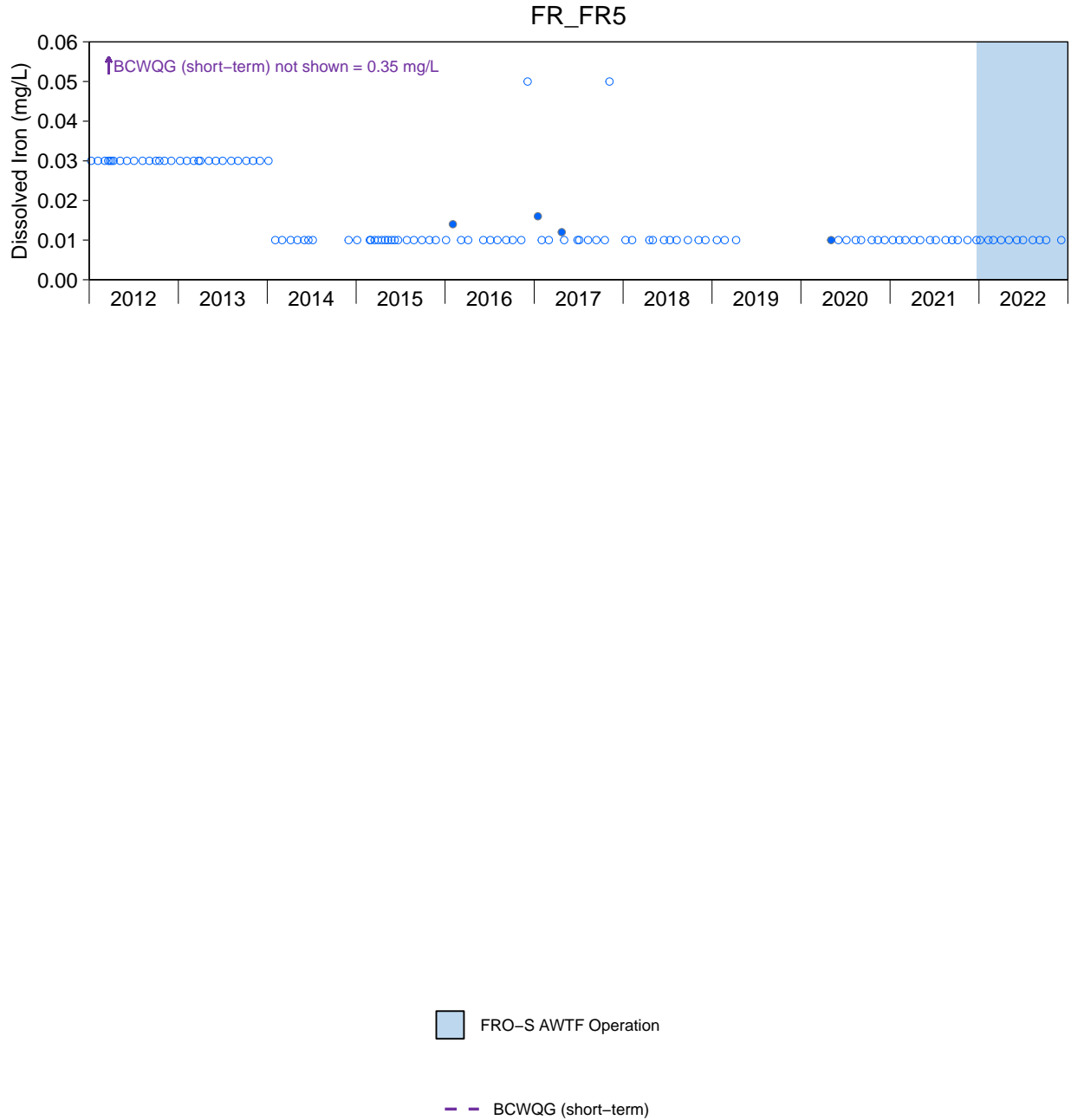


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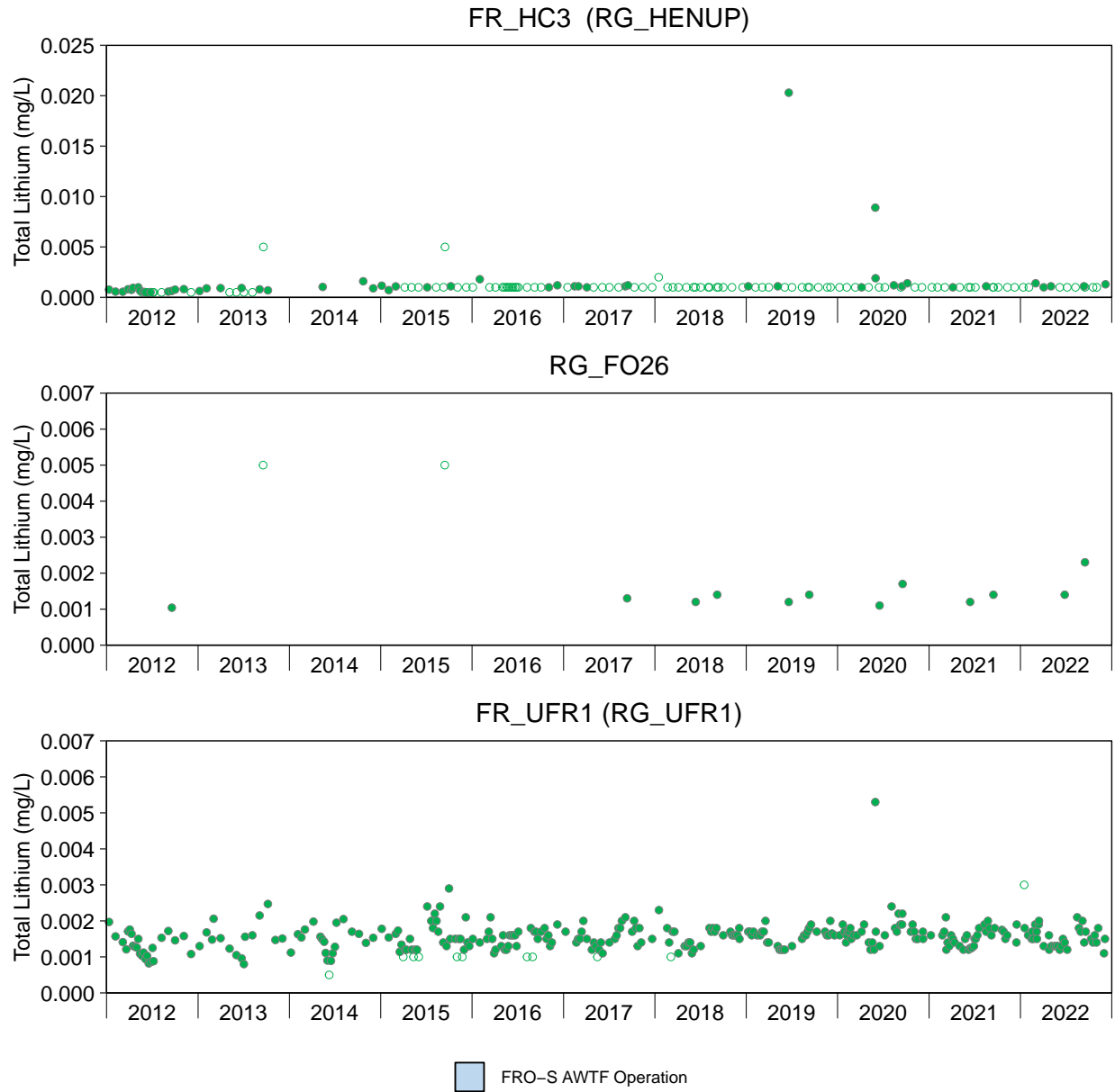


Figure D.9: Time Series Plots for Total Lithium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

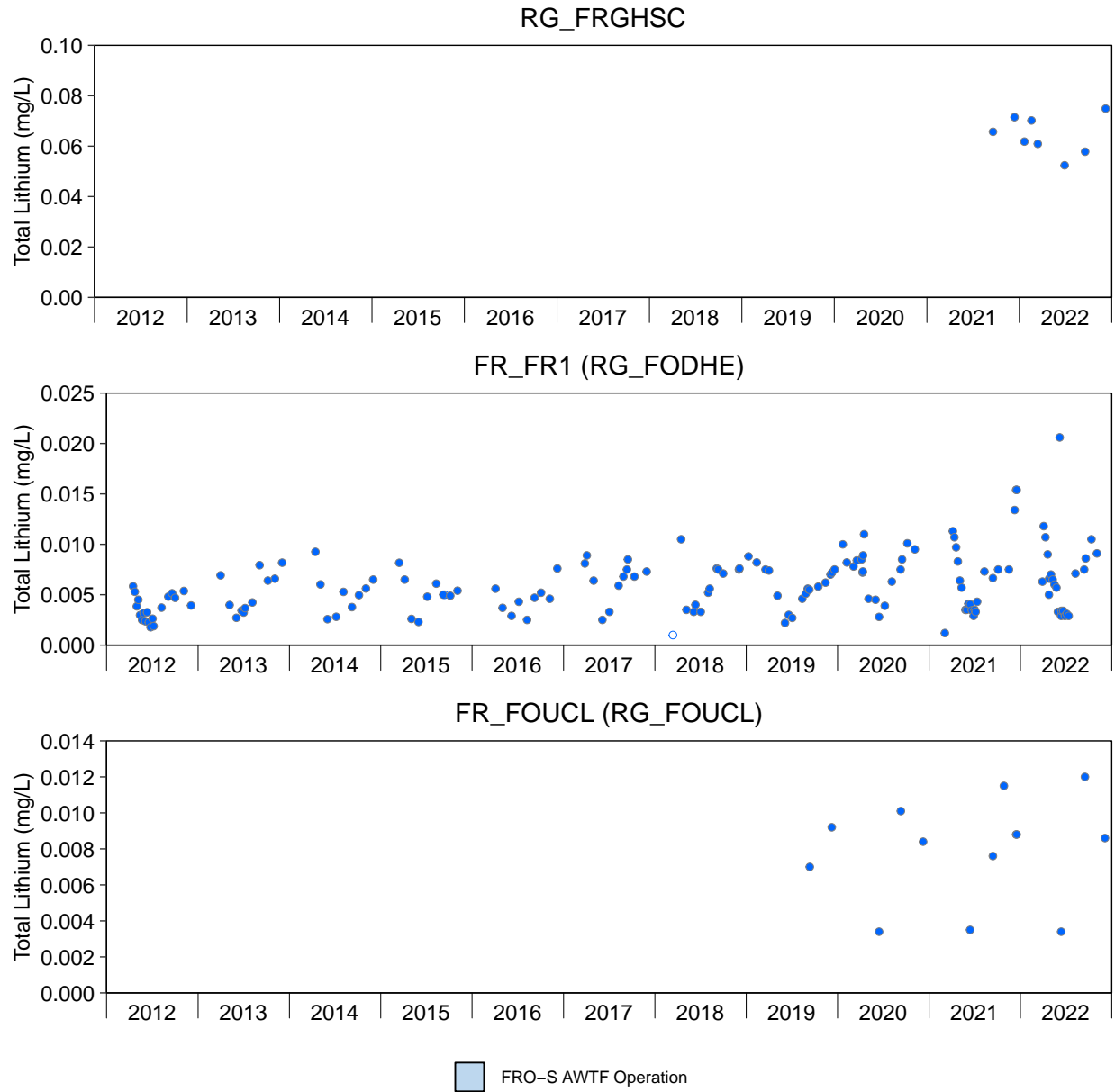


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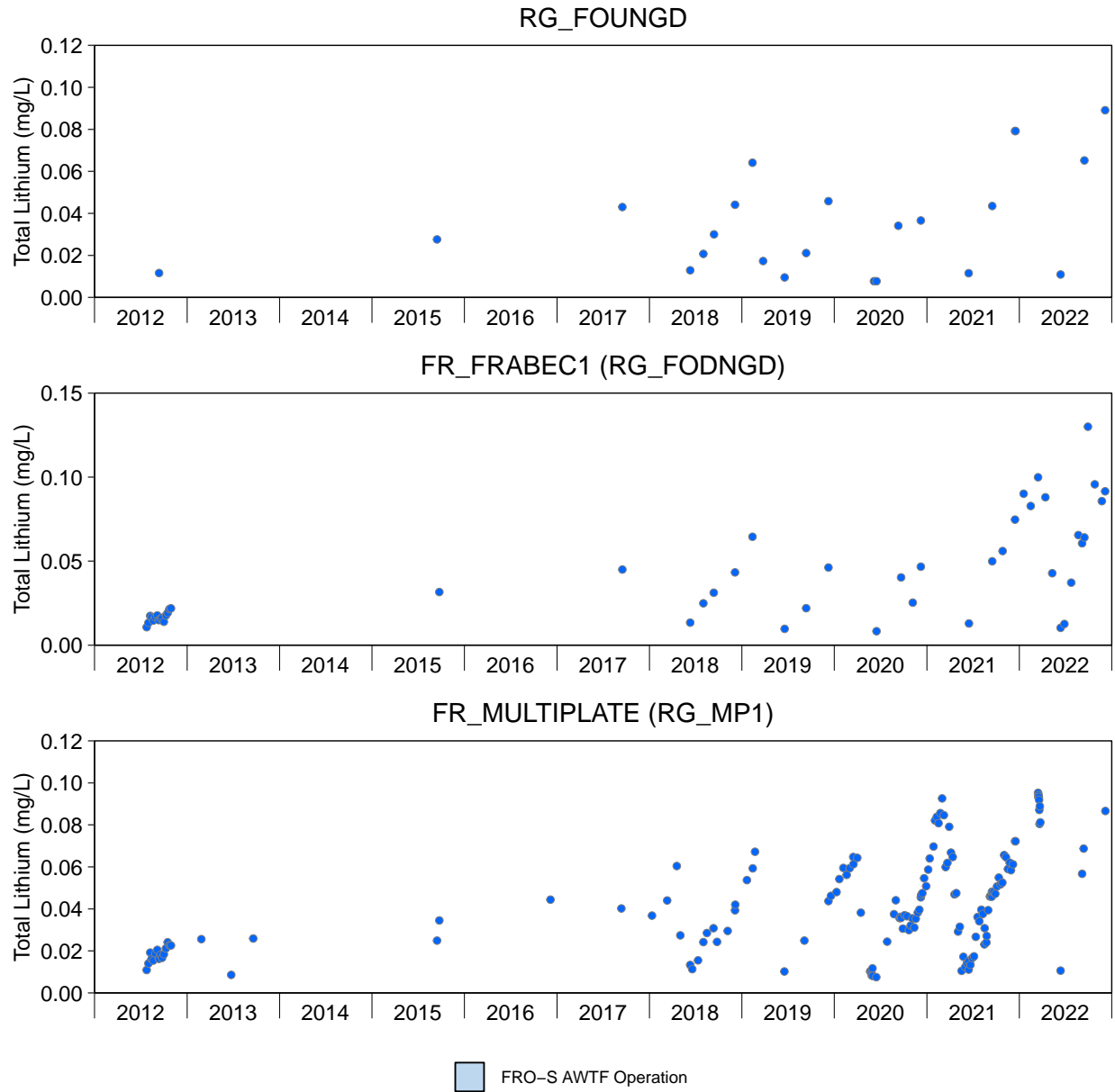


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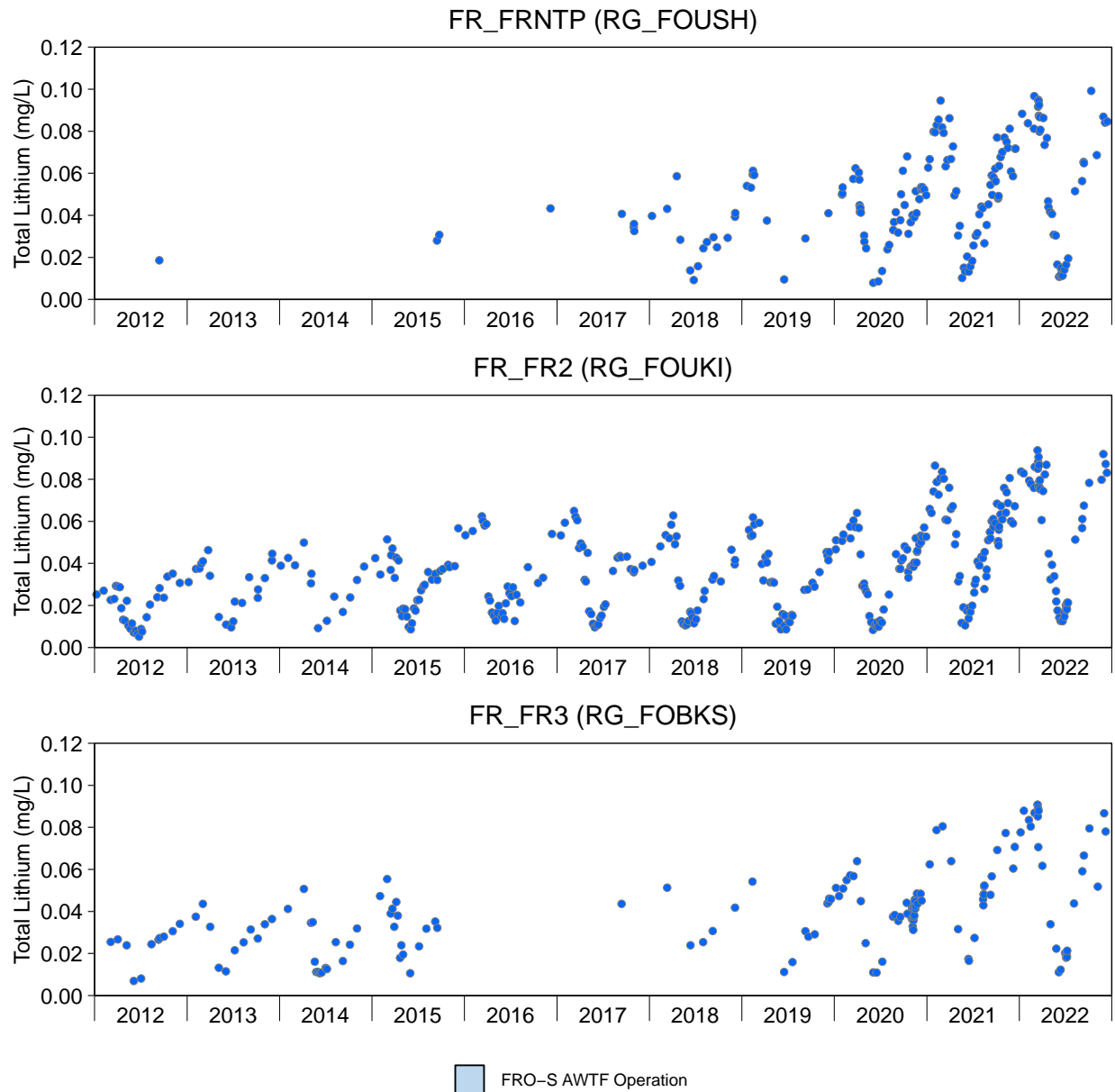


Figure D.9: Time Series Plots for Total Lithium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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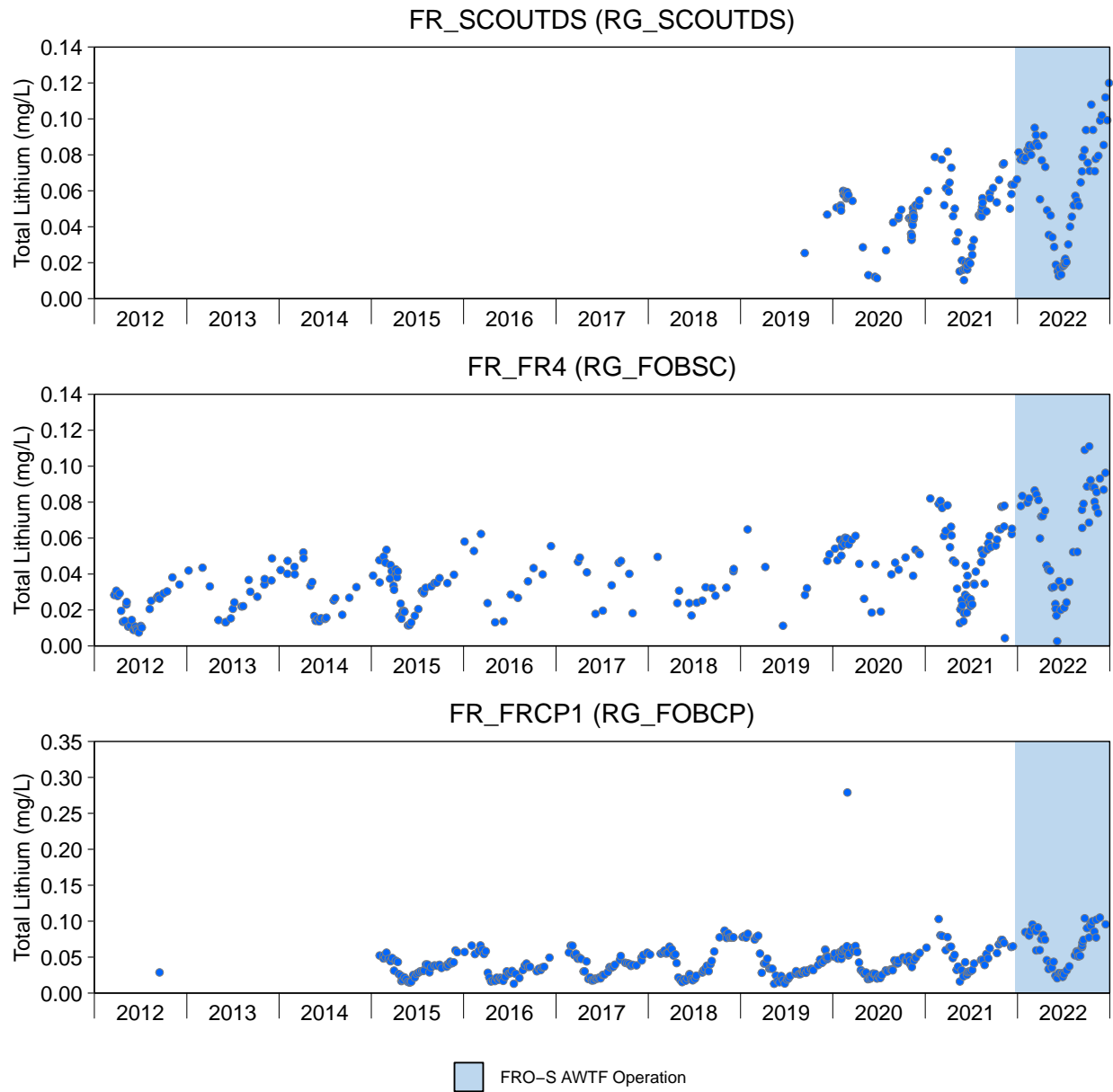


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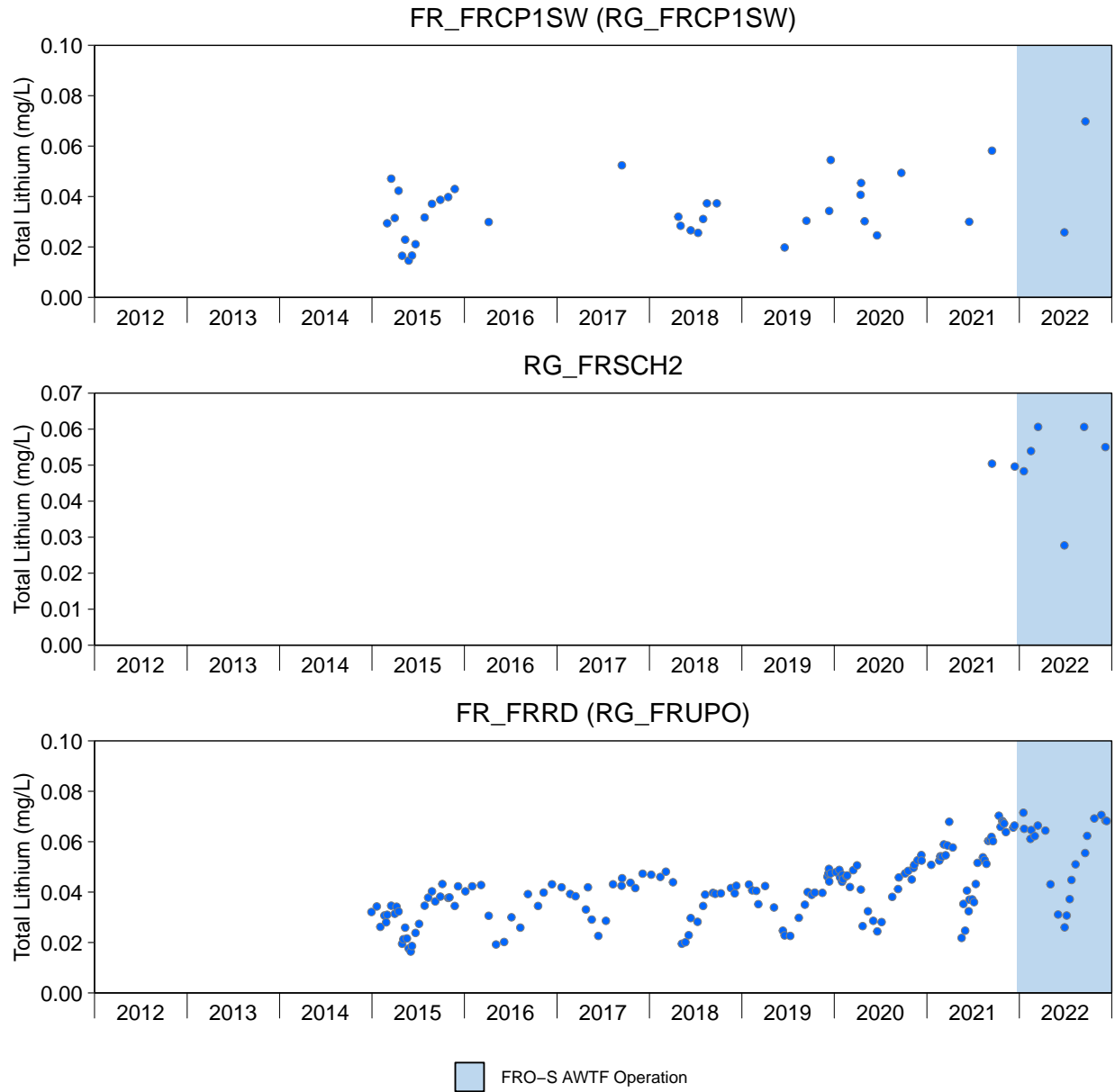


Figure D.9: Time Series Plots for Total Lithium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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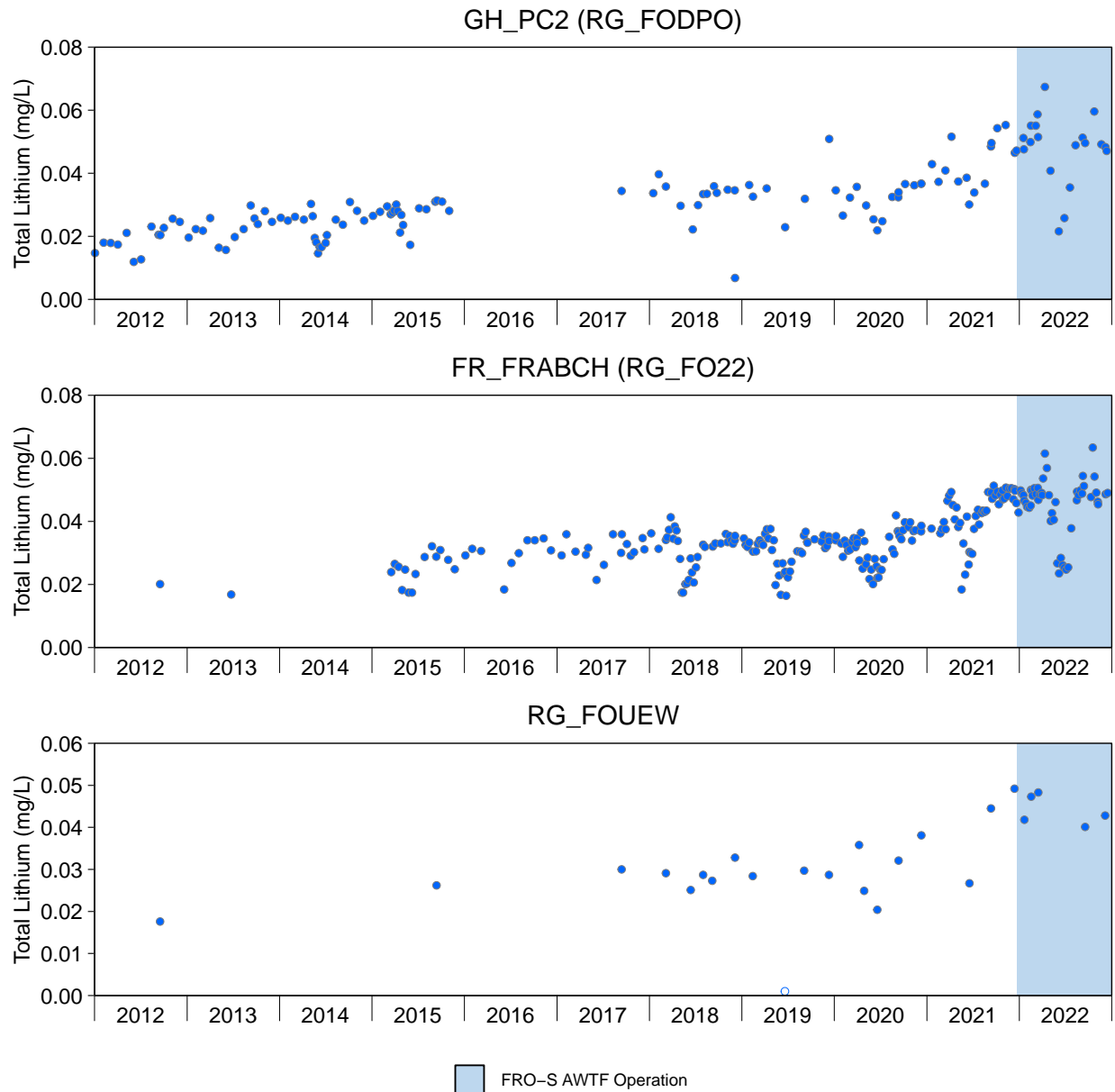


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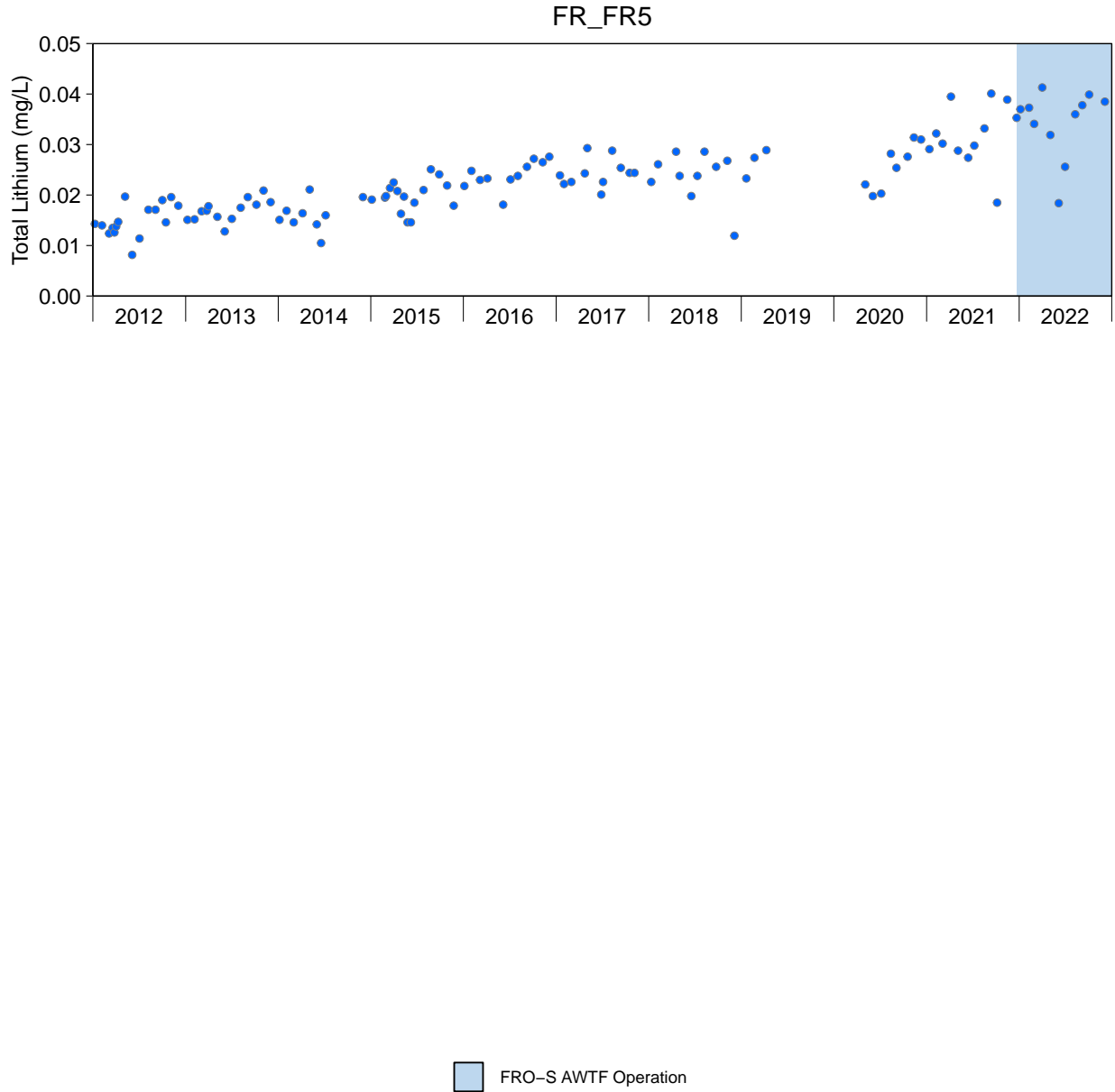


Figure D.9: Time Series Plots for Total Lithium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

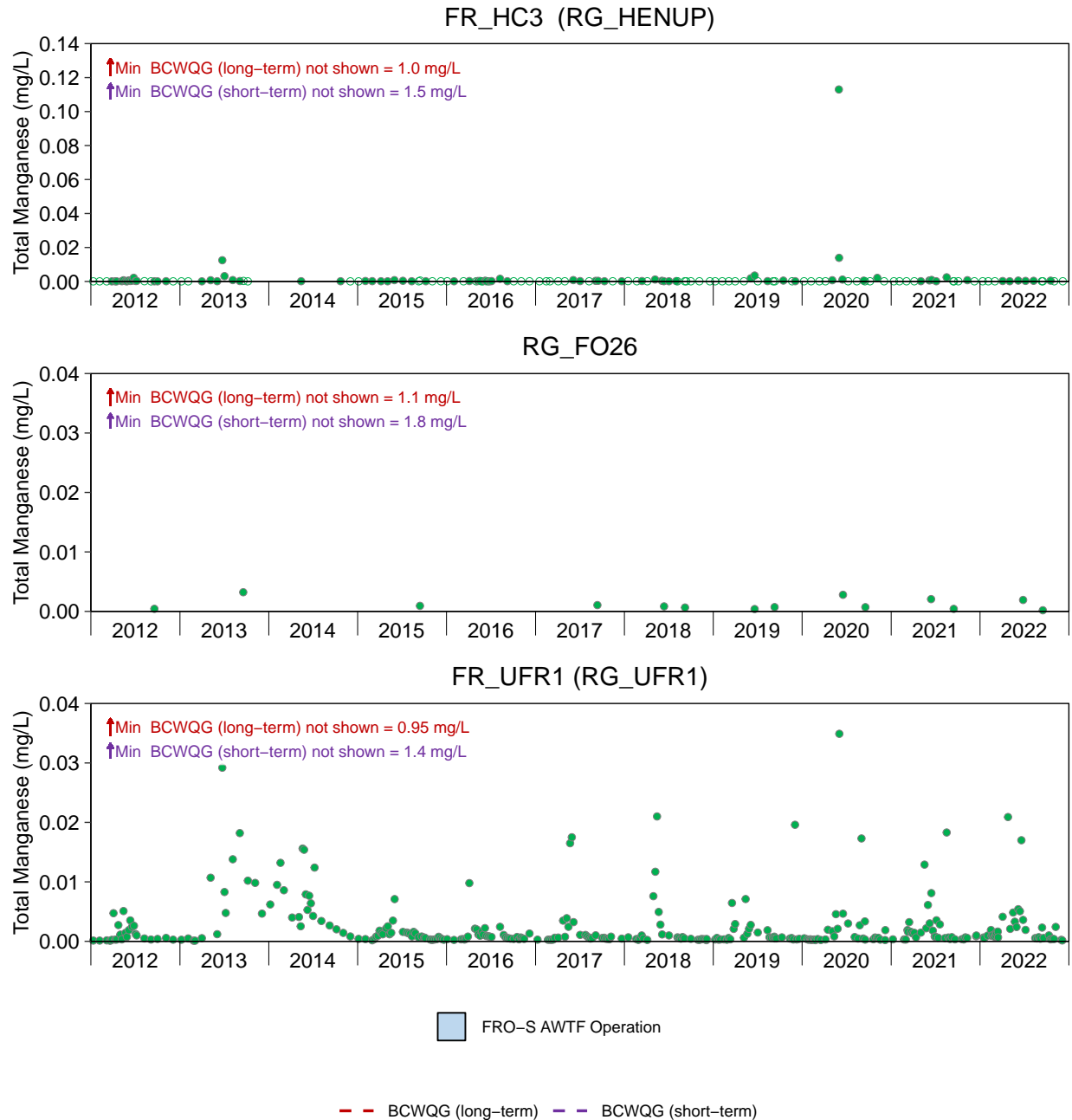


Figure D.10: Time Series Plots for Total Manganese Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

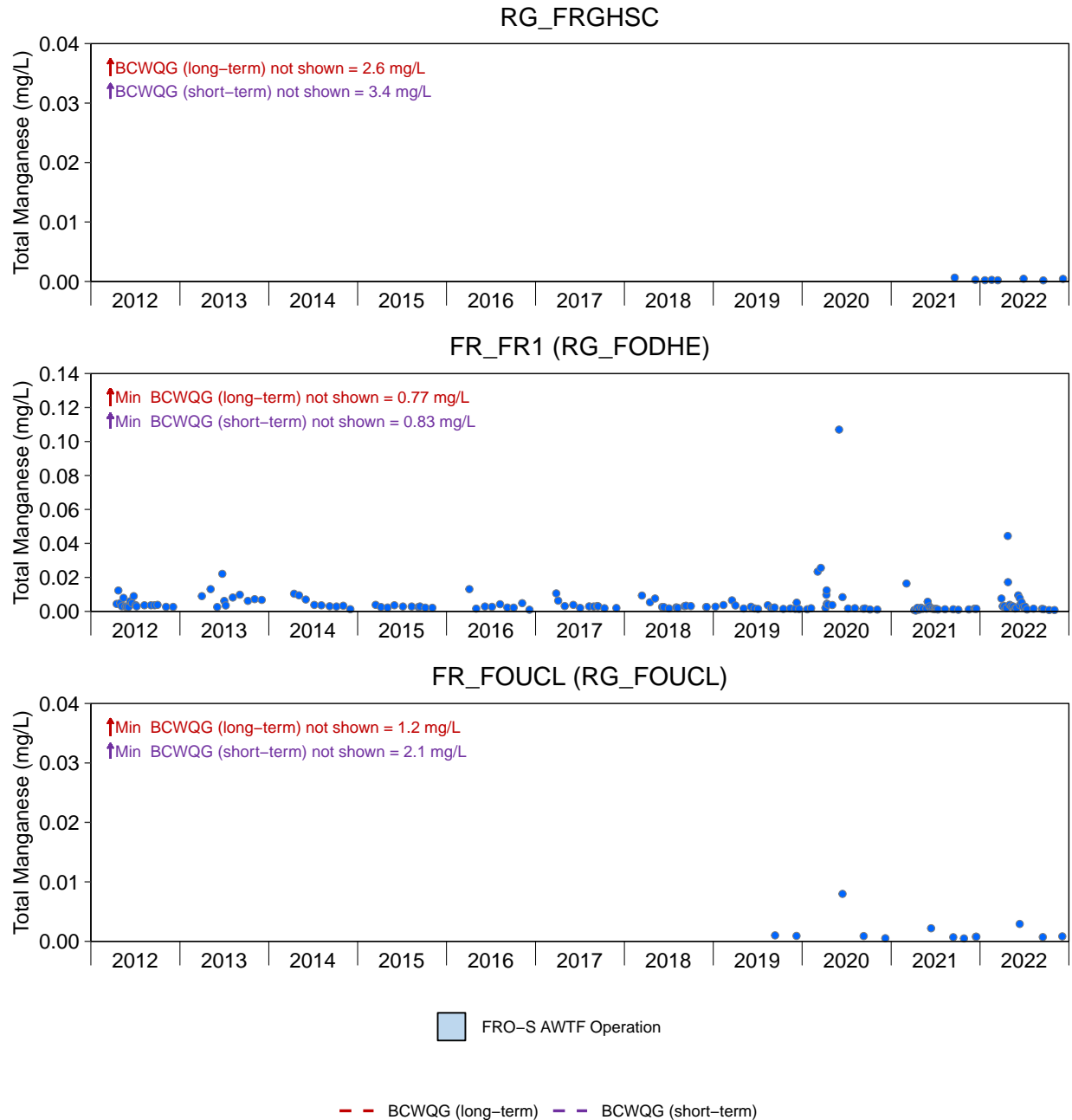


Figure D.10: Time Series Plots for Total Manganese Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

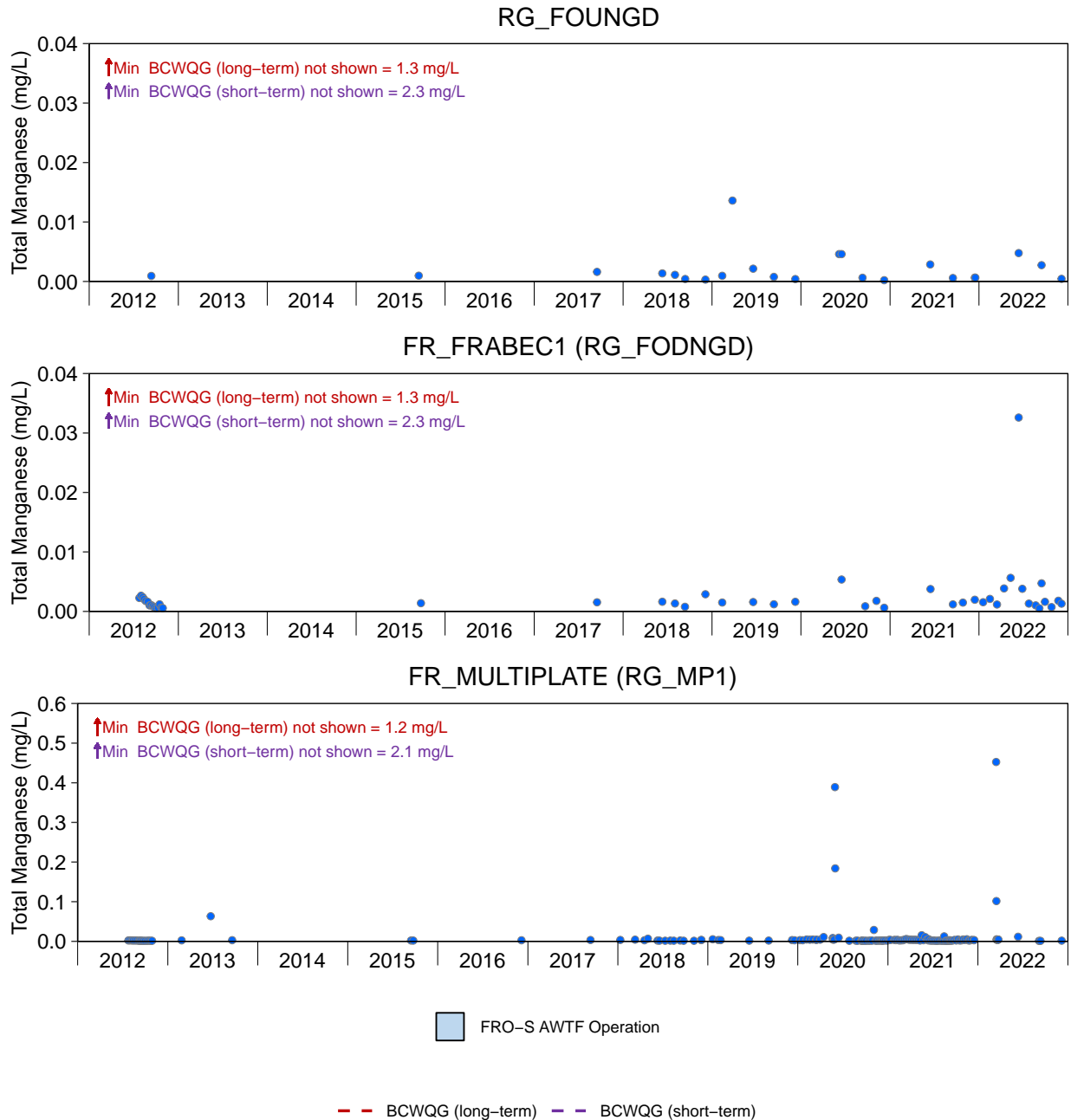


Figure D.10: Time Series Plots for Total Manganese Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

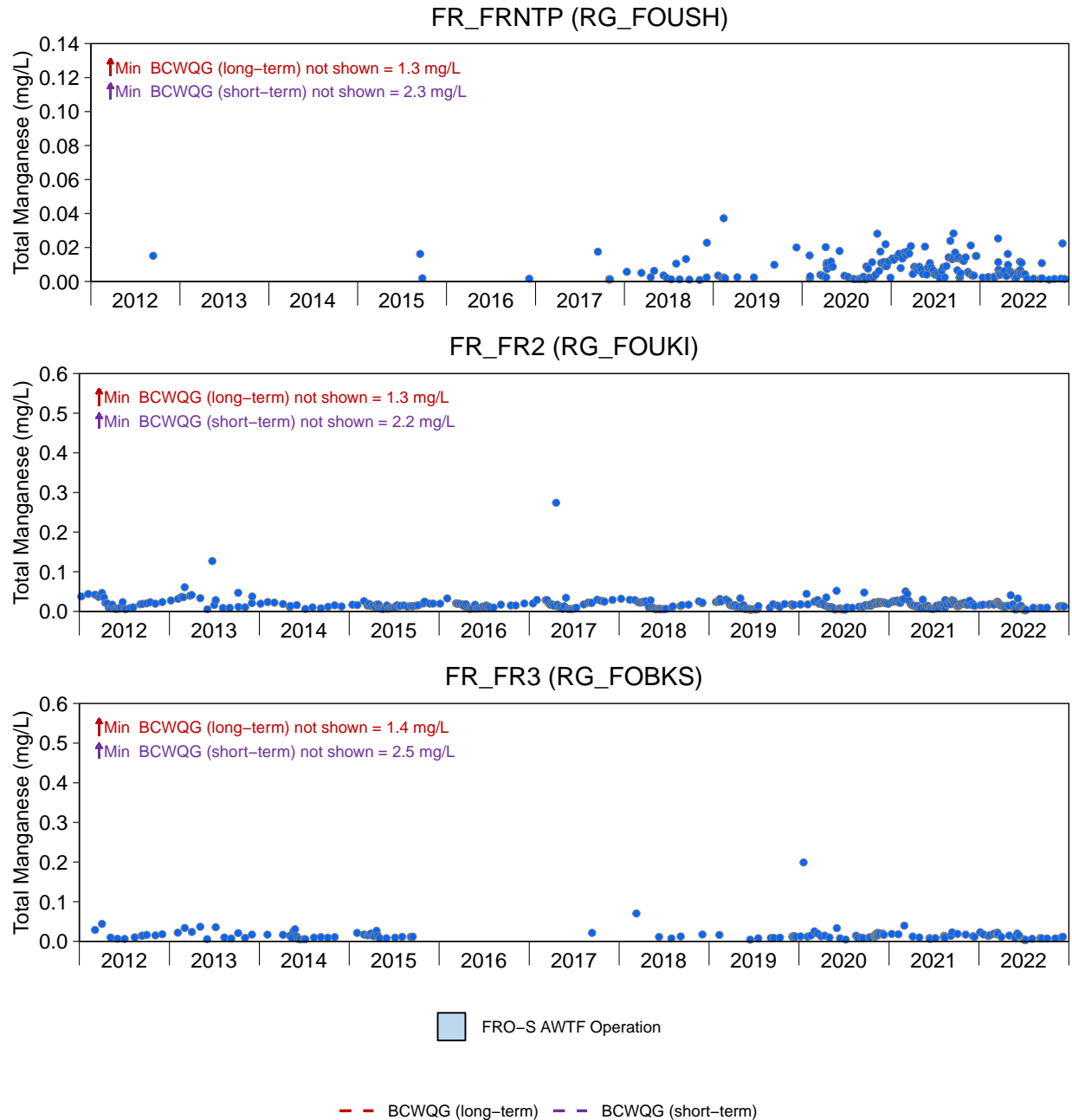


Figure D.10: Time Series Plots for Total Manganese Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

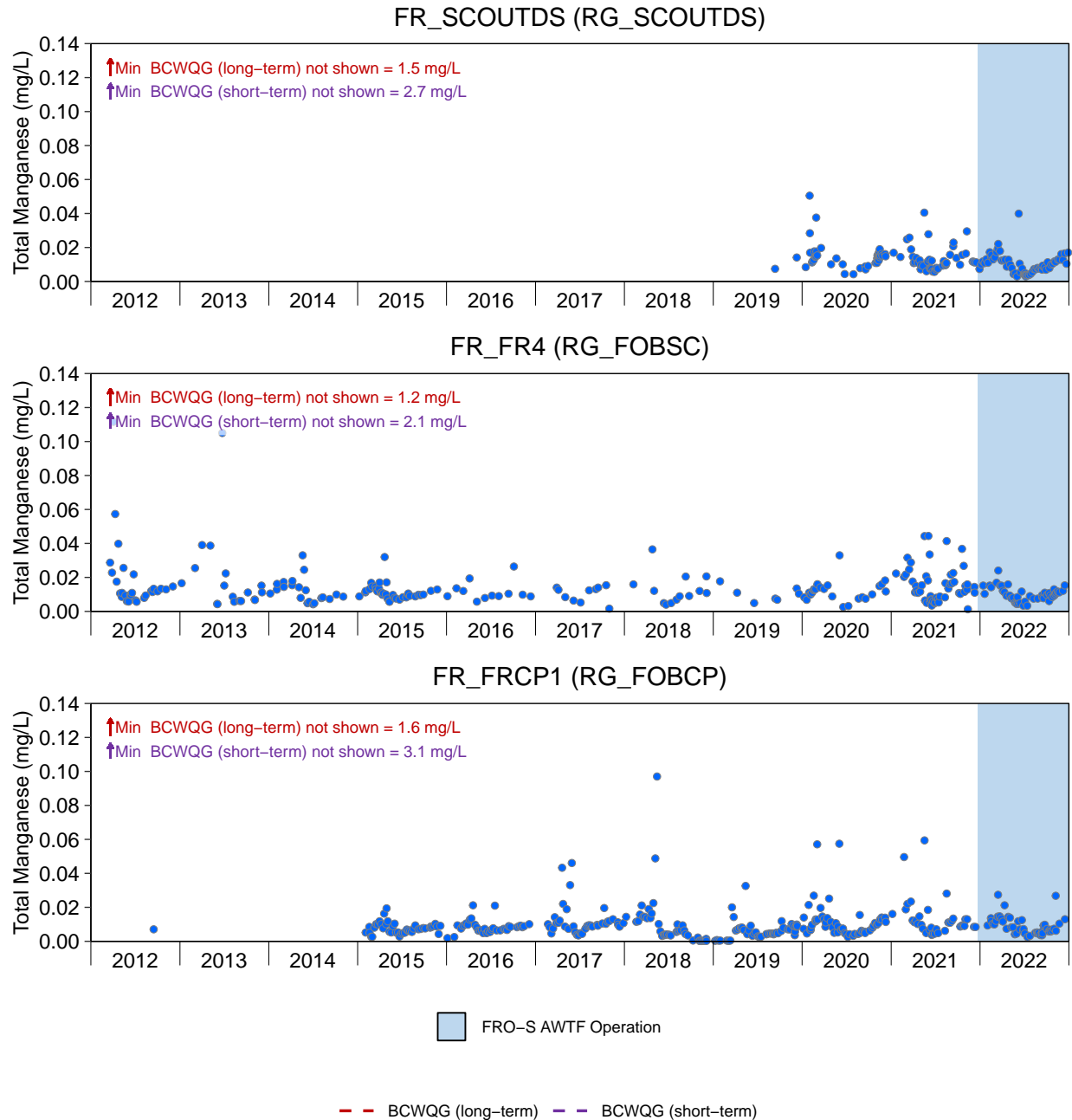


Figure D.10: Time Series Plots for Total Manganese Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

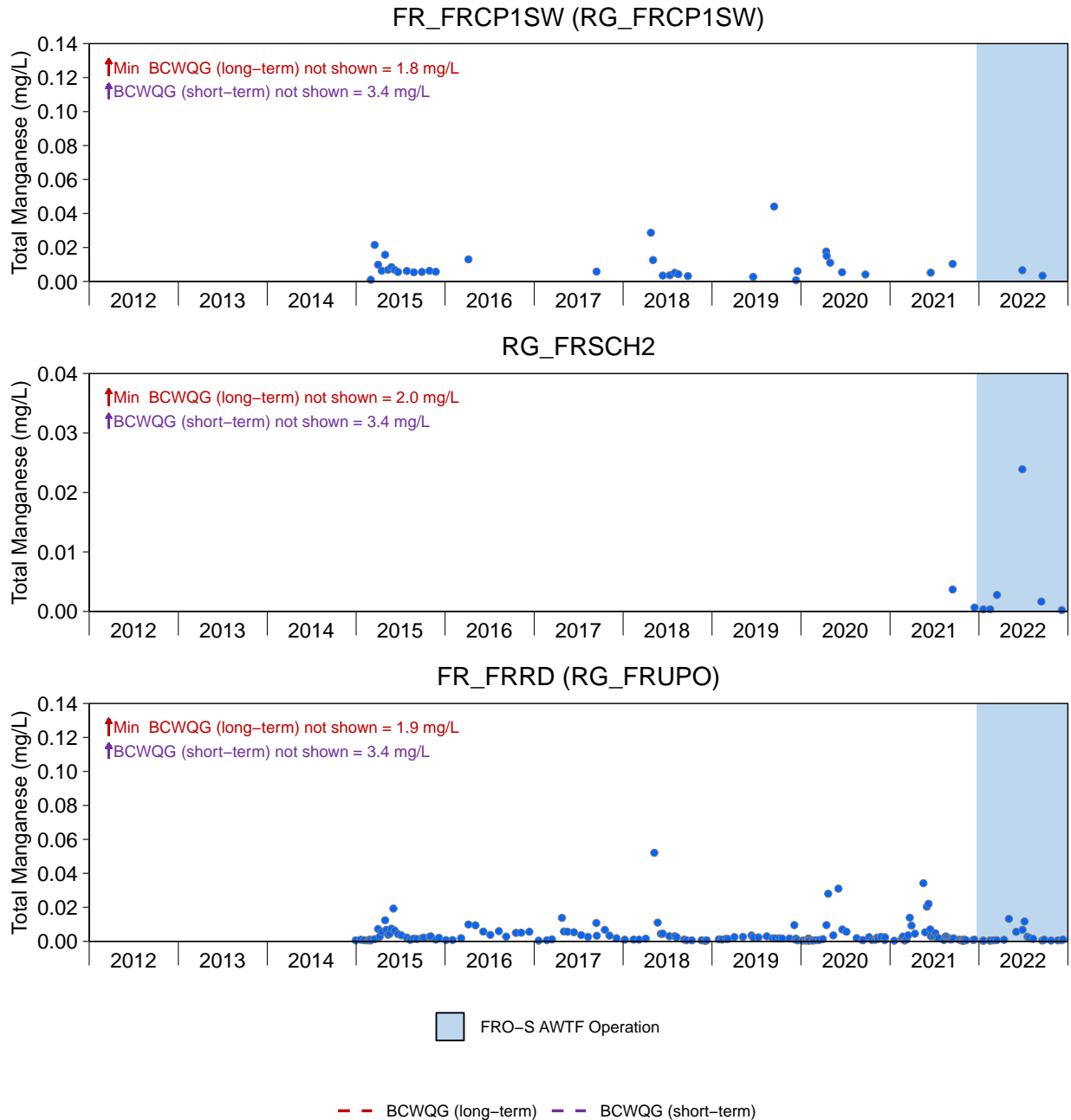


Figure D.10: Time Series Plots for Total Manganese Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

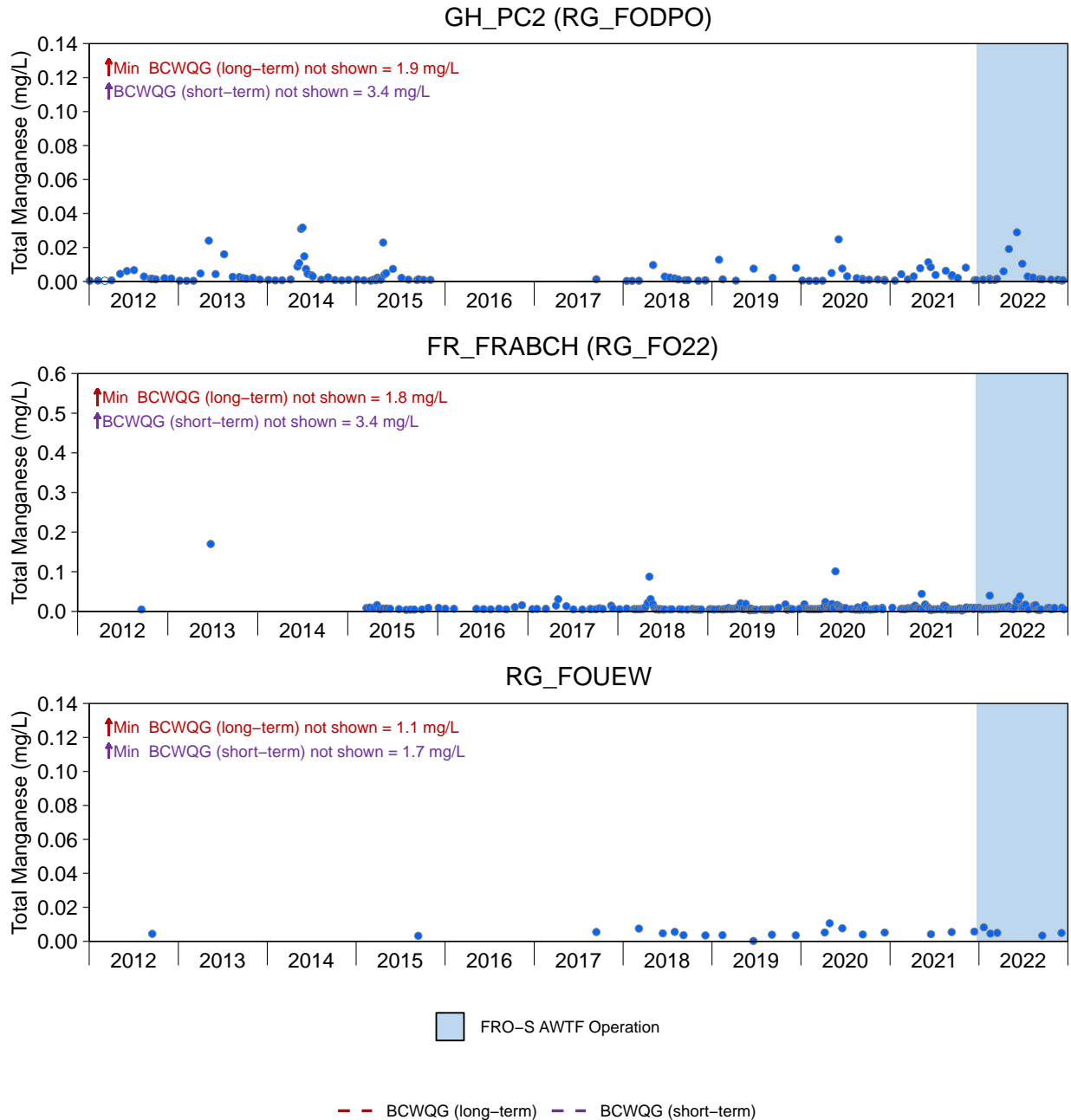
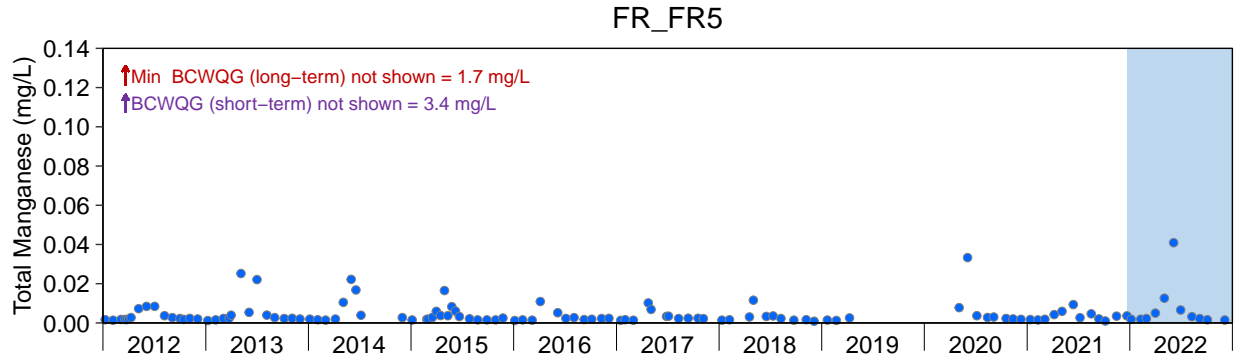


Figure D.10: Time Series Plots for Total Manganese Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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



□ FRO-S AWTF Operation

--- BCWQG (long-term) - - - BCWQG (short-term)

Figure D.10: Time Series Plots for Total Manganese Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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



Figure D.11: Time Series Plots for Total Molybdenum Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

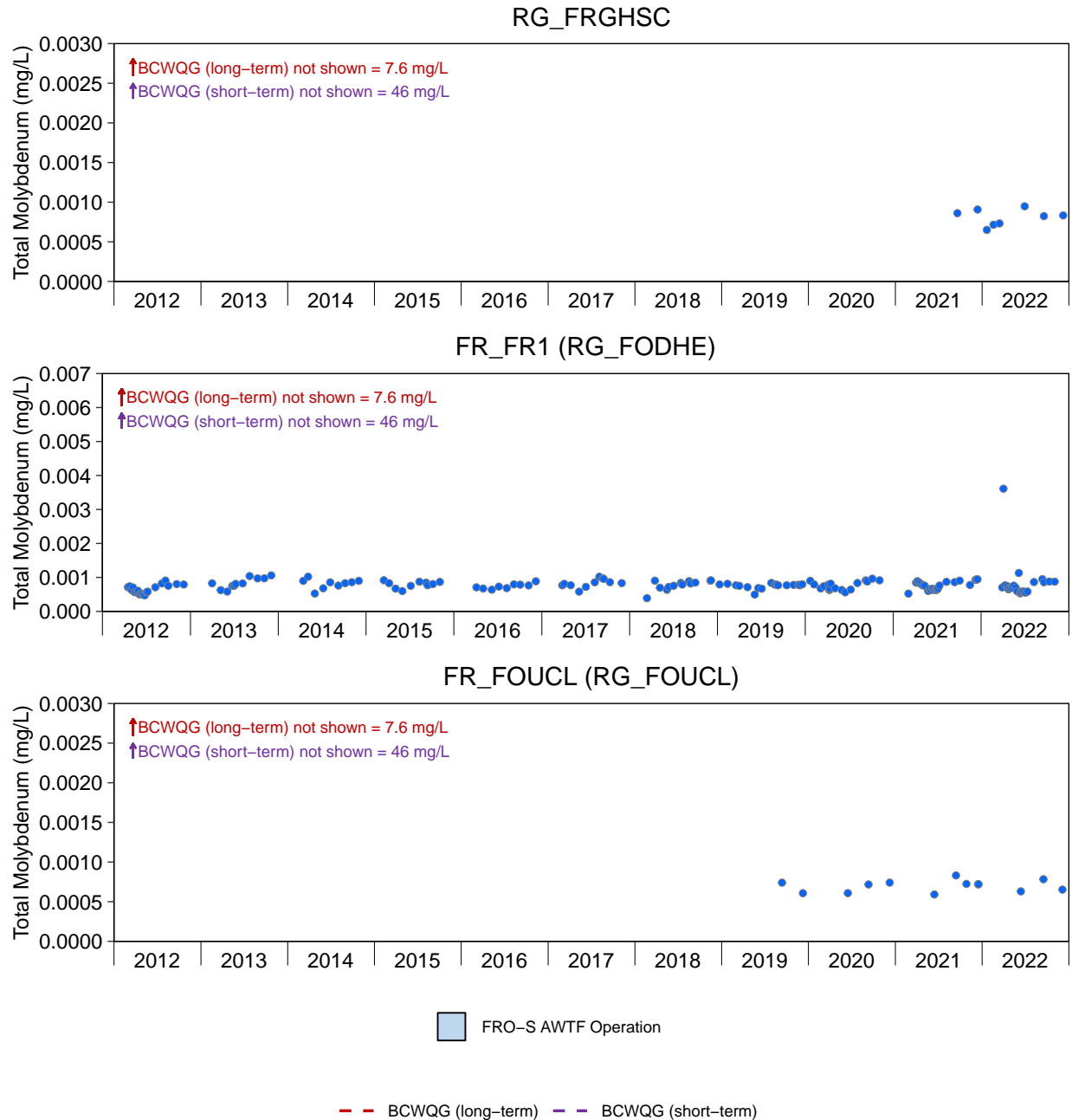


Figure D.11: Time Series Plots for Total Molybdenum Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

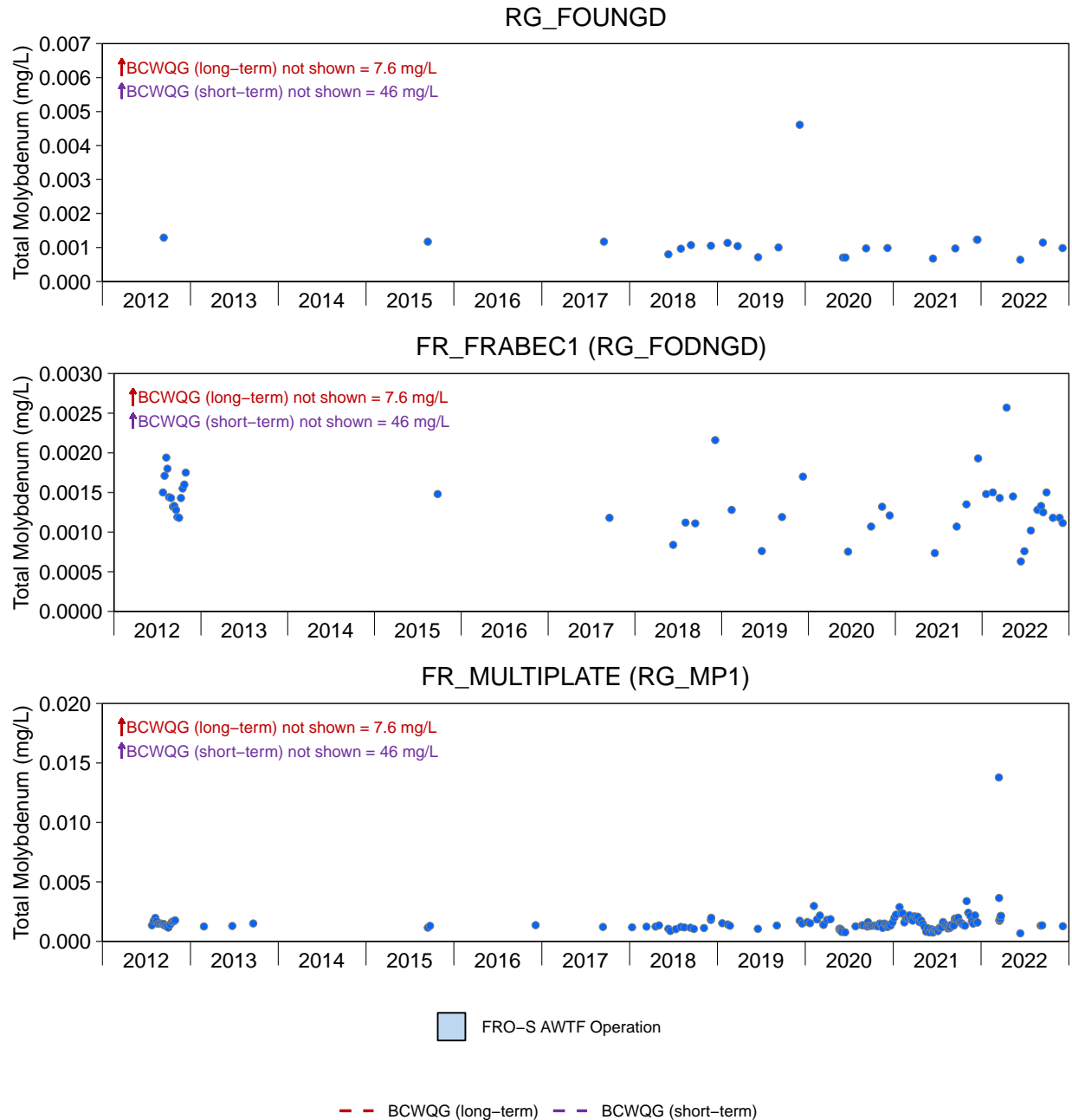


Figure D.11: Time Series Plots for Total Molybdenum Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

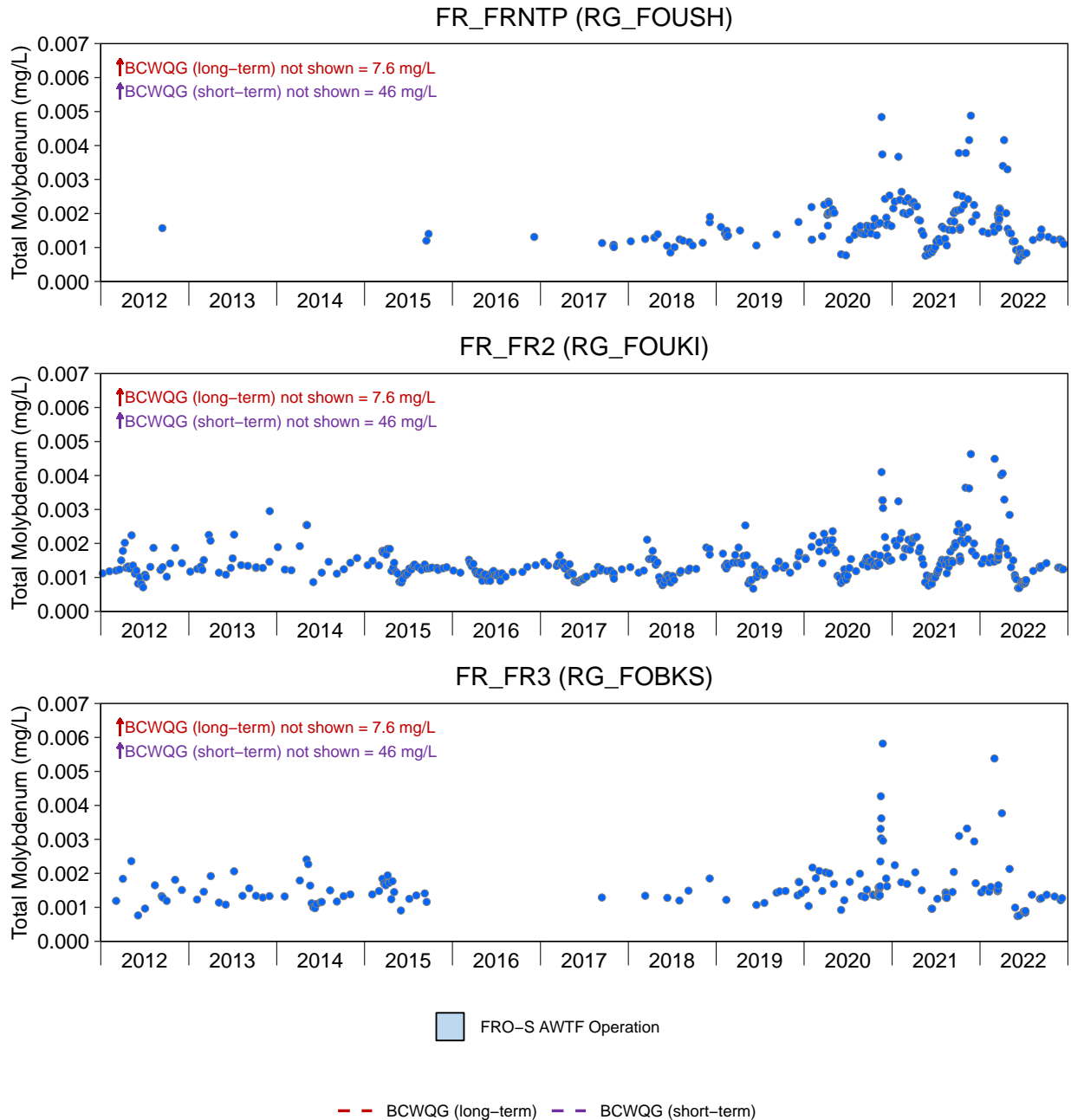


Figure D.11: Time Series Plots for Total Molybdenum Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

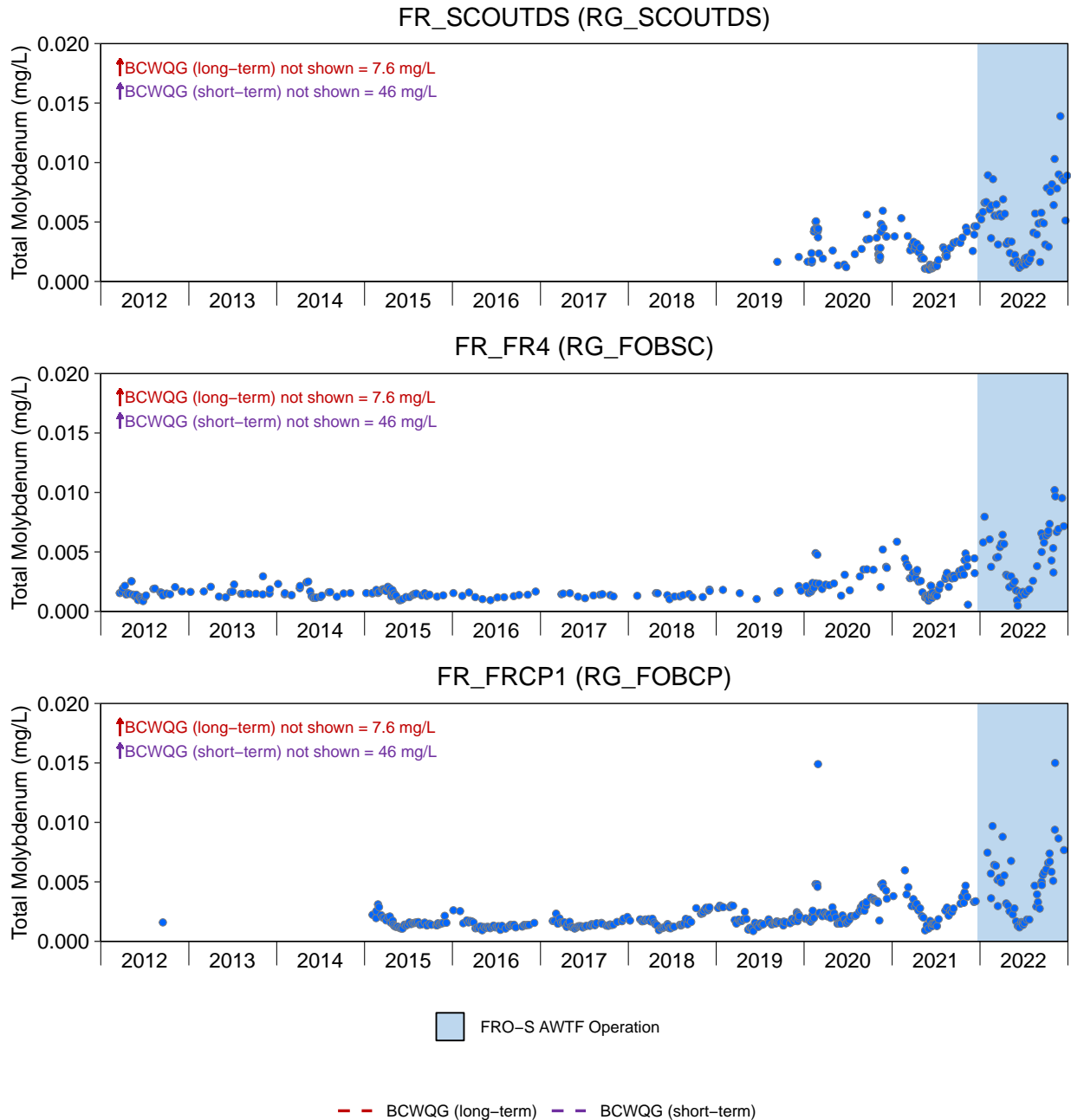


Figure D.11: Time Series Plots for Total Molybdenum Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

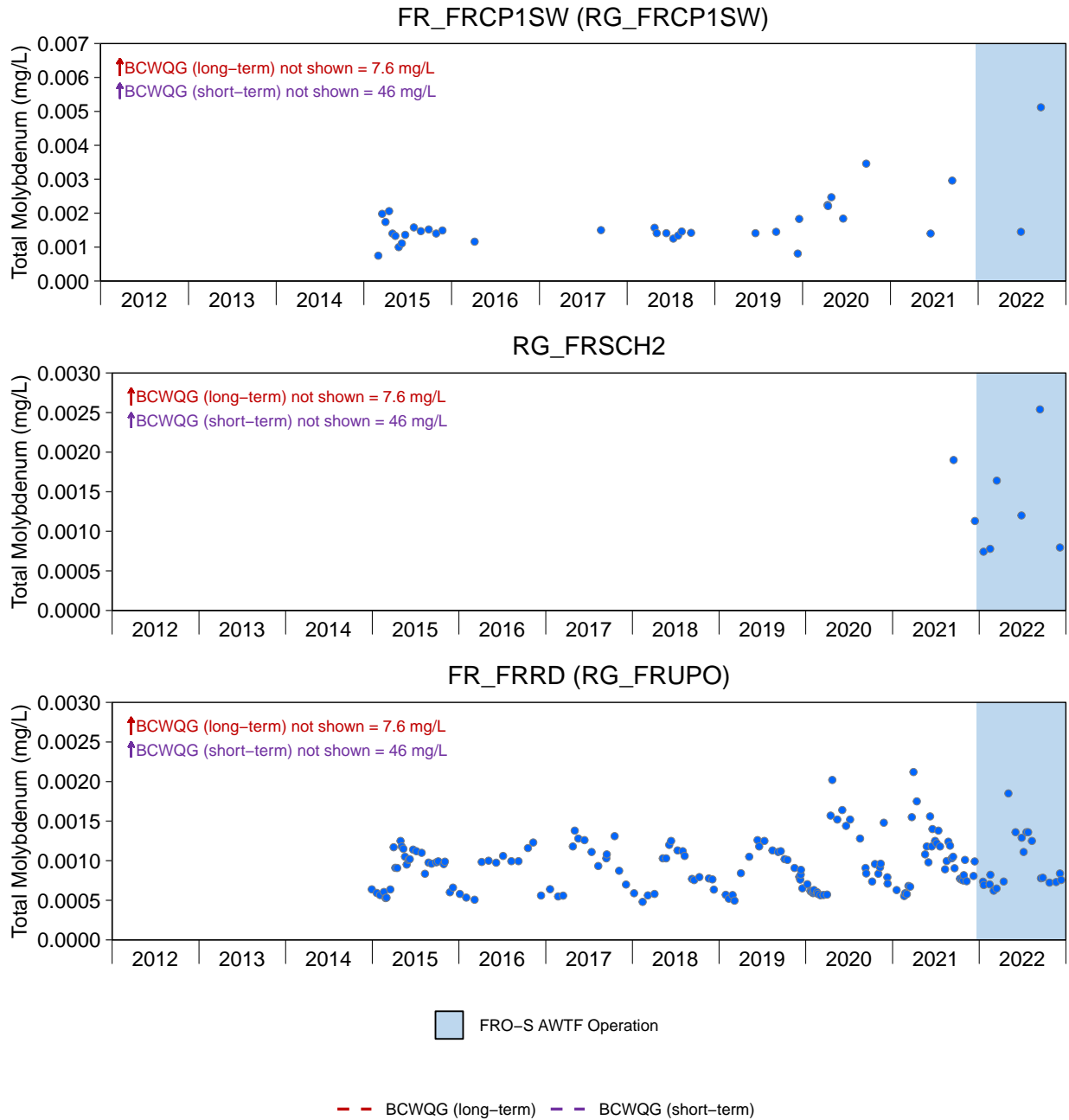


Figure D.11: Time Series Plots for Total Molybdenum Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

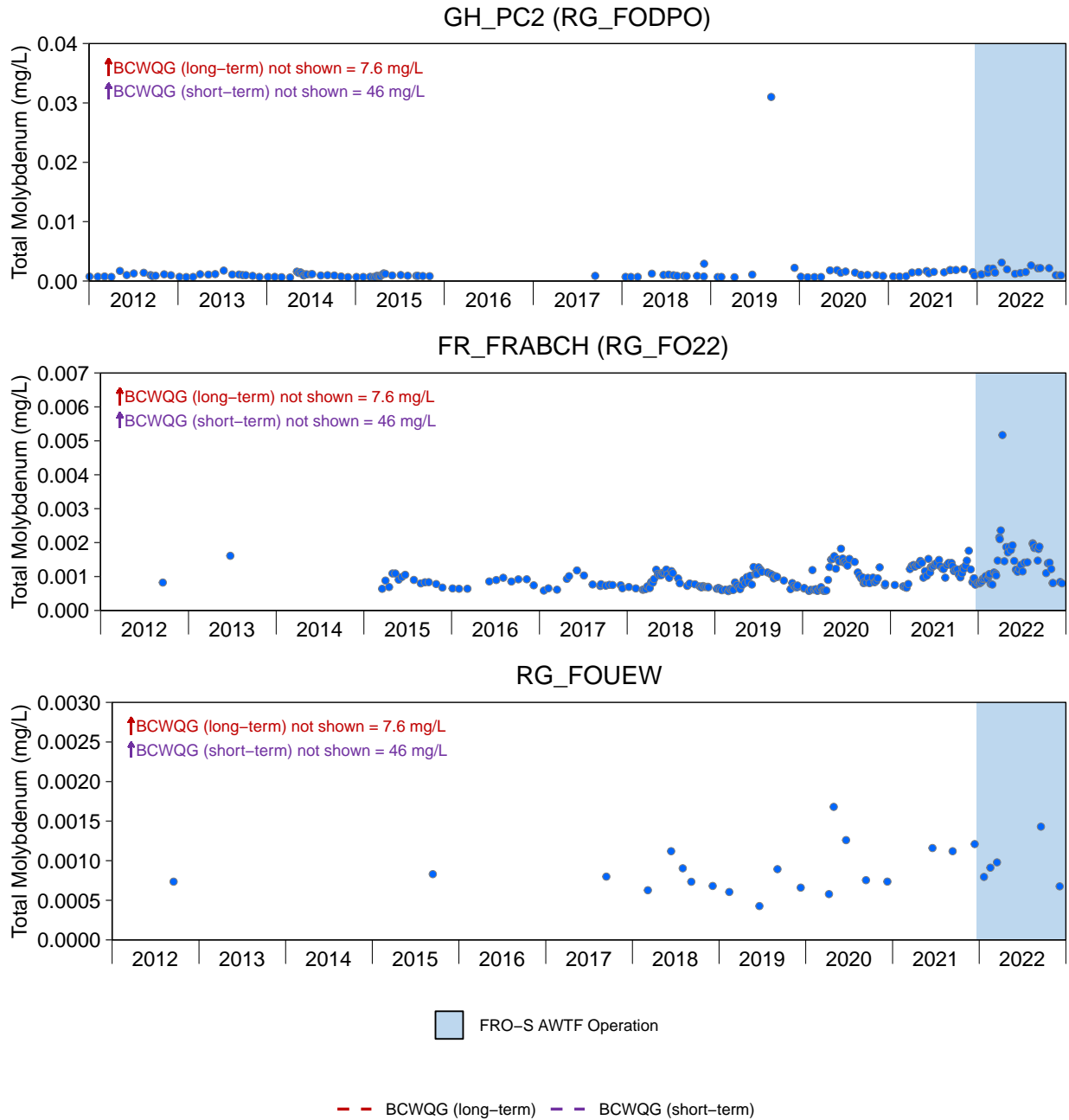
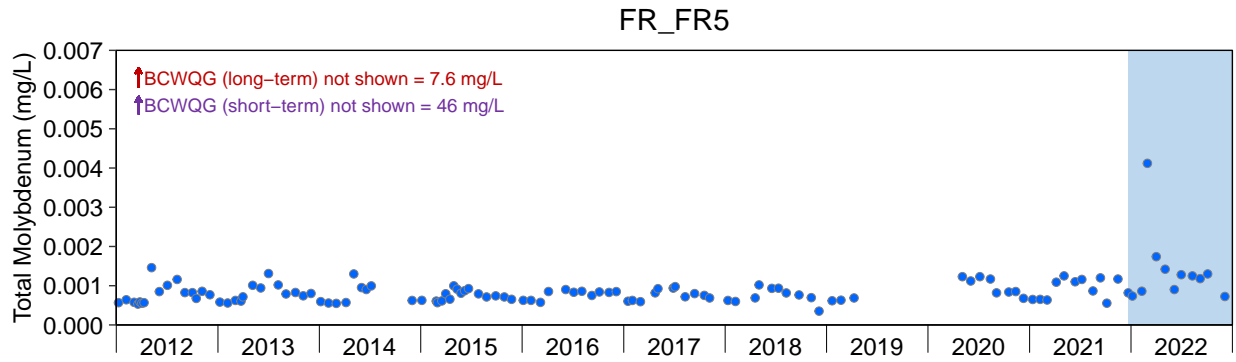


Figure D.11: Time Series Plots for Total Molybdenum Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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



□ FRO-S AWTF Operation

--- BCWQG (long-term) --- BCWQG (short-term)

Figure D.11: Time Series Plots for Total Molybdenum Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

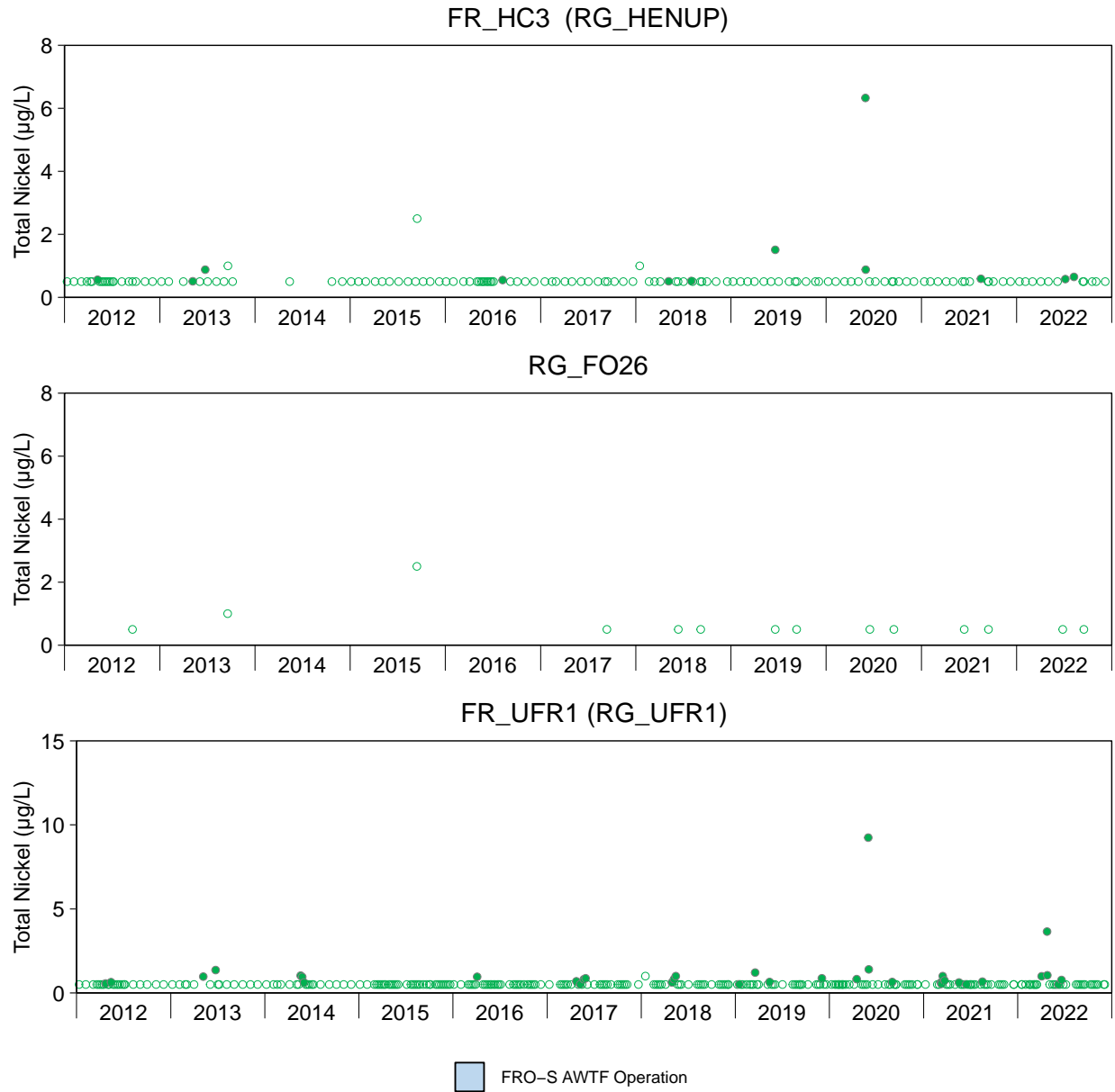


Figure D.12: Time Series Plots for Total Nickel Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

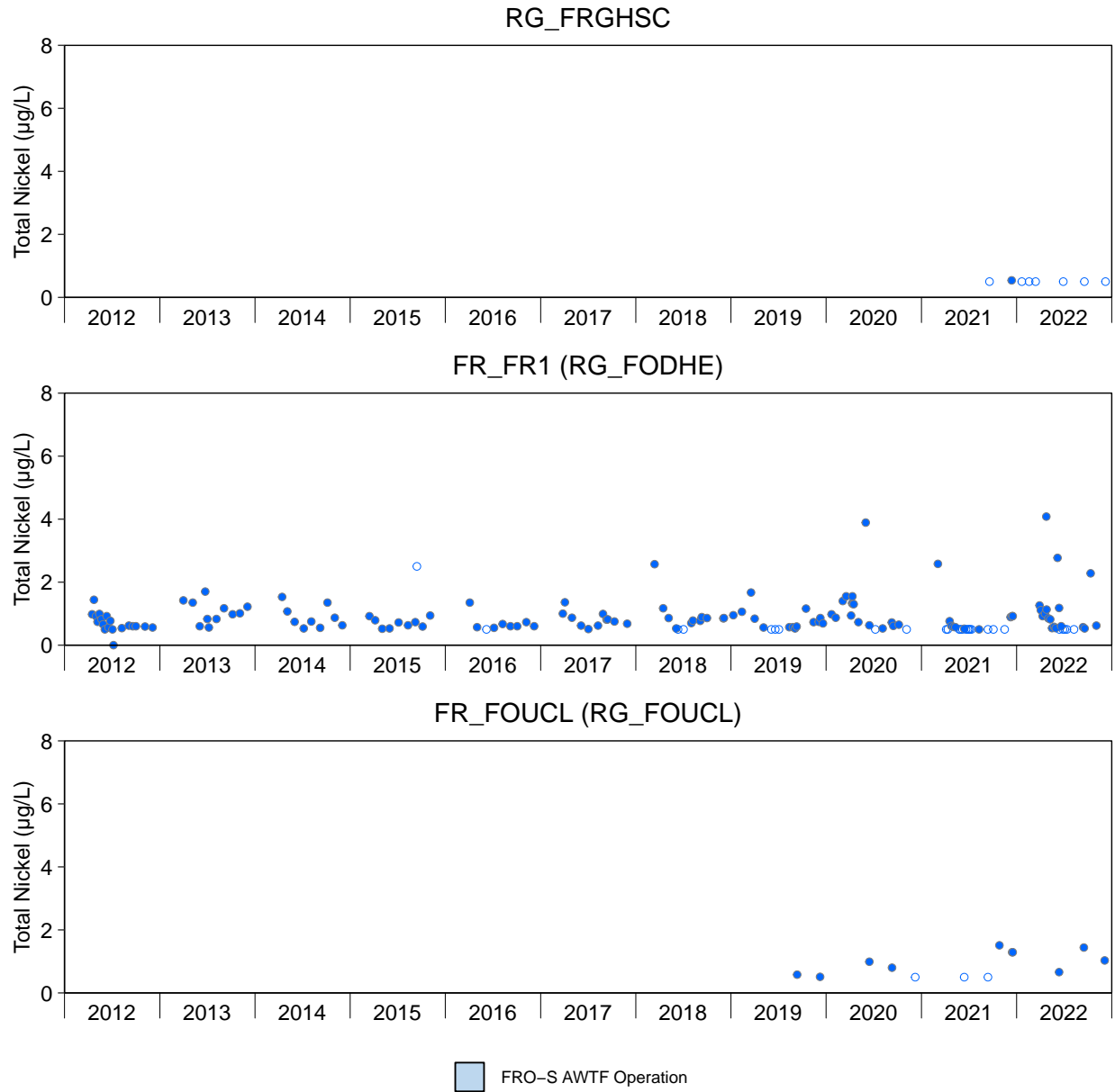


Figure D.12: Time Series Plots for Total Nickel Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

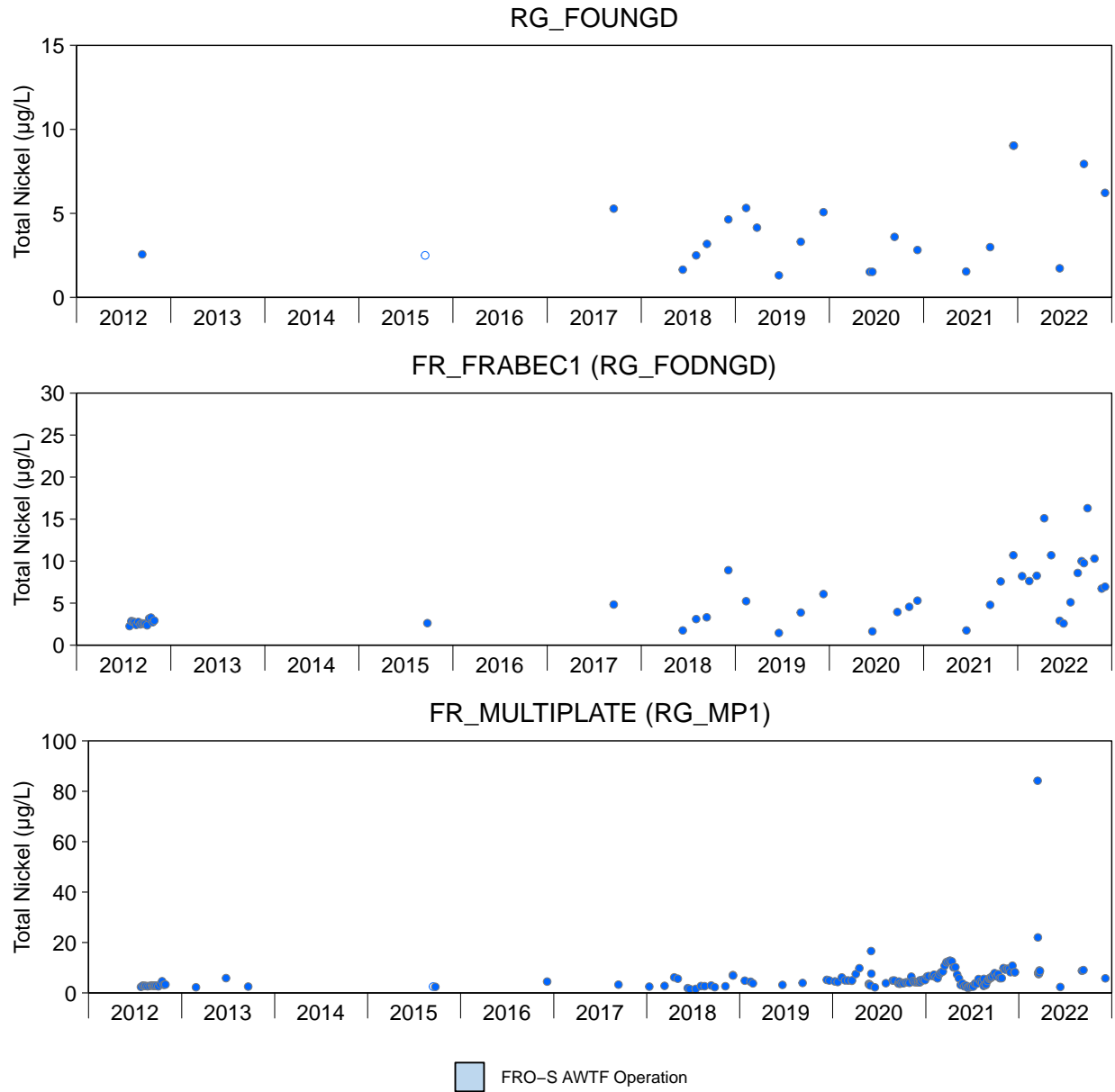


Figure D.12: Time Series Plots for Total Nickel Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

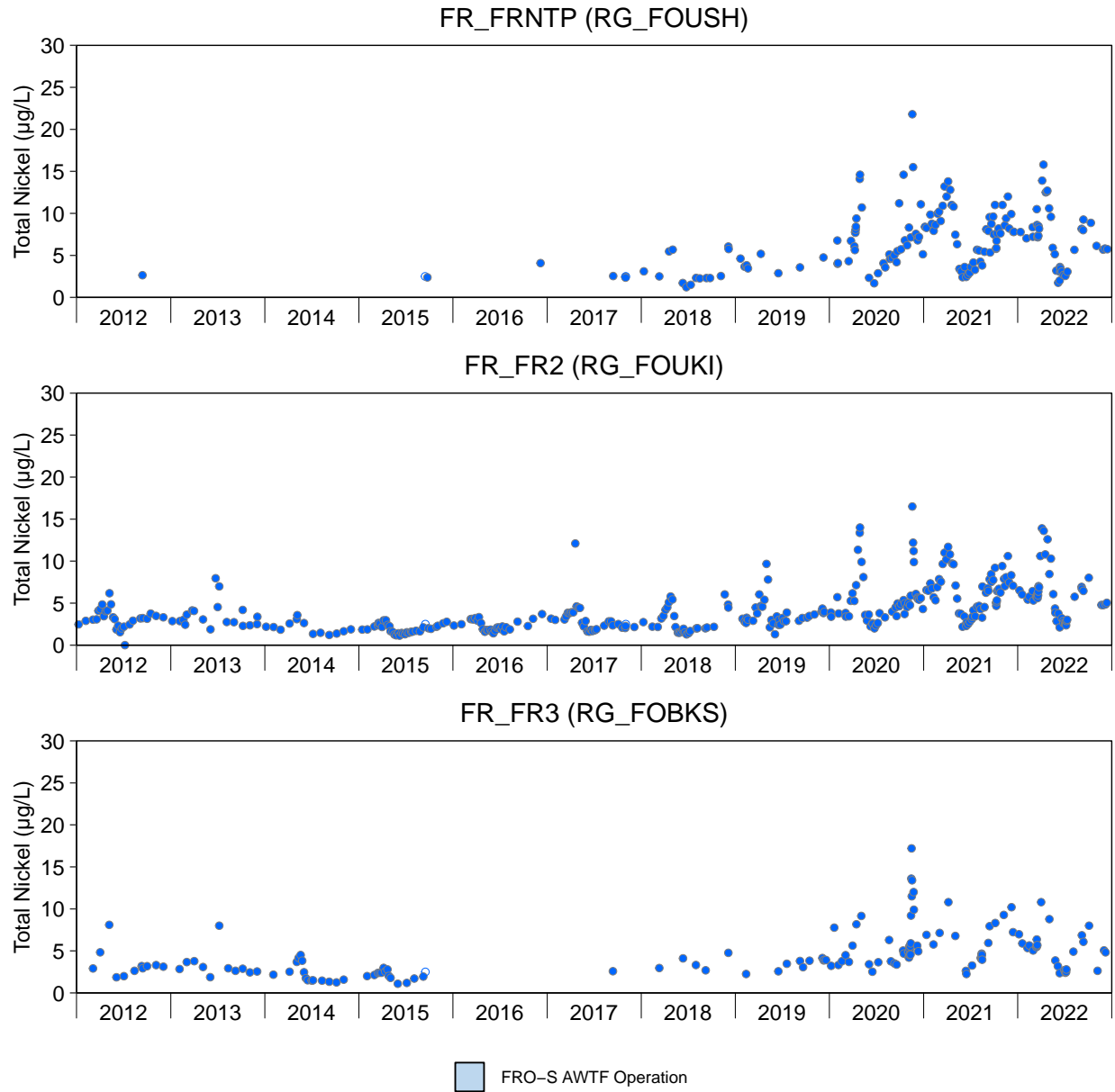


Figure D.12: Time Series Plots for Total Nickel Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

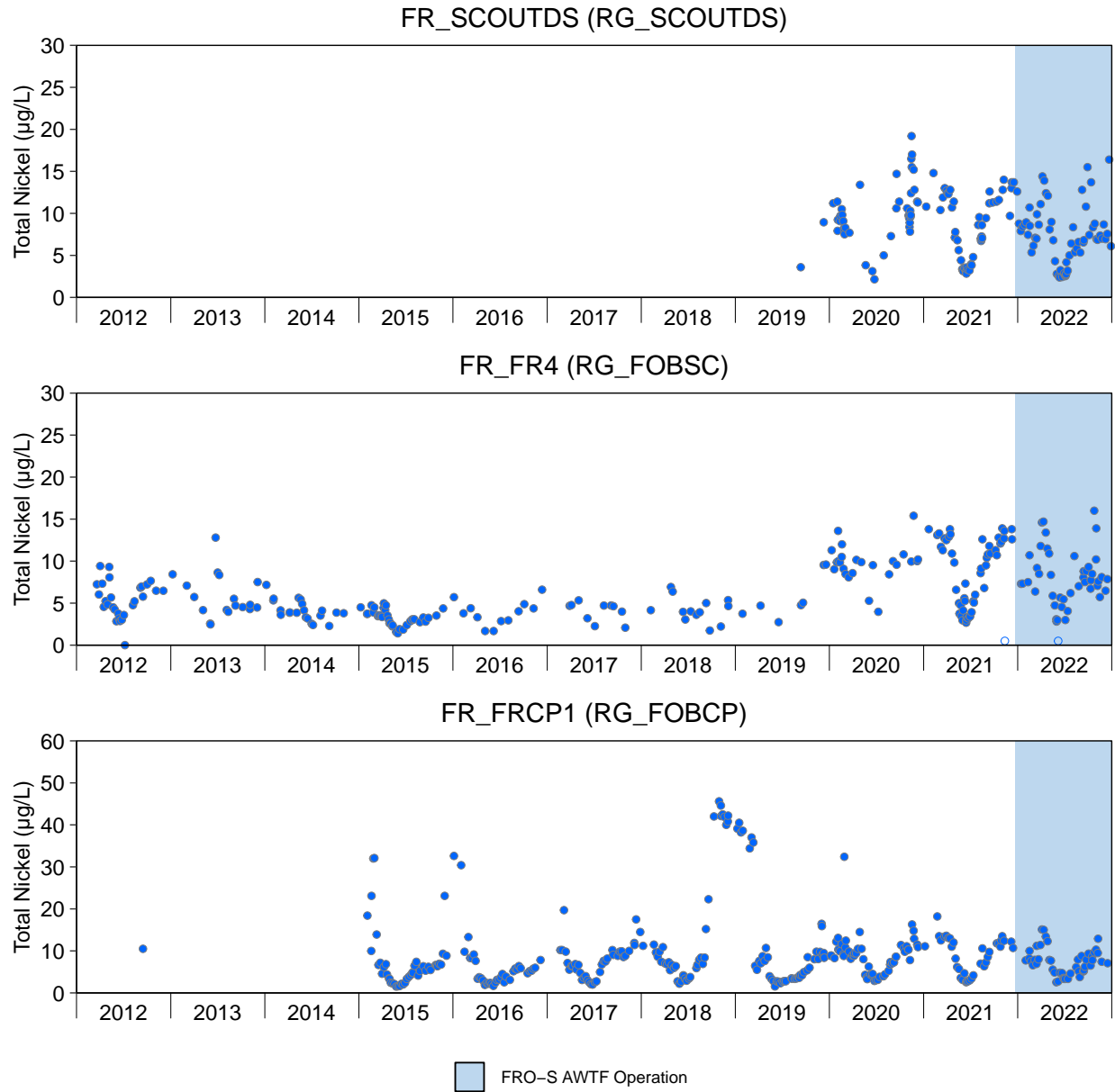


Figure D.12: Time Series Plots for Total Nickel Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

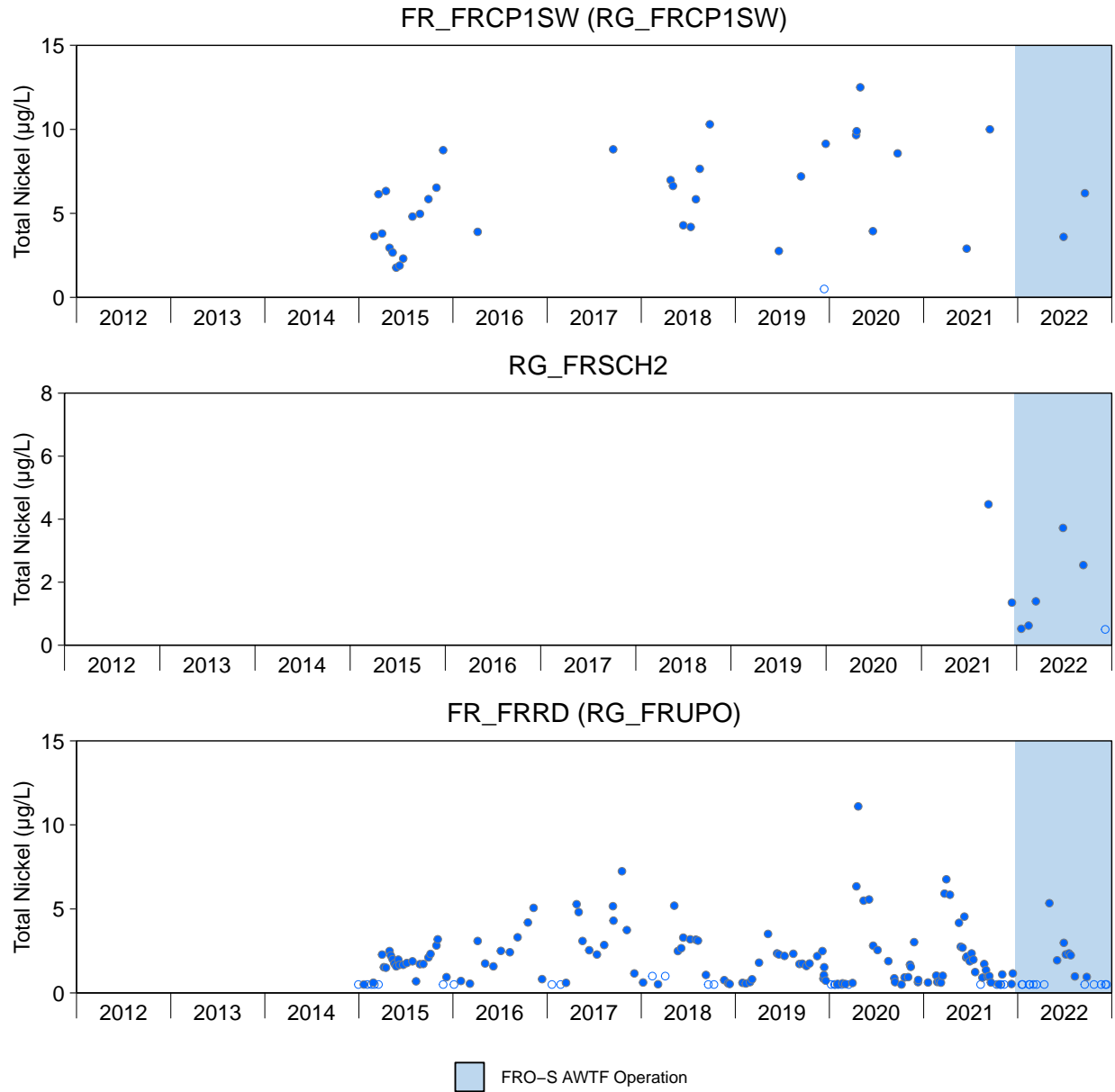


Figure D.12: Time Series Plots for Total Nickel Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

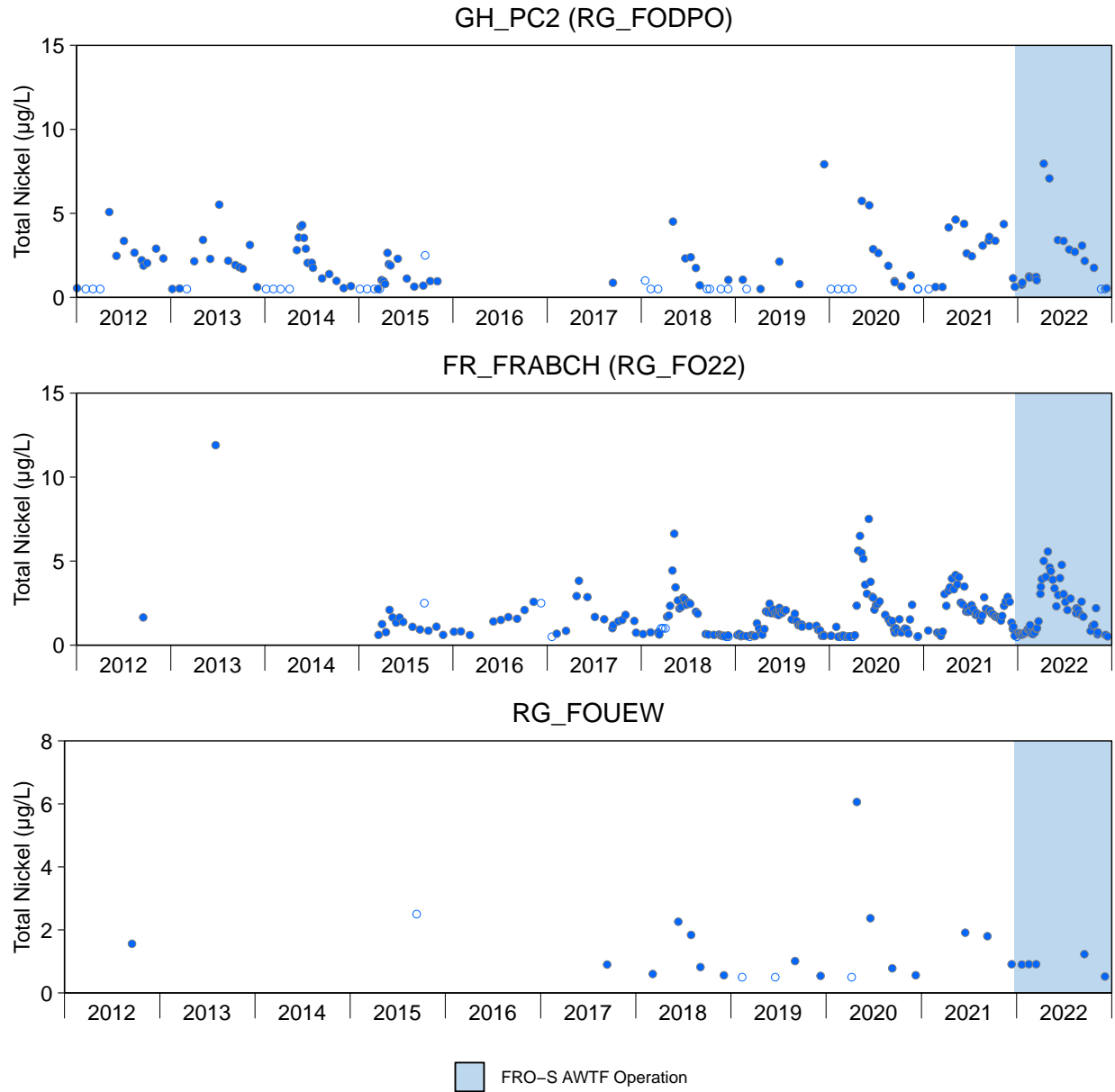


Figure D.12: Time Series Plots for Total Nickel Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

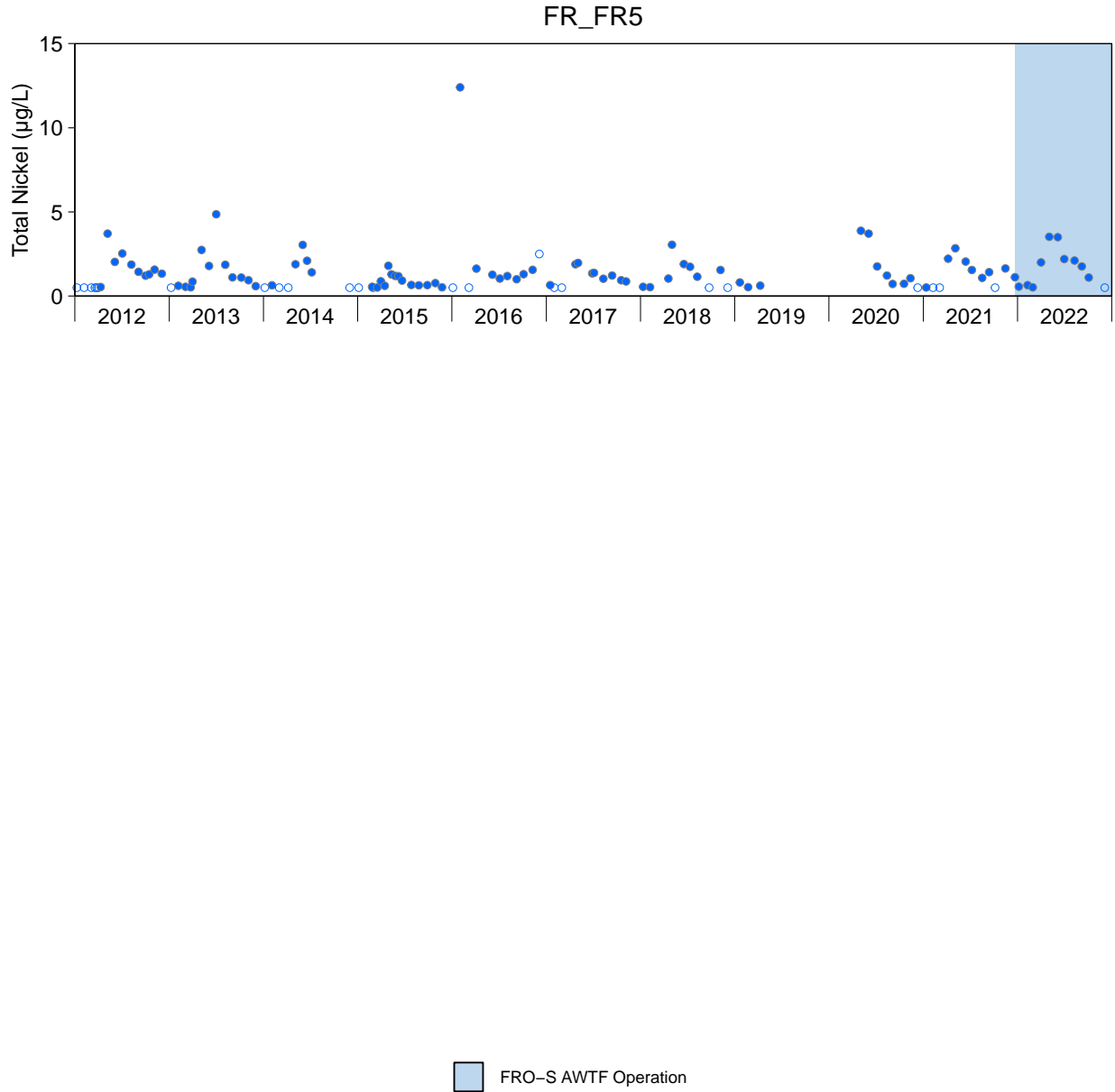


Figure D.12: Time Series Plots for Total Nickel Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

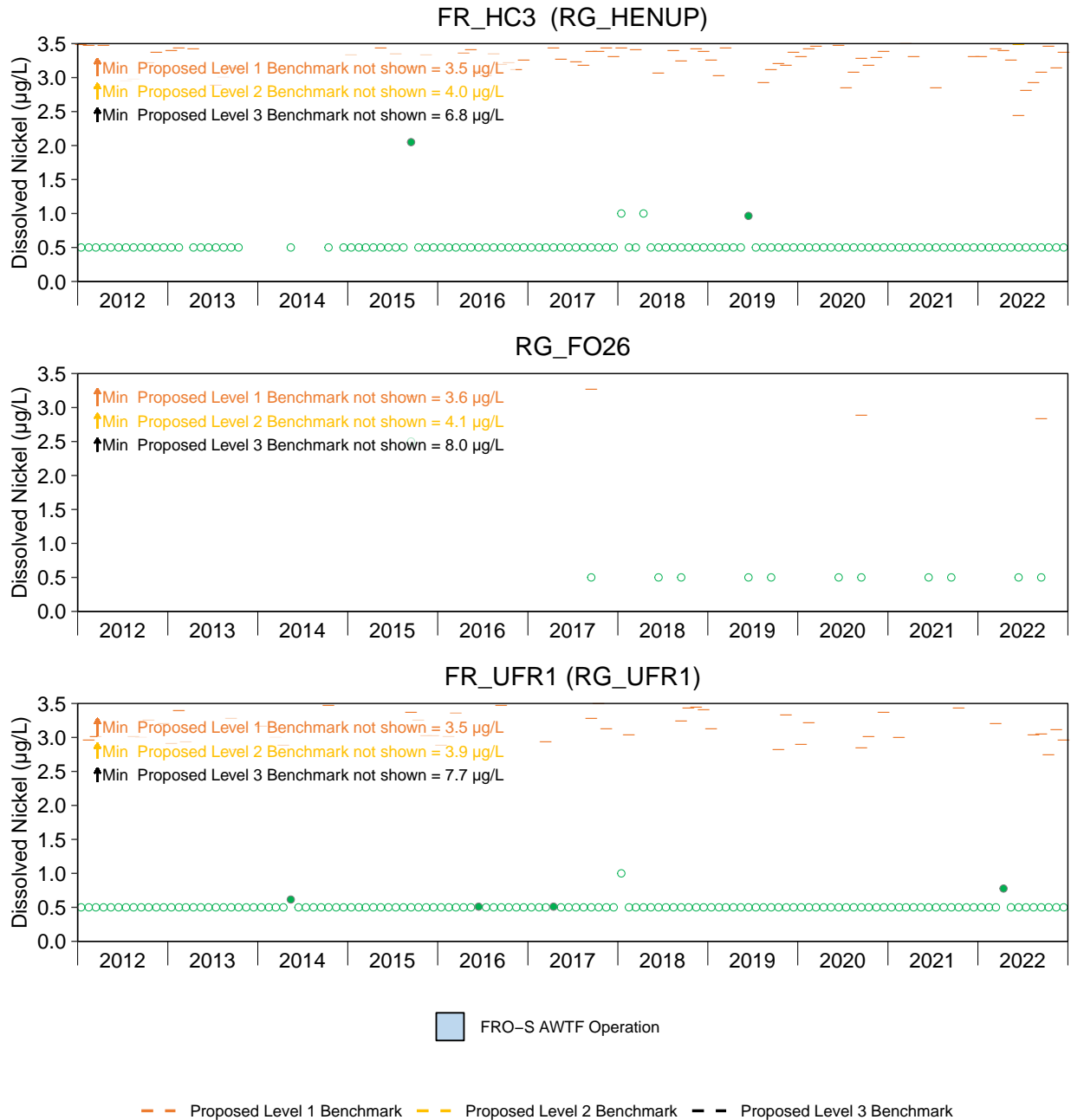


Figure D.13: Time Series Plots for Monthly Mean Dissolved Nickel Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on dissolved organic carbon, water hardness and bicarbonate concentrations. Values and effects concentrations were averaged by month according to screening guidance. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

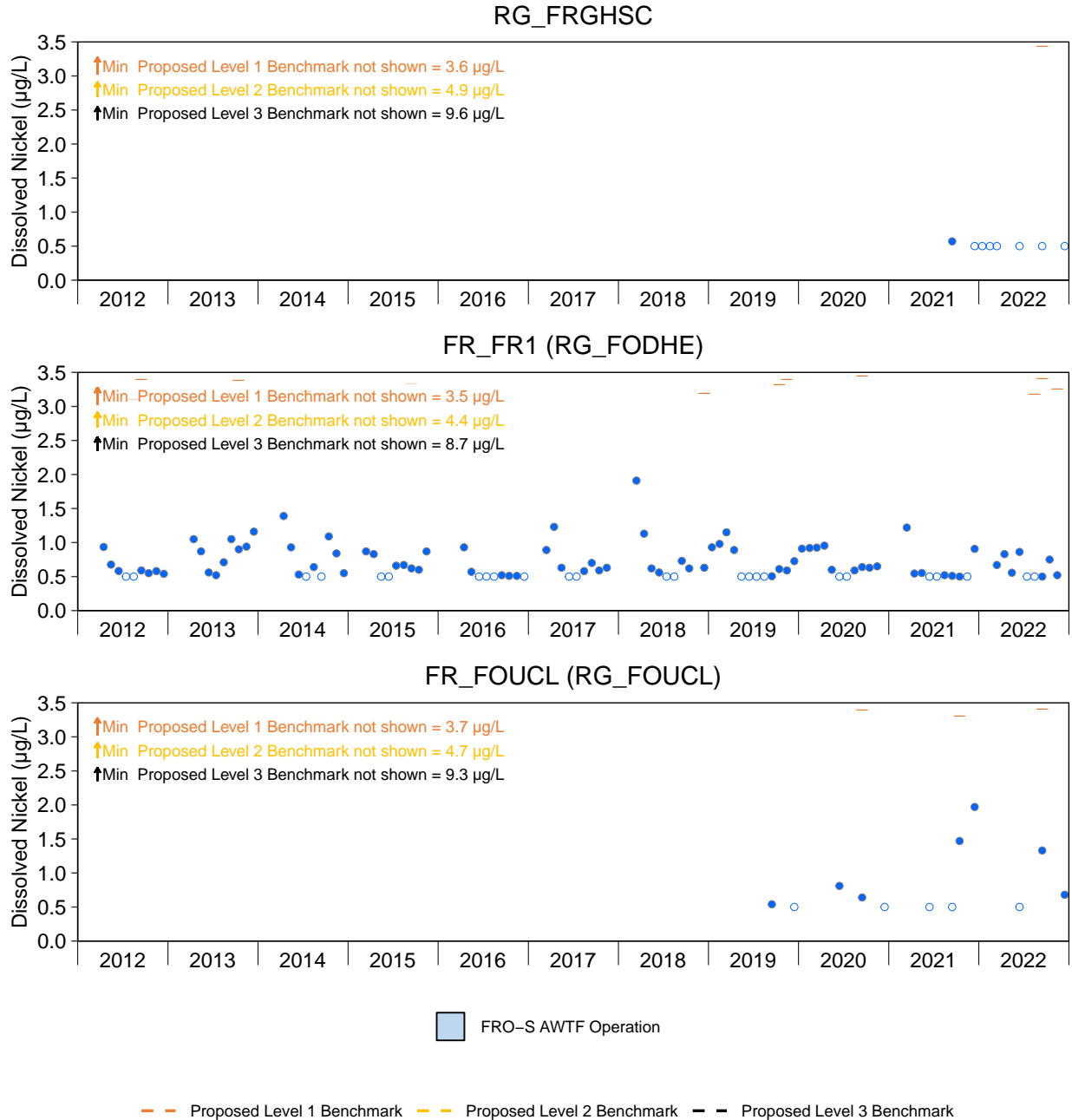


Figure D.13: Time Series Plots for Monthly Mean Dissolved Nickel Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on dissolved organic carbon, water hardness and bicarbonate concentrations. Values and effects concentrations were averaged by month according to screening guidance. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

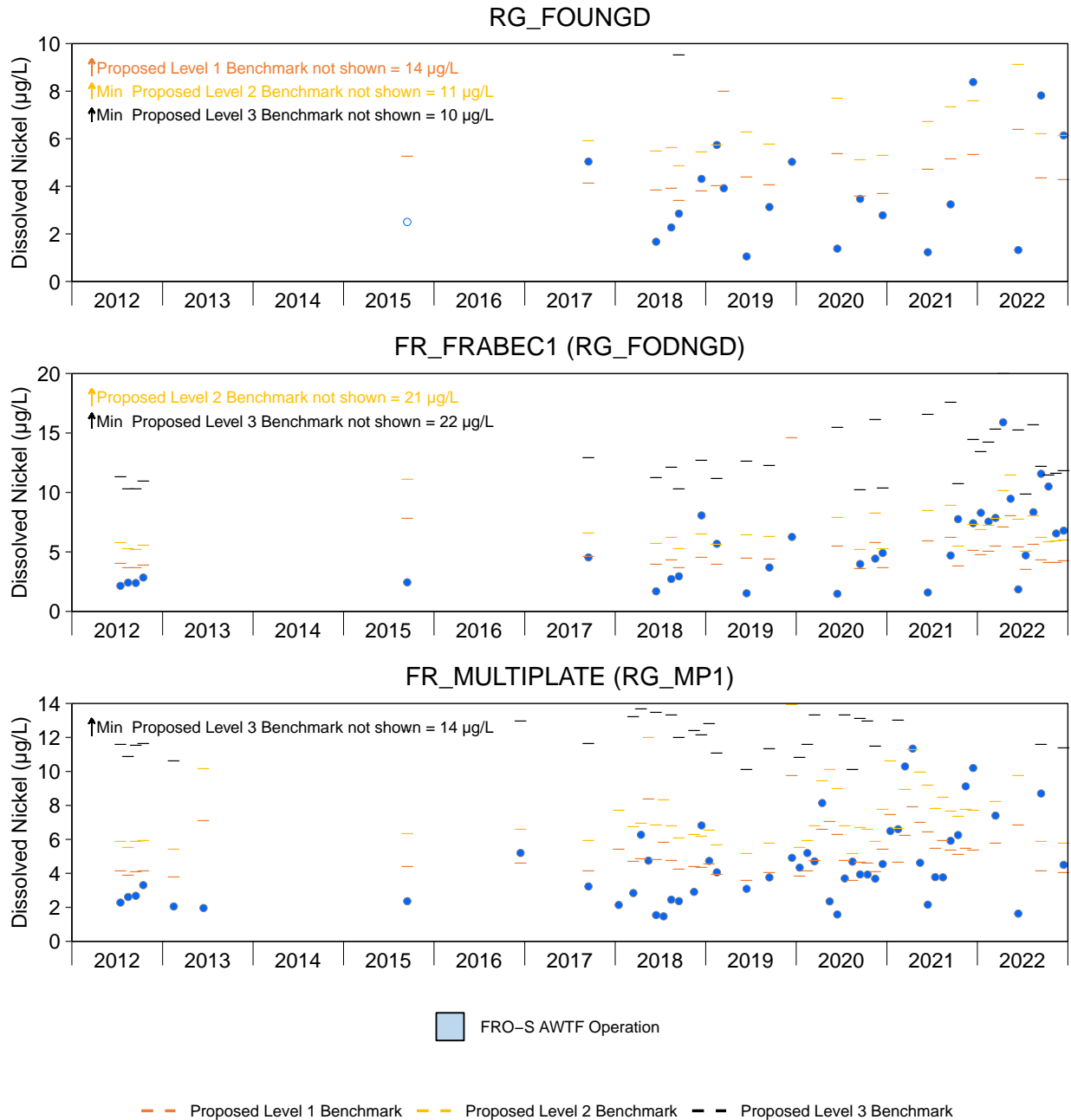


Figure D.13: Time Series Plots for Monthly Mean Dissolved Nickel Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on dissolved organic carbon, water hardness and bicarbonate concentrations. Values and effects concentrations were averaged by month according to screening guidance. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

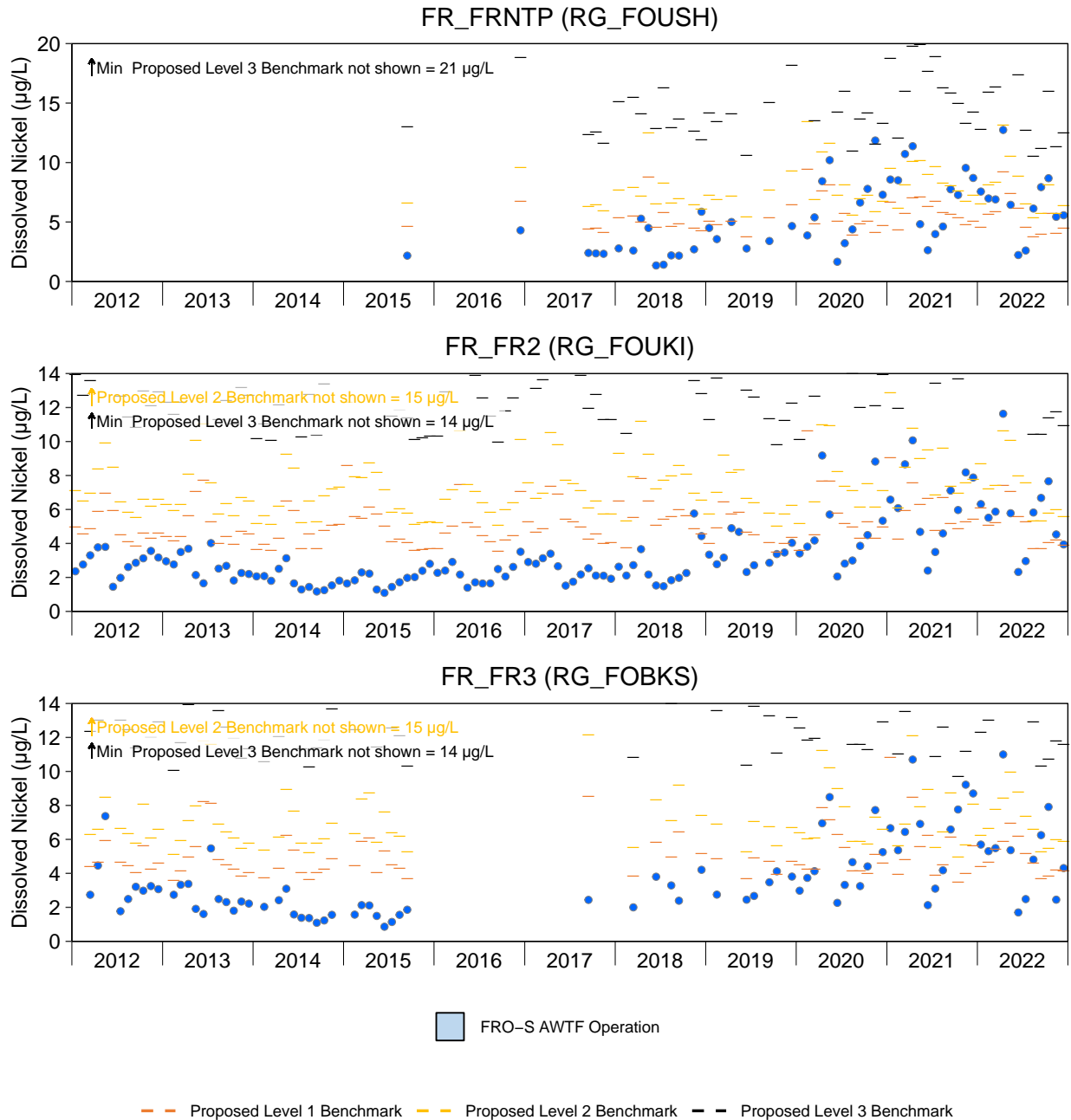


Figure D.13: Time Series Plots for Monthly Mean Dissolved Nickel Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on dissolved organic carbon, water hardness and bicarbonate concentrations. Values and effects concentrations were averaged by month according to screening guidance. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

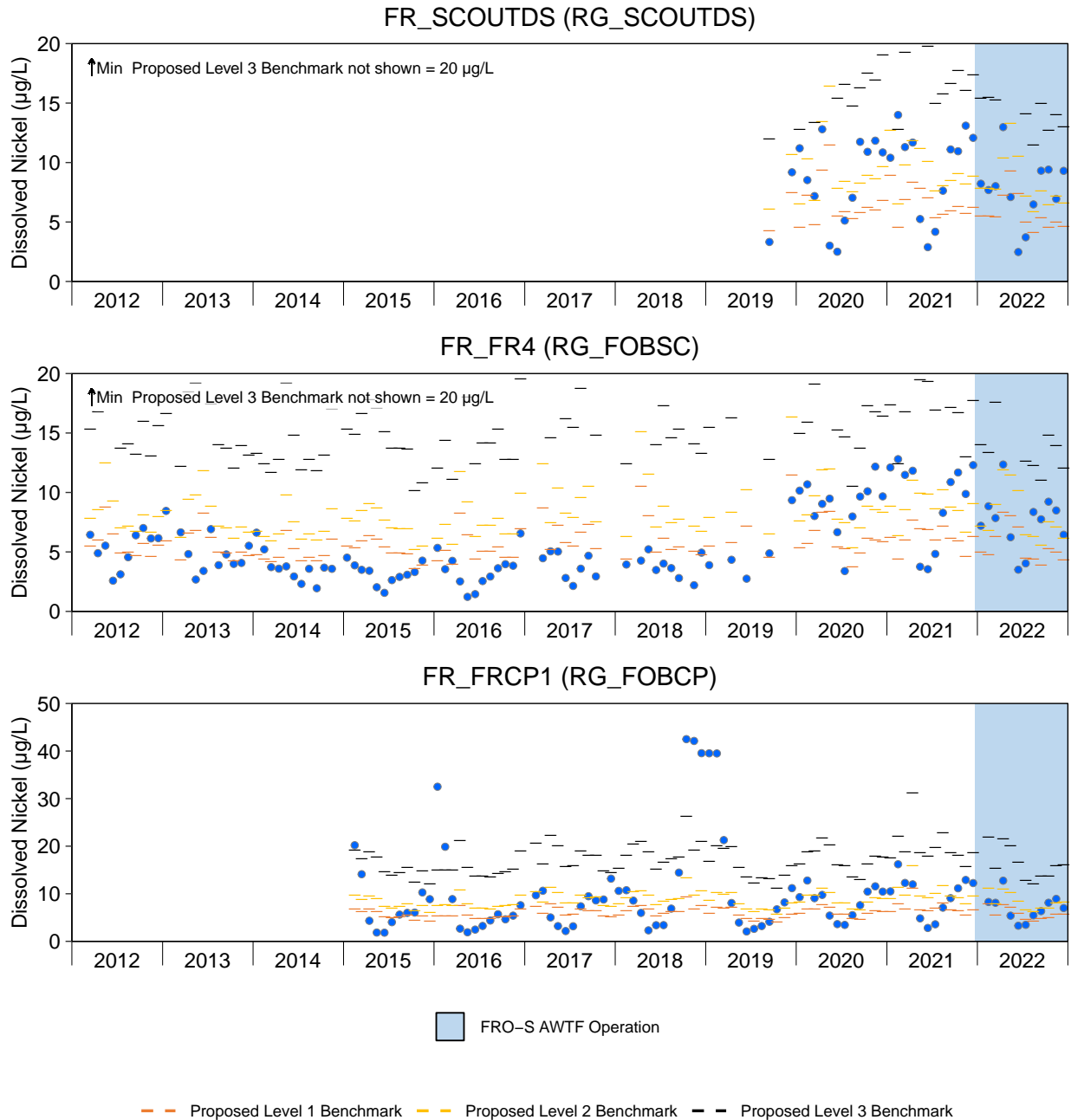


Figure D.13: Time Series Plots for Monthly Mean Dissolved Nickel Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on dissolved organic carbon, water hardness and bicarbonate concentrations. Values and effects concentrations were averaged by month according to screening guidance. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

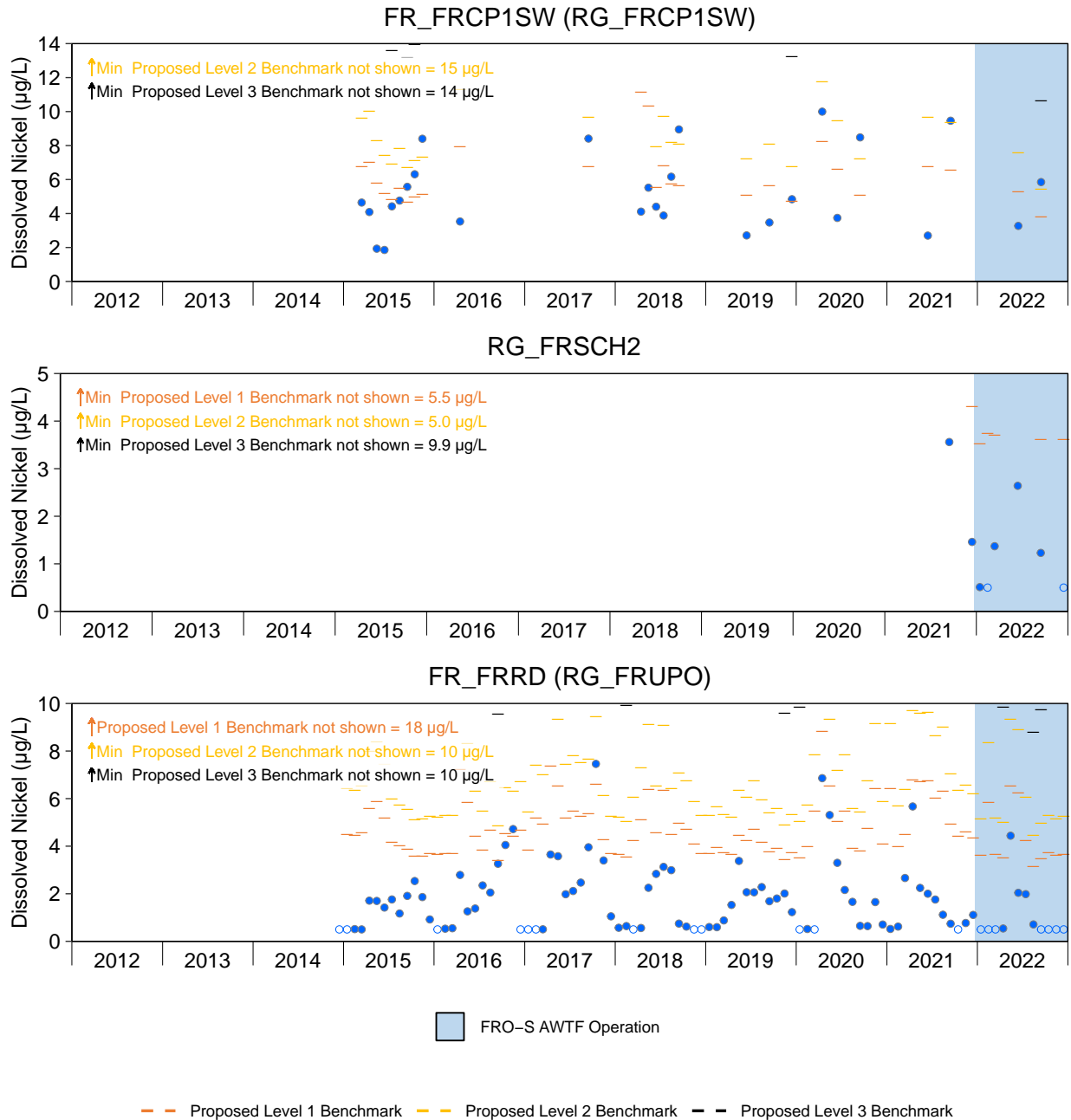


Figure D.13: Time Series Plots for Monthly Mean Dissolved Nickel Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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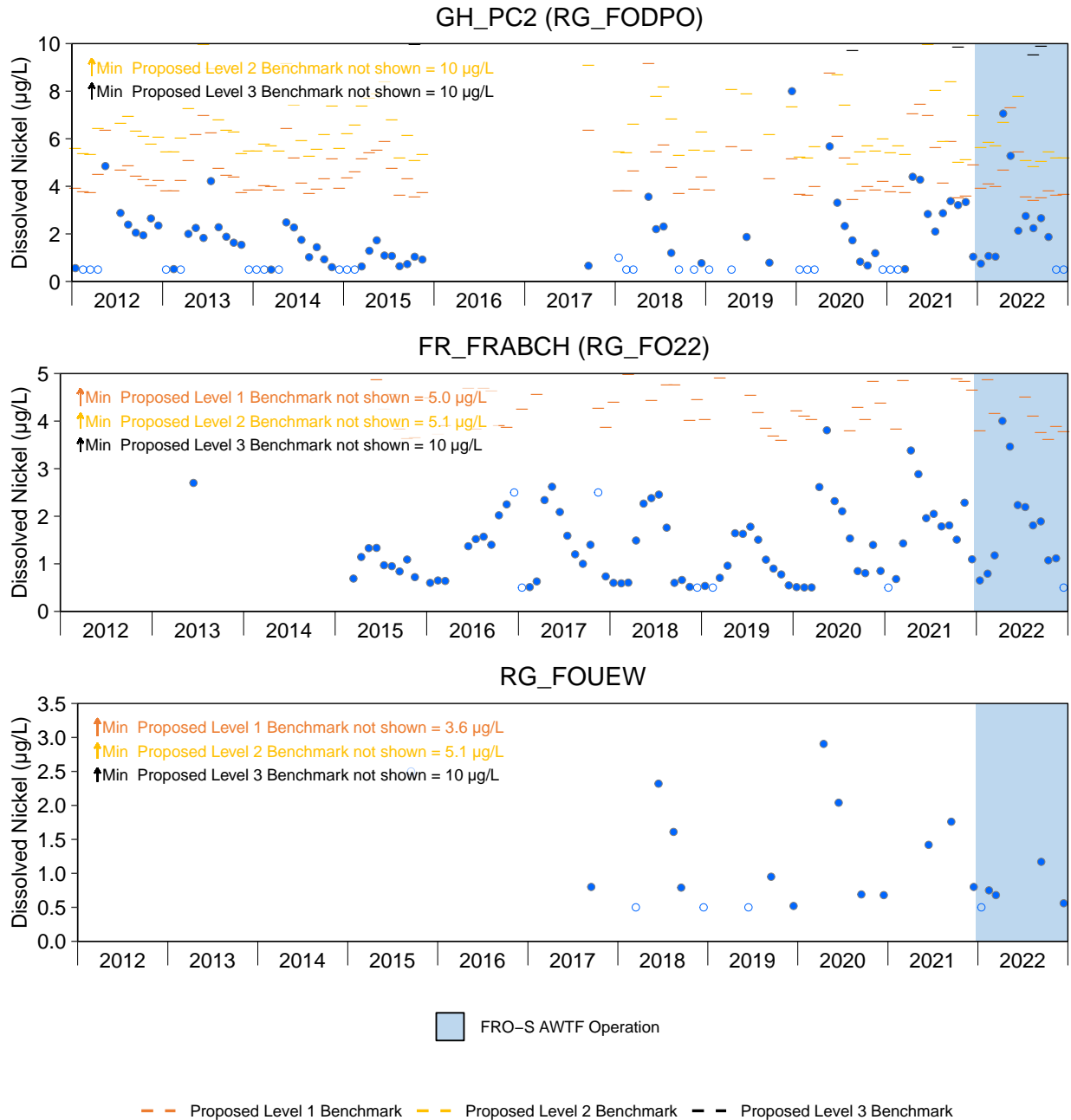


Figure D.13: Time Series Plots for Monthly Mean Dissolved Nickel Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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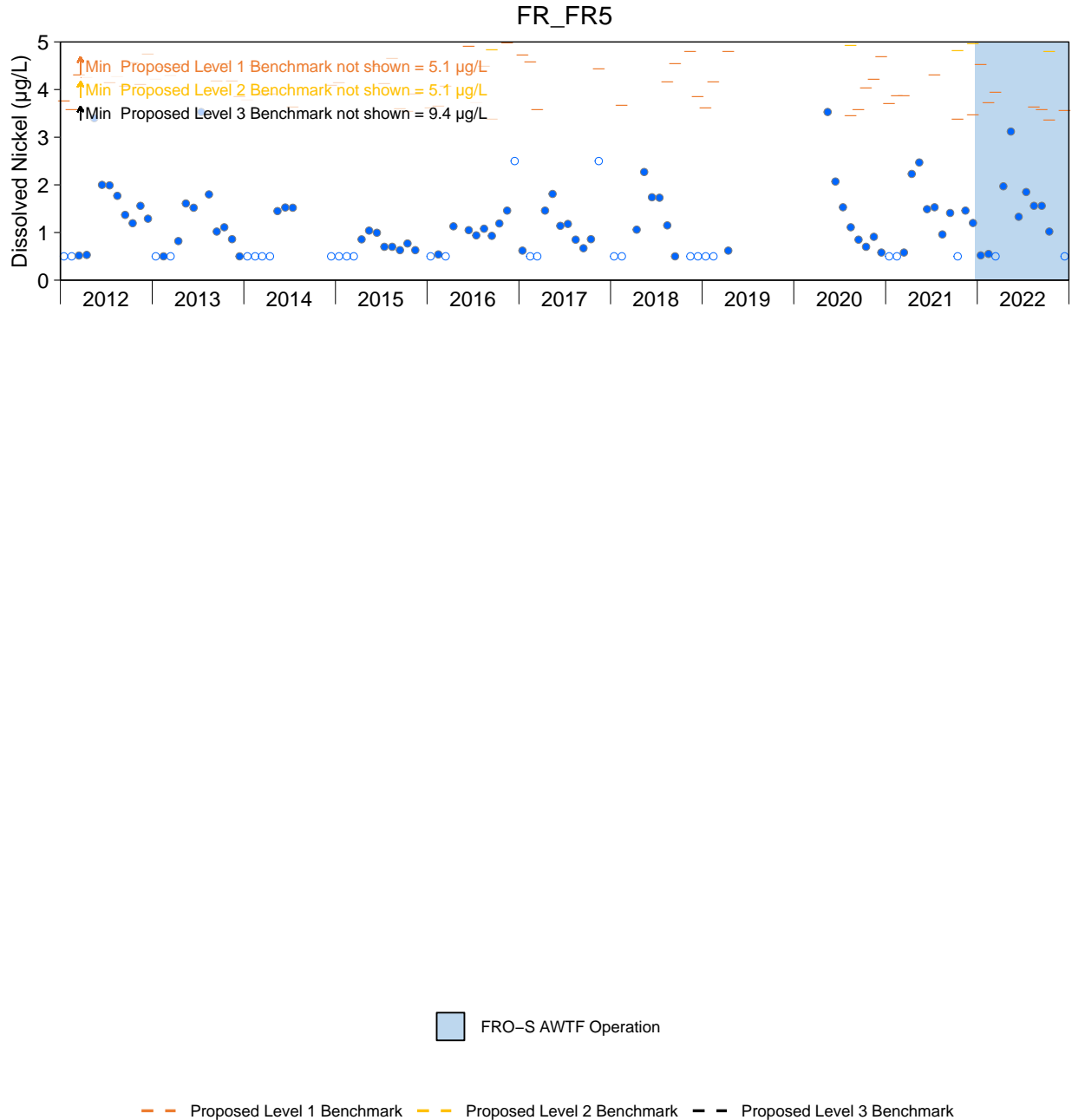


Figure D.13: Time Series Plots for Monthly Mean Dissolved Nickel Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on dissolved organic carbon, water hardness and bicarbonate concentrations. Values and effects concentrations were averaged by month according to screening guidance. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

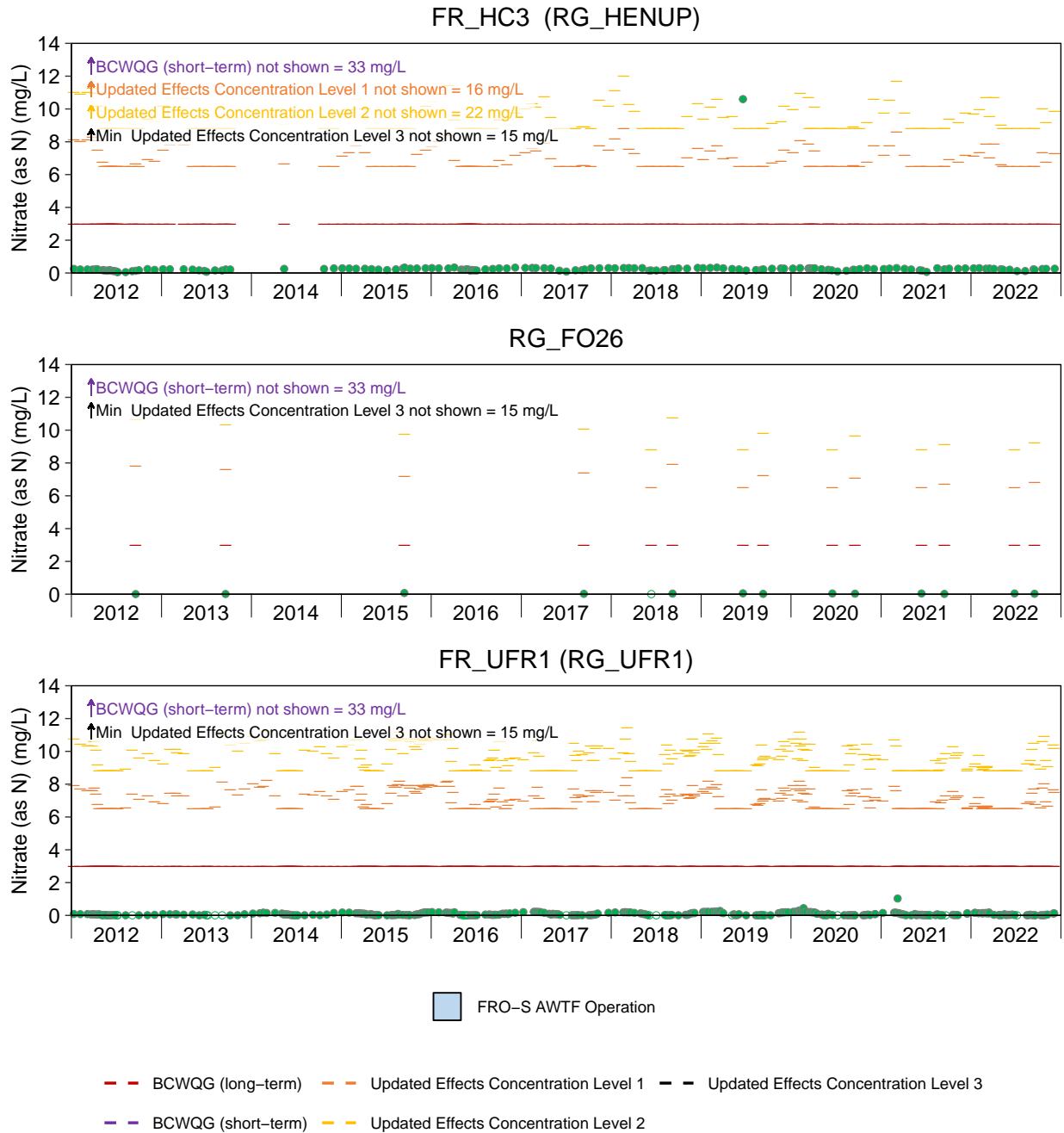


Figure D.14: Time Series Plots for Nitrate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

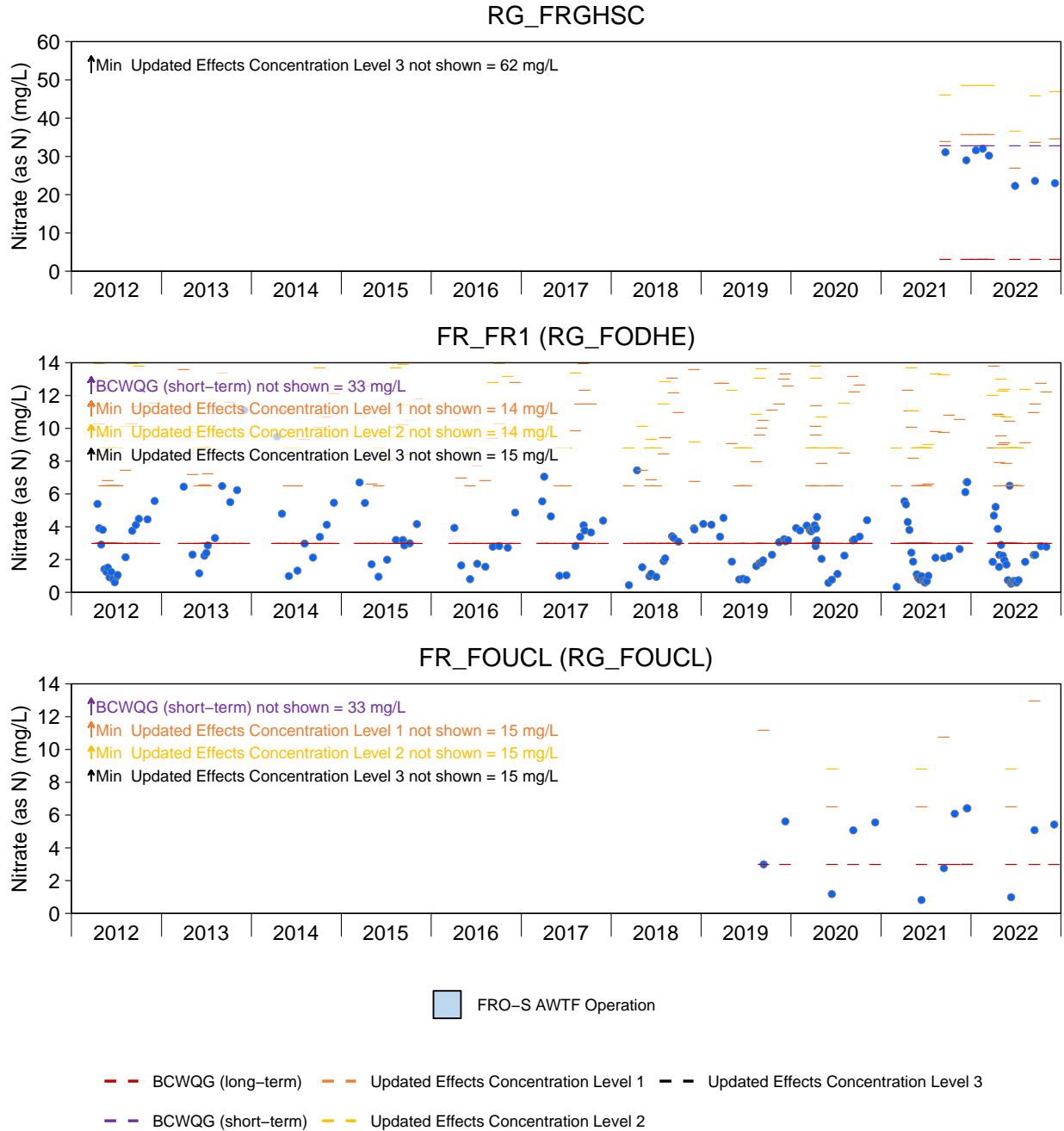


Figure D.14: Time Series Plots for Nitrate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

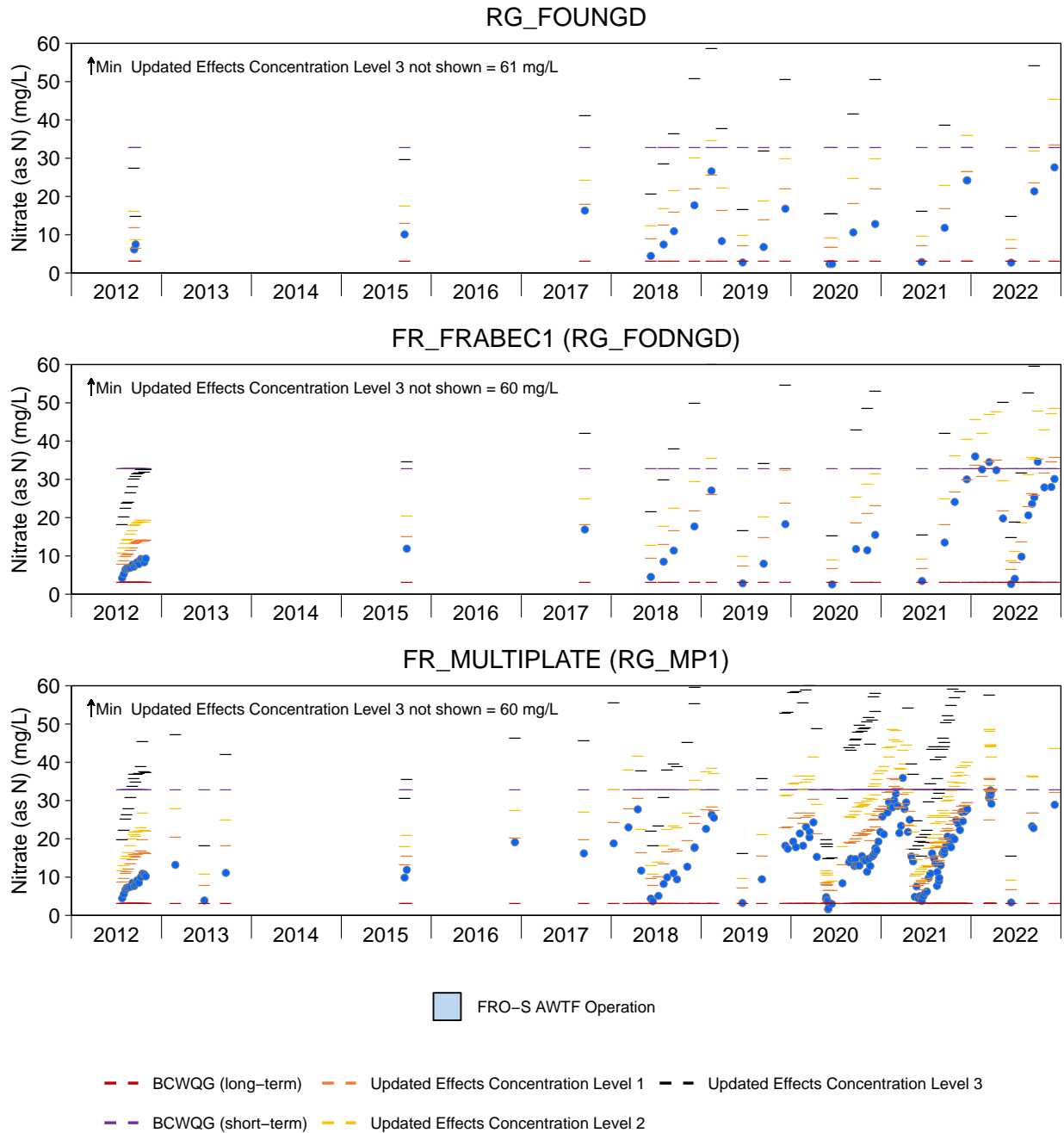


Figure D.14: Time Series Plots for Nitrate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

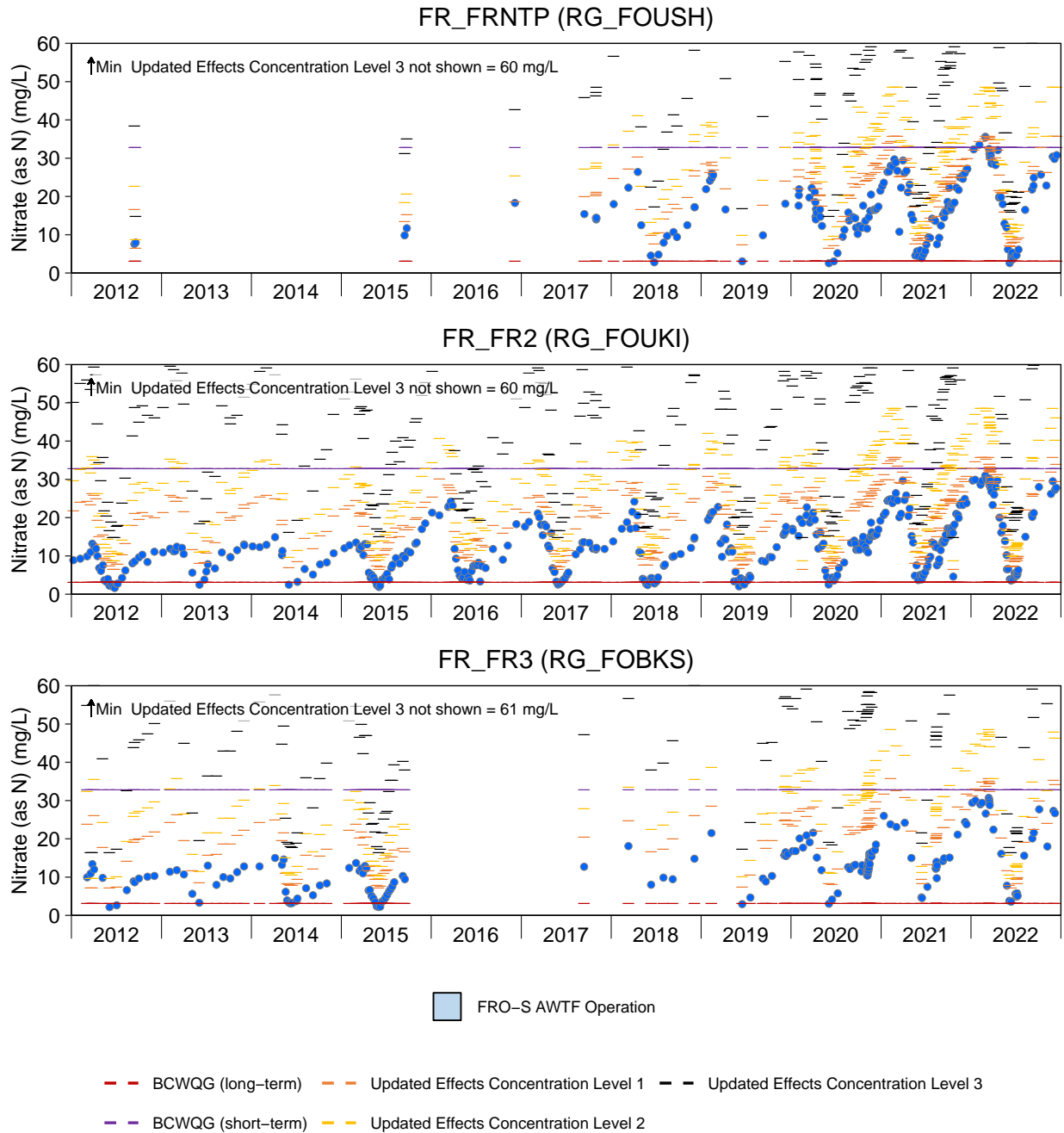


Figure D.14: Time Series Plots for Nitrate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

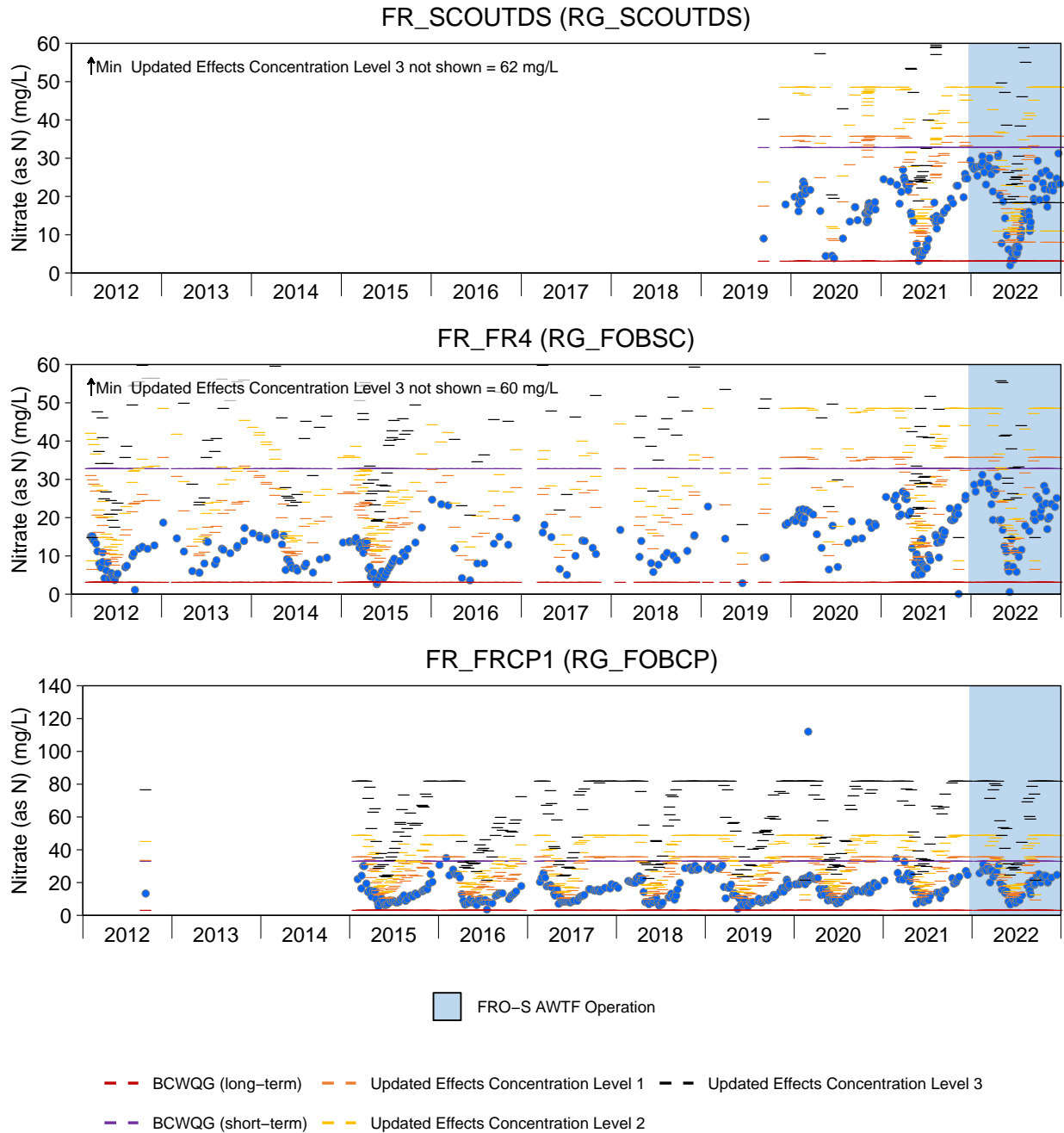


Figure D.14: Time Series Plots for Nitrate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

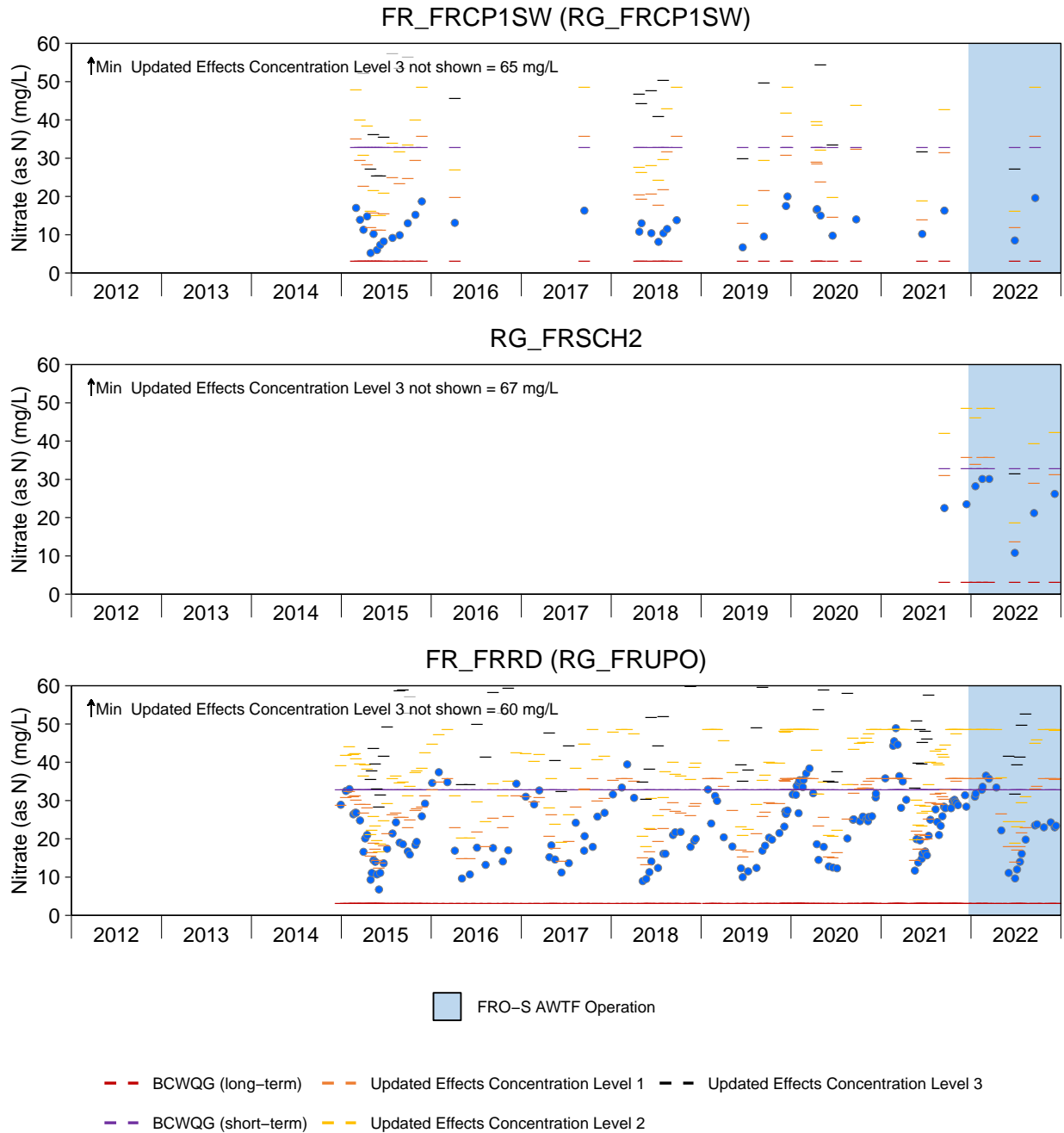


Figure D.14: Time Series Plots for Nitrate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

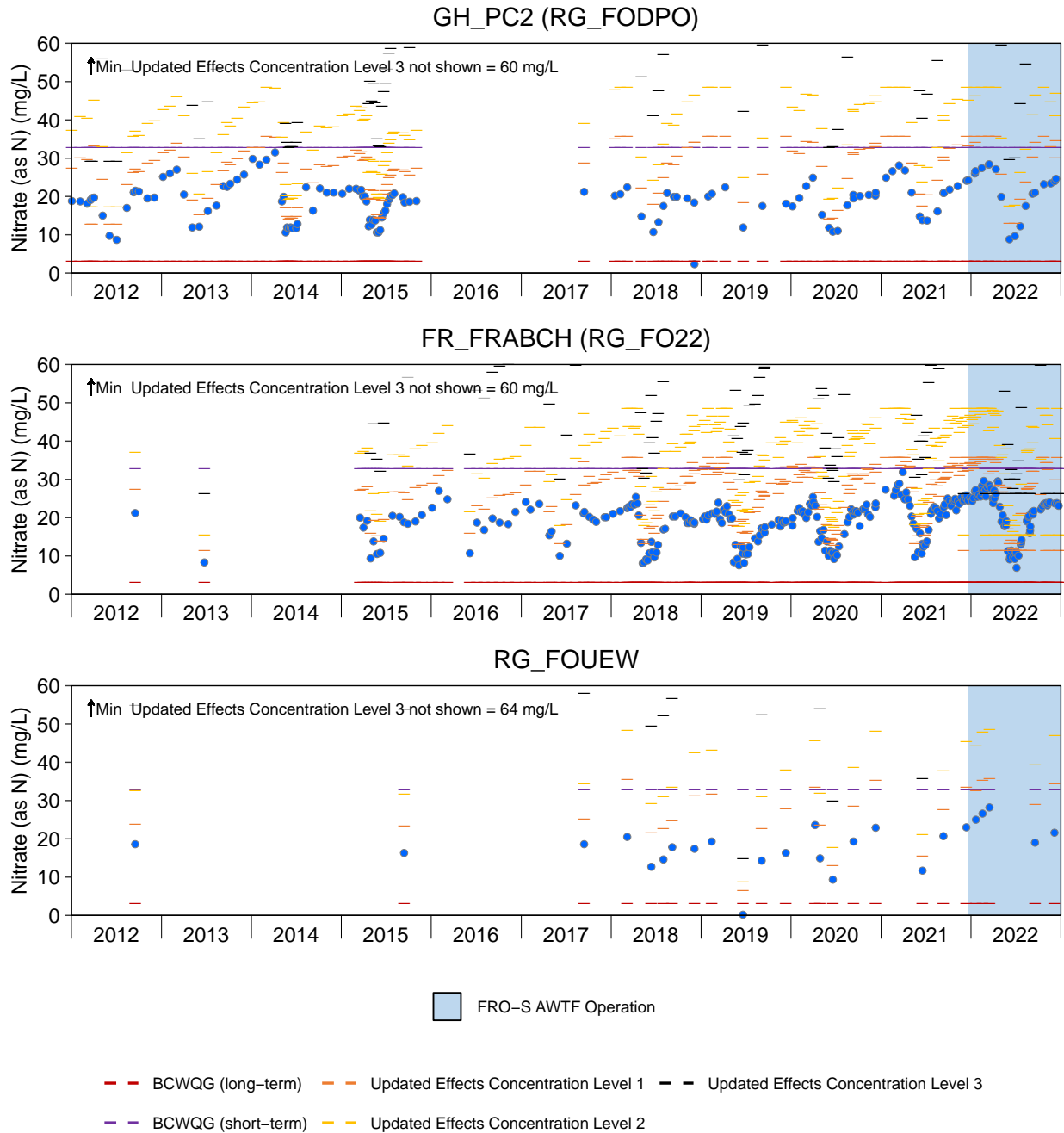
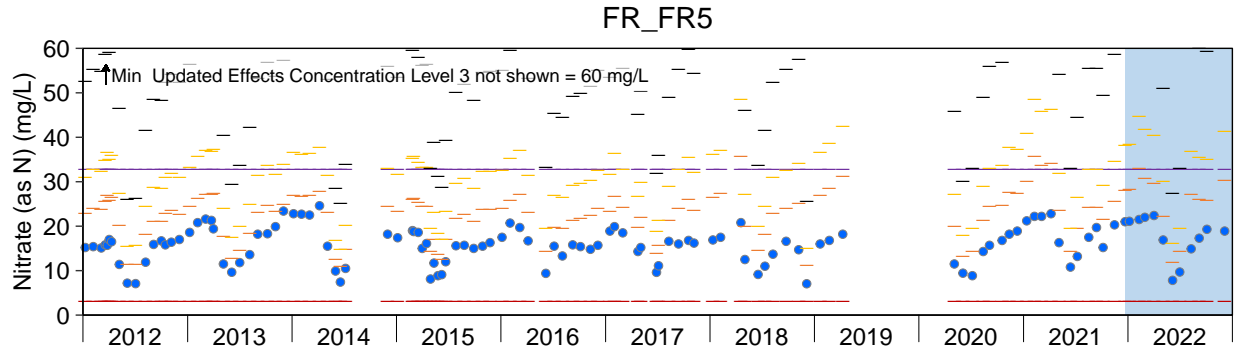


Figure D.14: Time Series Plots for Nitrate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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



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- - - BCWQG (long-term)
- - - Updated Effects Concentration Level 1
- - - Updated Effects Concentration Level 3
- - - BCWQG (short-term)
- - - Updated Effects Concentration Level 2

Figure D.14: Time Series Plots for Nitrate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

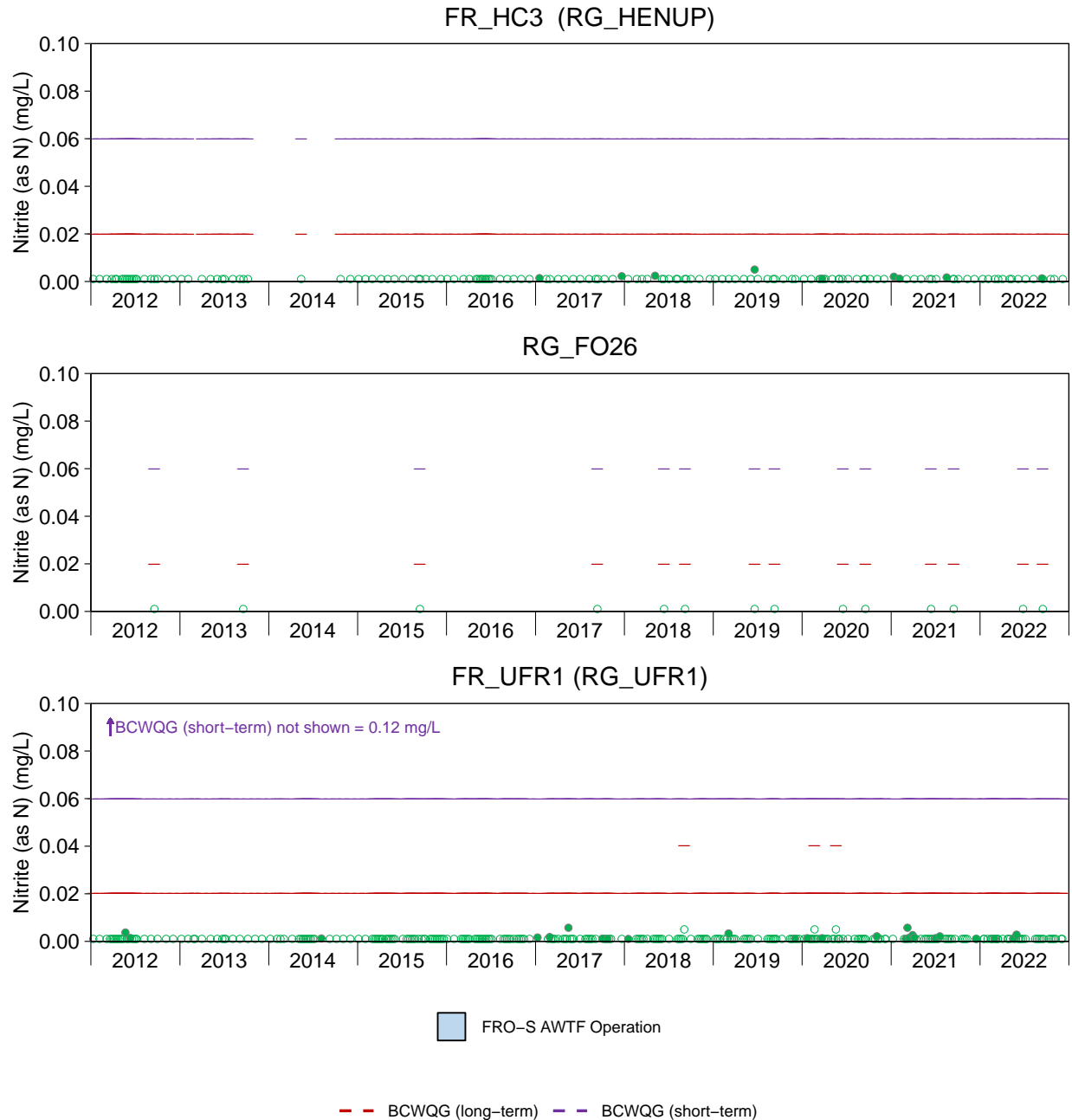


Figure D.15: Time Series Plots for Nitrite Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

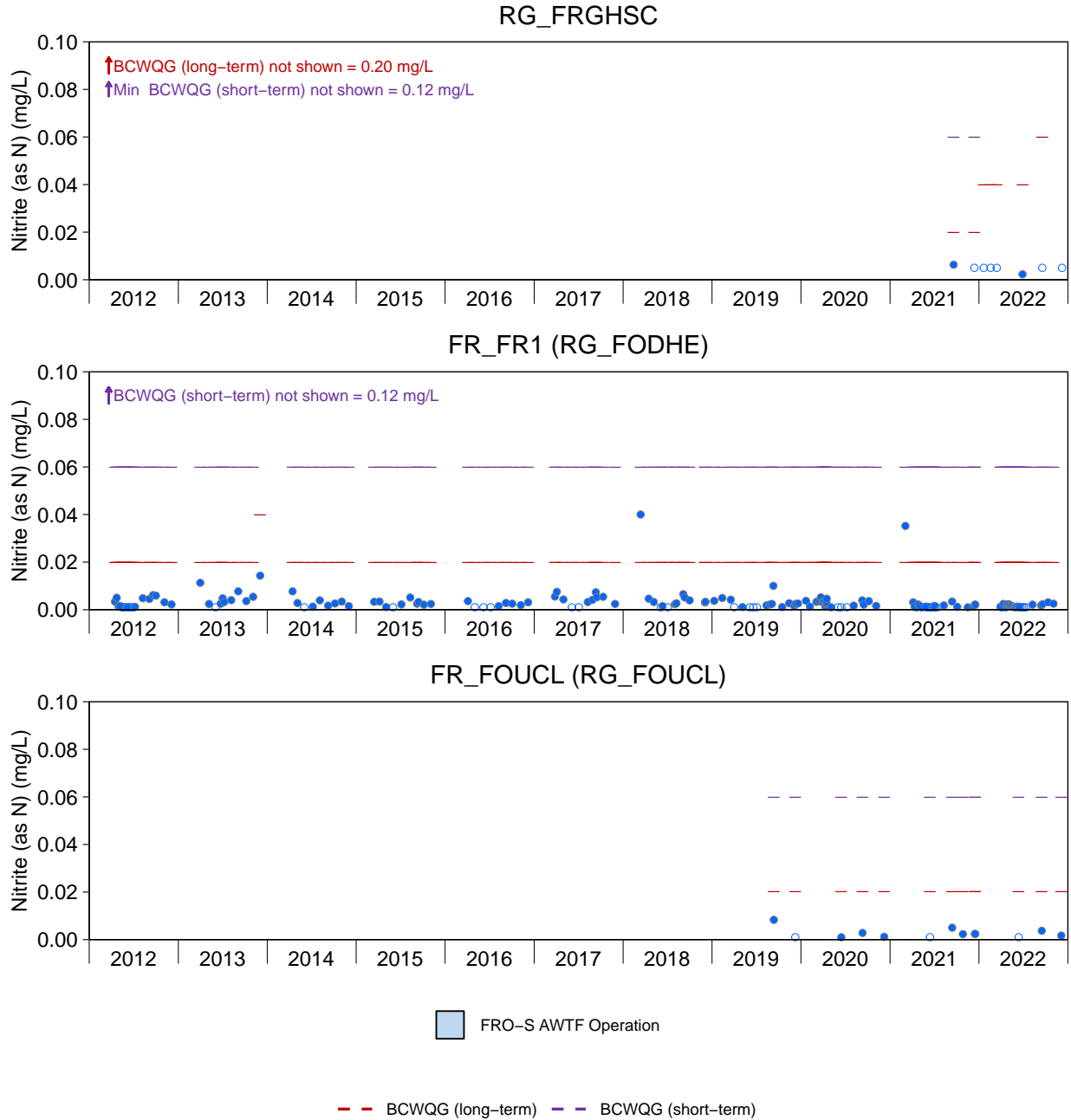


Figure D.15: Time Series Plots for Nitrite Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

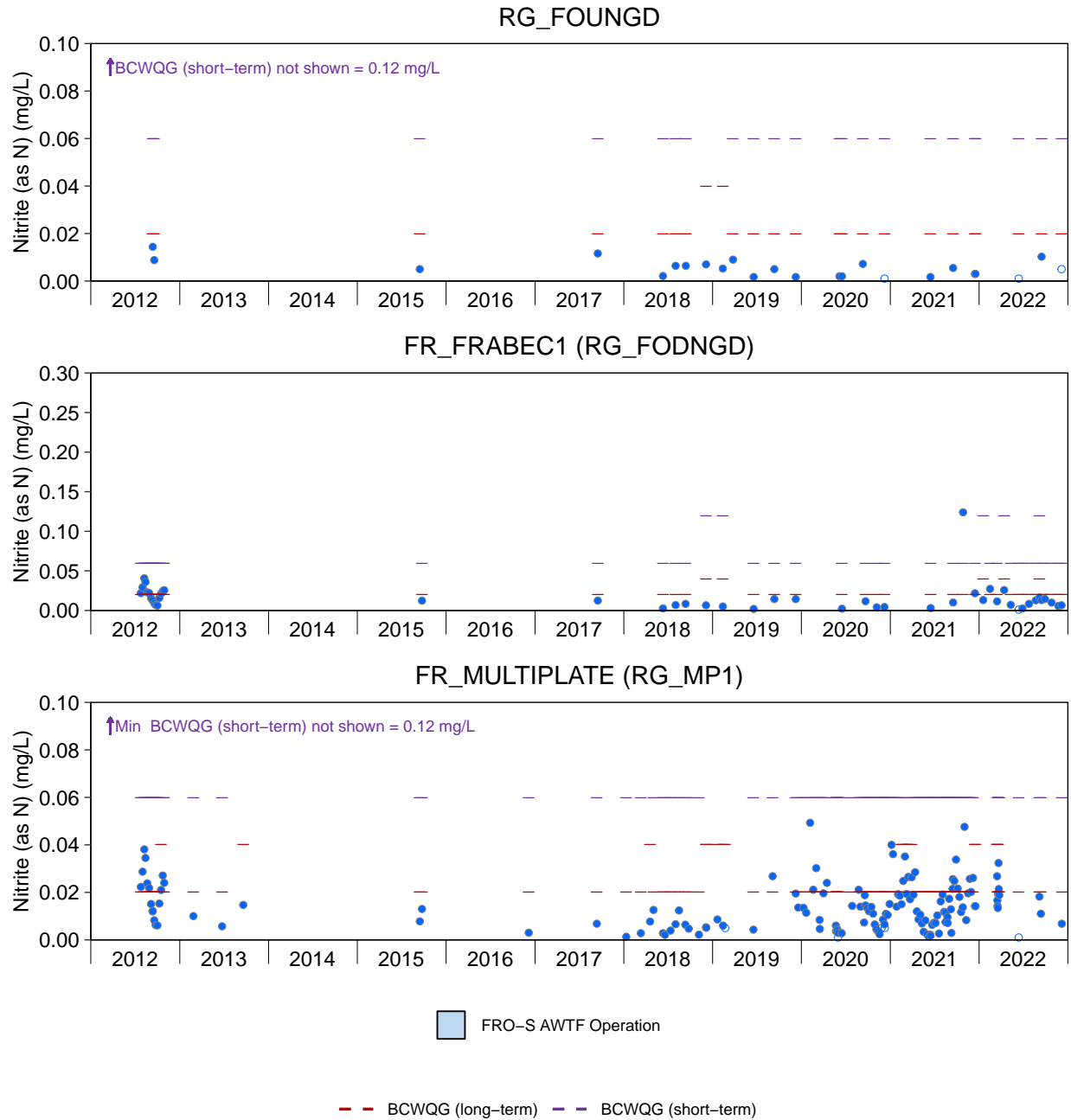


Figure D.15: Time Series Plots for Nitrite Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

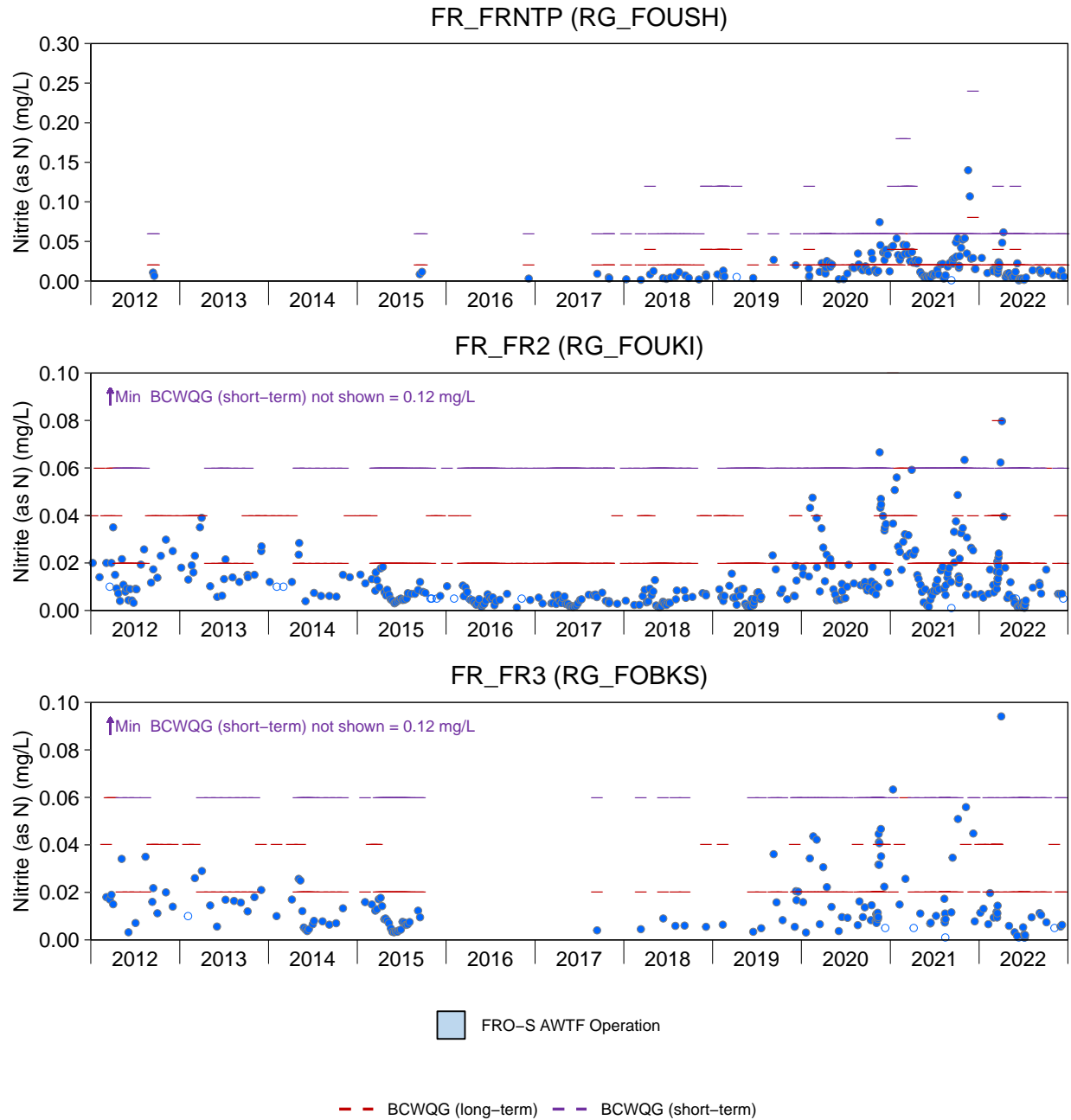


Figure D.15: Time Series Plots for Nitrite Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

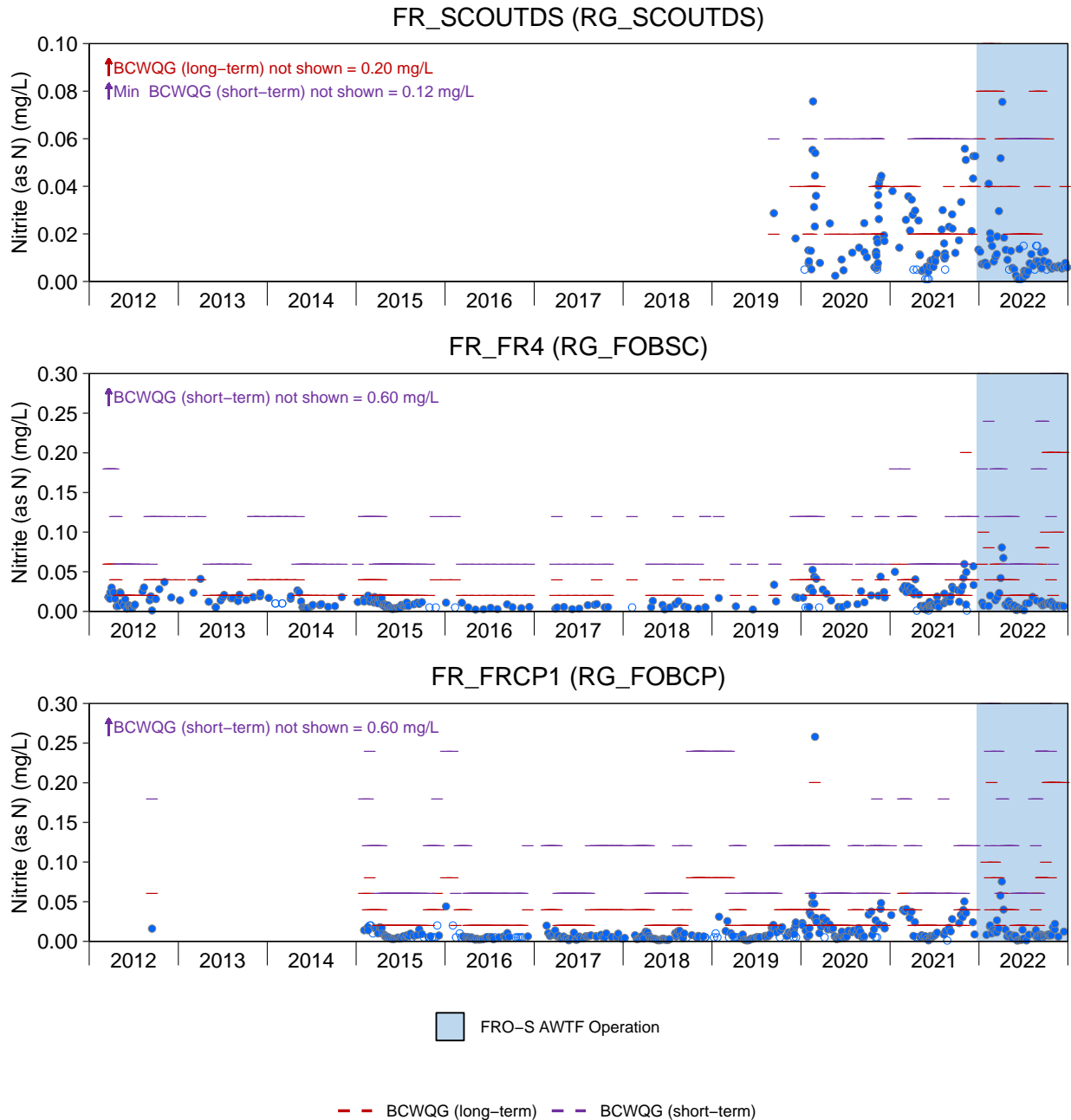


Figure D.15: Time Series Plots for Nitrite Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

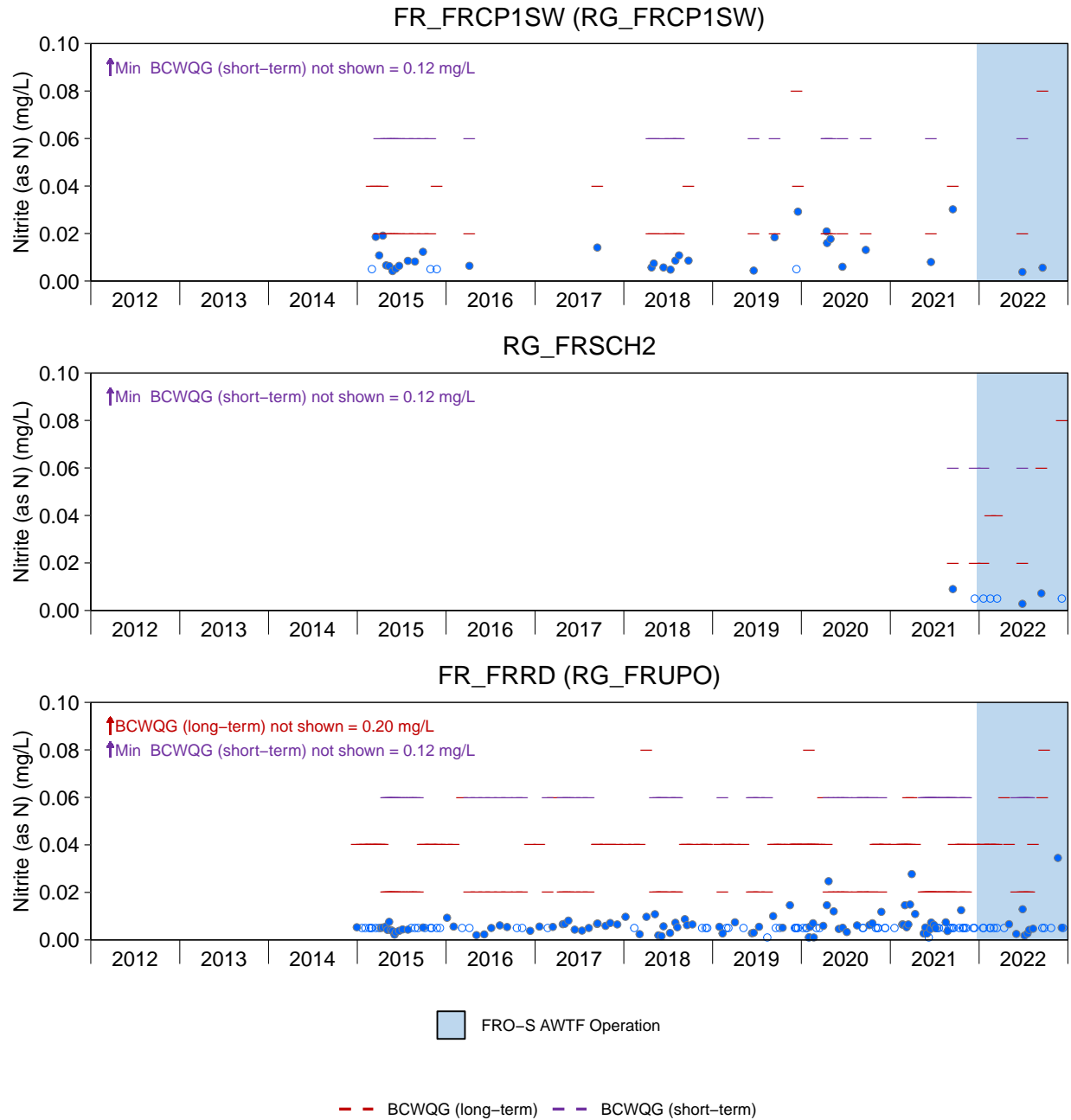


Figure D.15: Time Series Plots for Nitrite Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

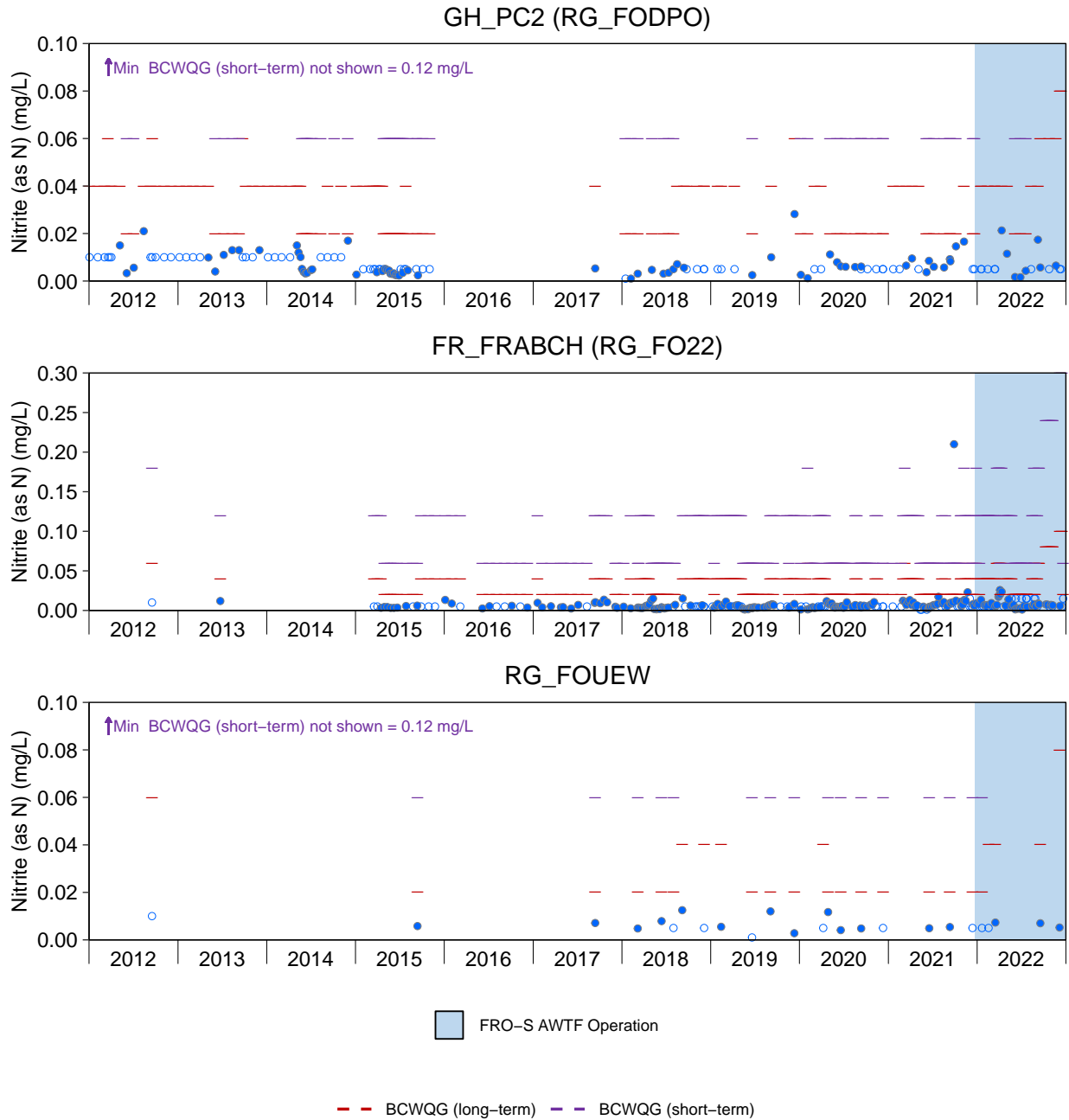


Figure D.15: Time Series Plots for Nitrite Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

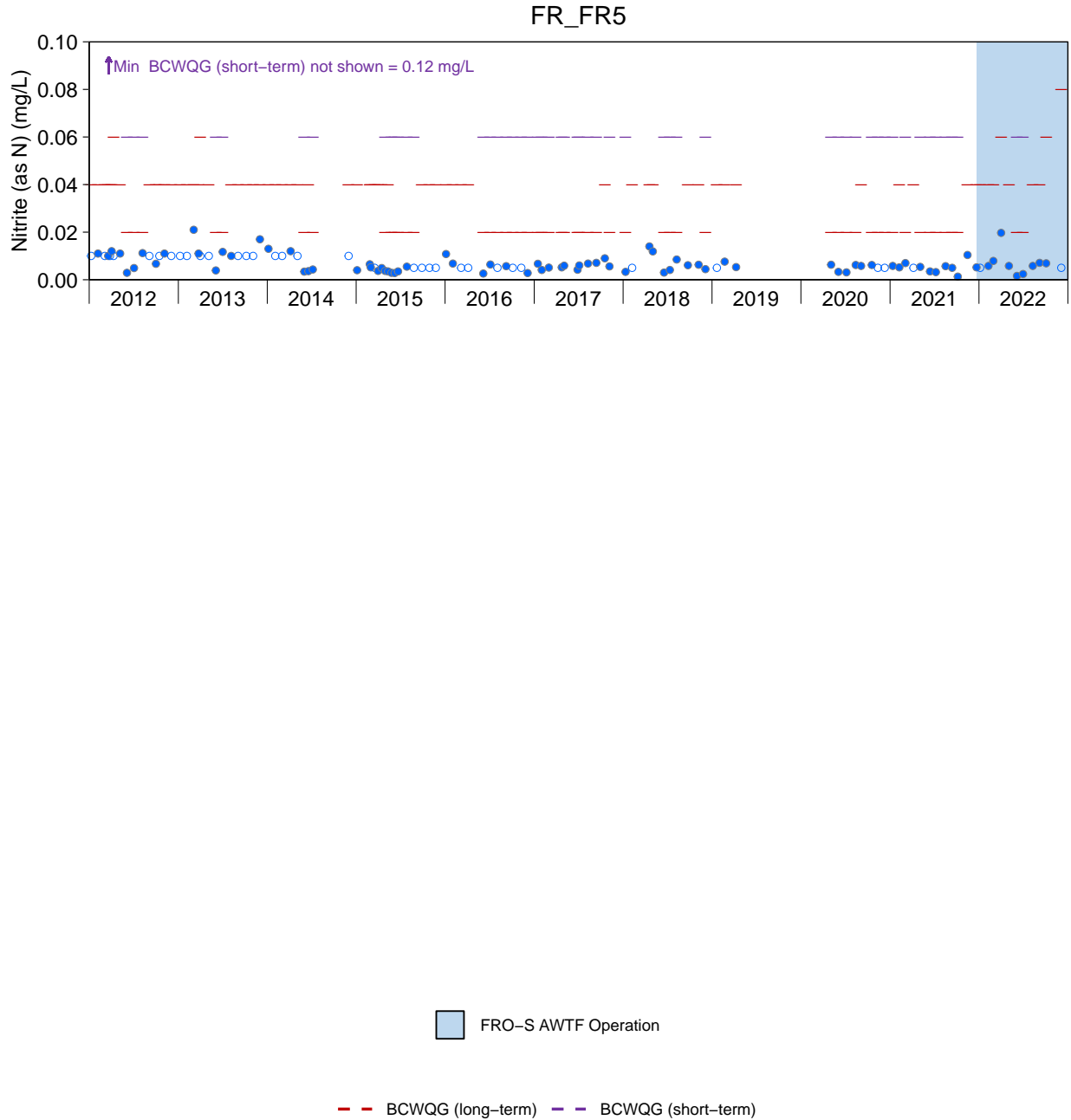


Figure D.15: Time Series Plots for Nitrite Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

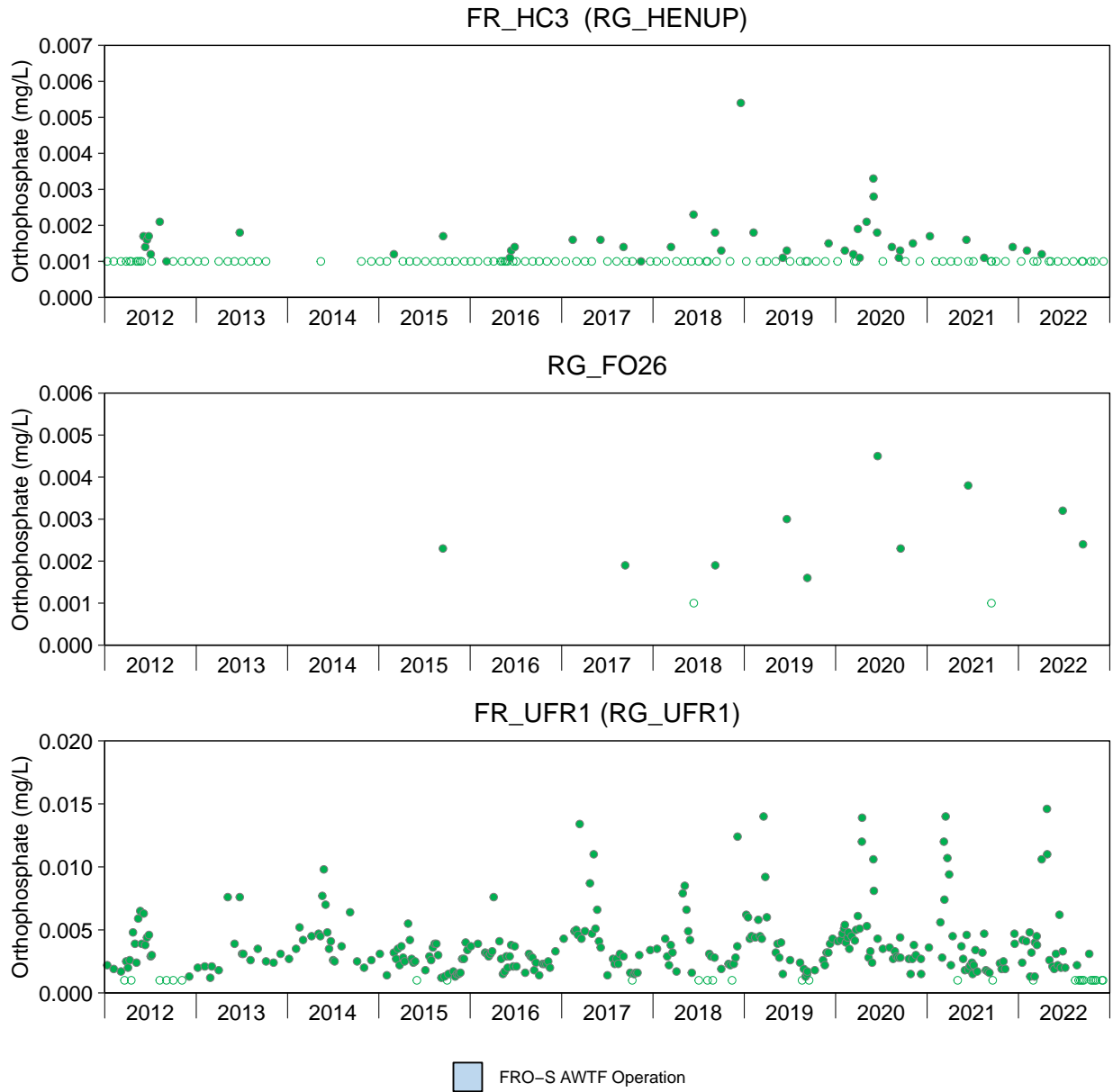


Figure D.16: Time Series Plots for Orthophosphate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. The interim screening values for total phosphorus (0.03 mg/L) and orthophosphate (0.006 mg/L) represent the 97.5th percentile of concentrations observed in reference areas over the growing season (Minnow 2020).

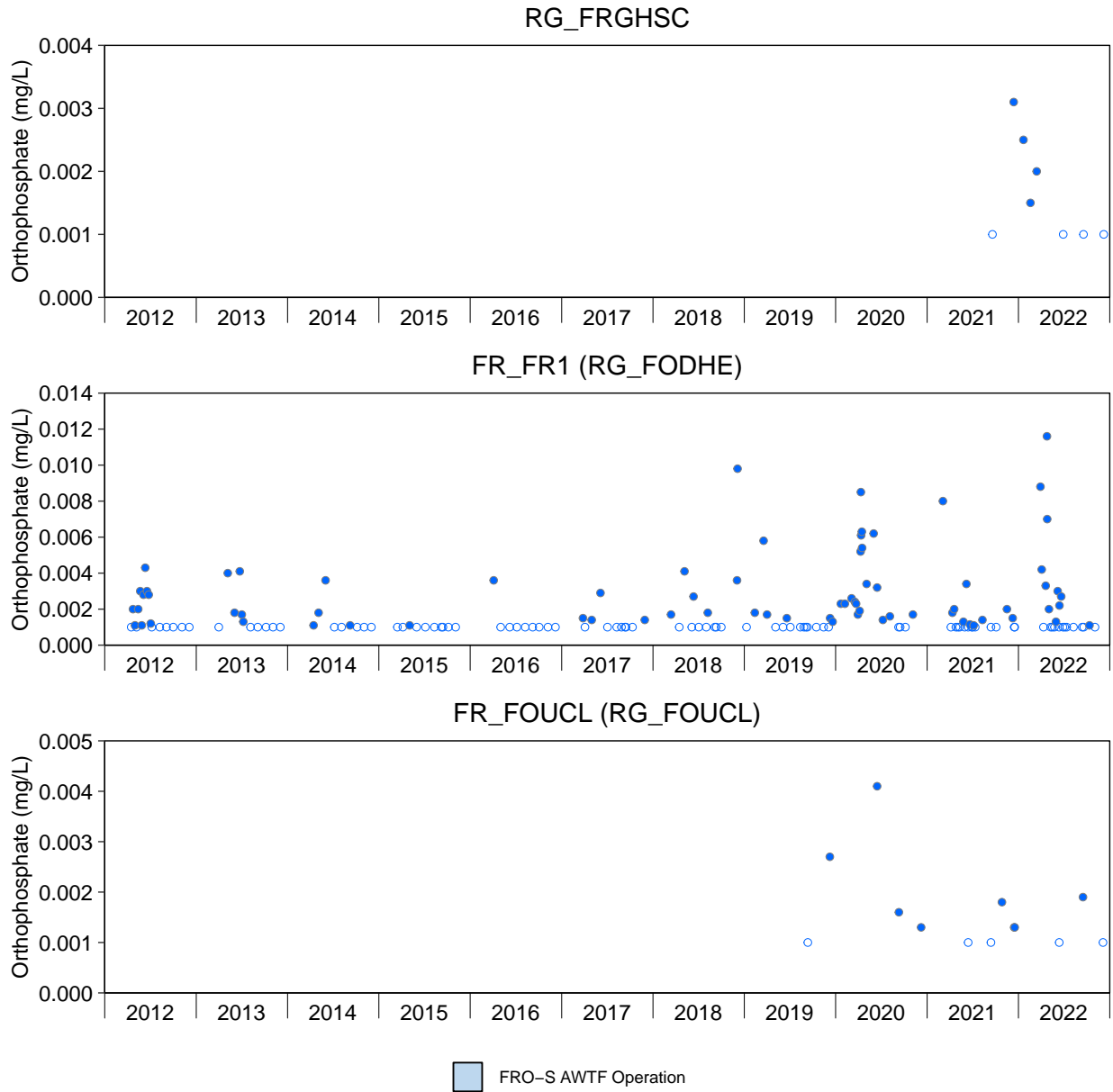


Figure D.16: Time Series Plots for Orthophosphate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. The interim screening values for total phosphorus (0.03 mg/L) and orthophosphate (0.006 mg/L) represent the 97.5th percentile of concentrations observed in reference areas over the growing season (Minnow 2020).

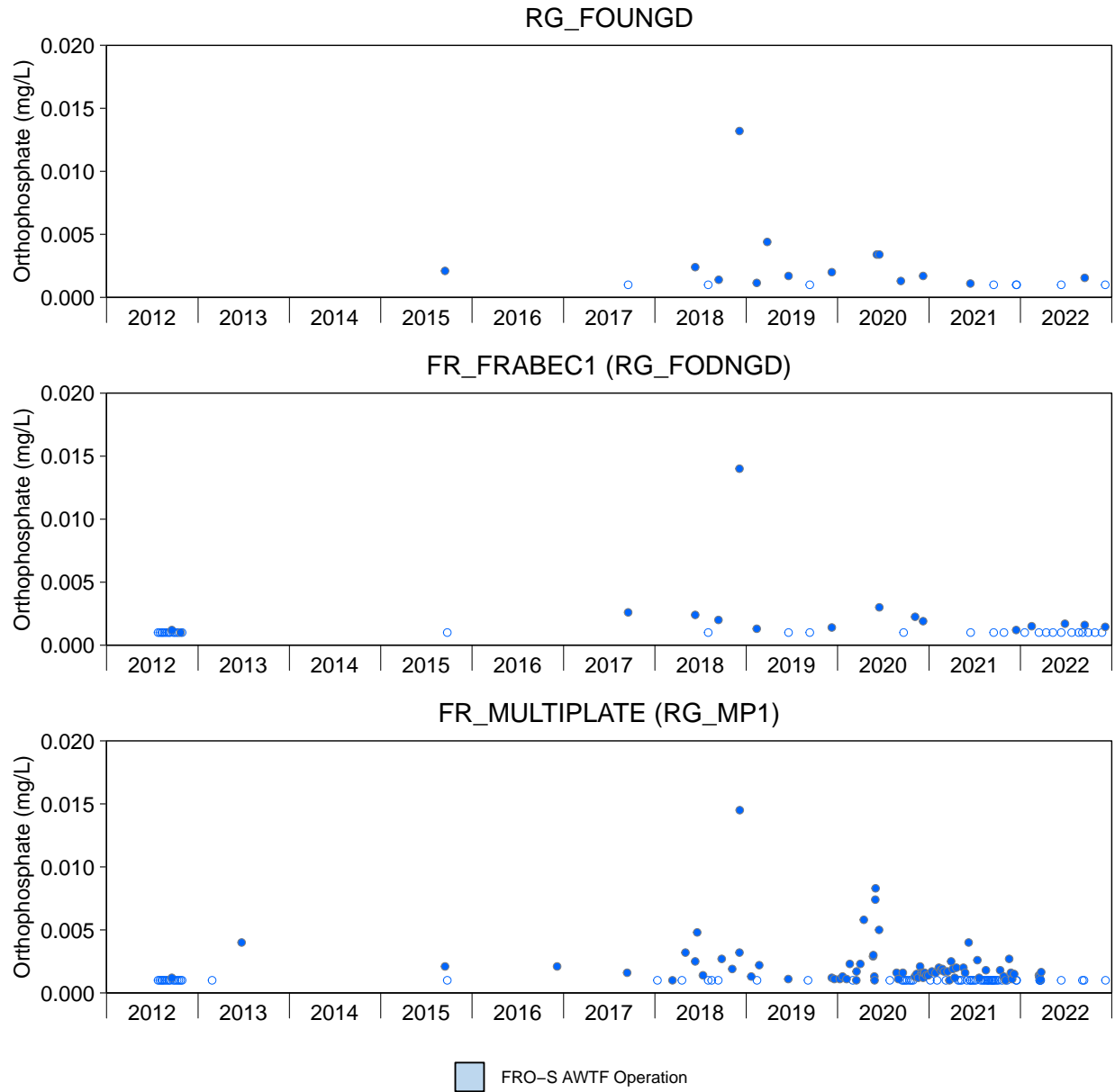


Figure D.16: Time Series Plots for Orthophosphate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. The interim screening values for total phosphorus (0.03 mg/L) and orthophosphate (0.006 mg/L) represent the 97.5th percentile of concentrations observed in reference areas over the growing season (Minnow 2020).

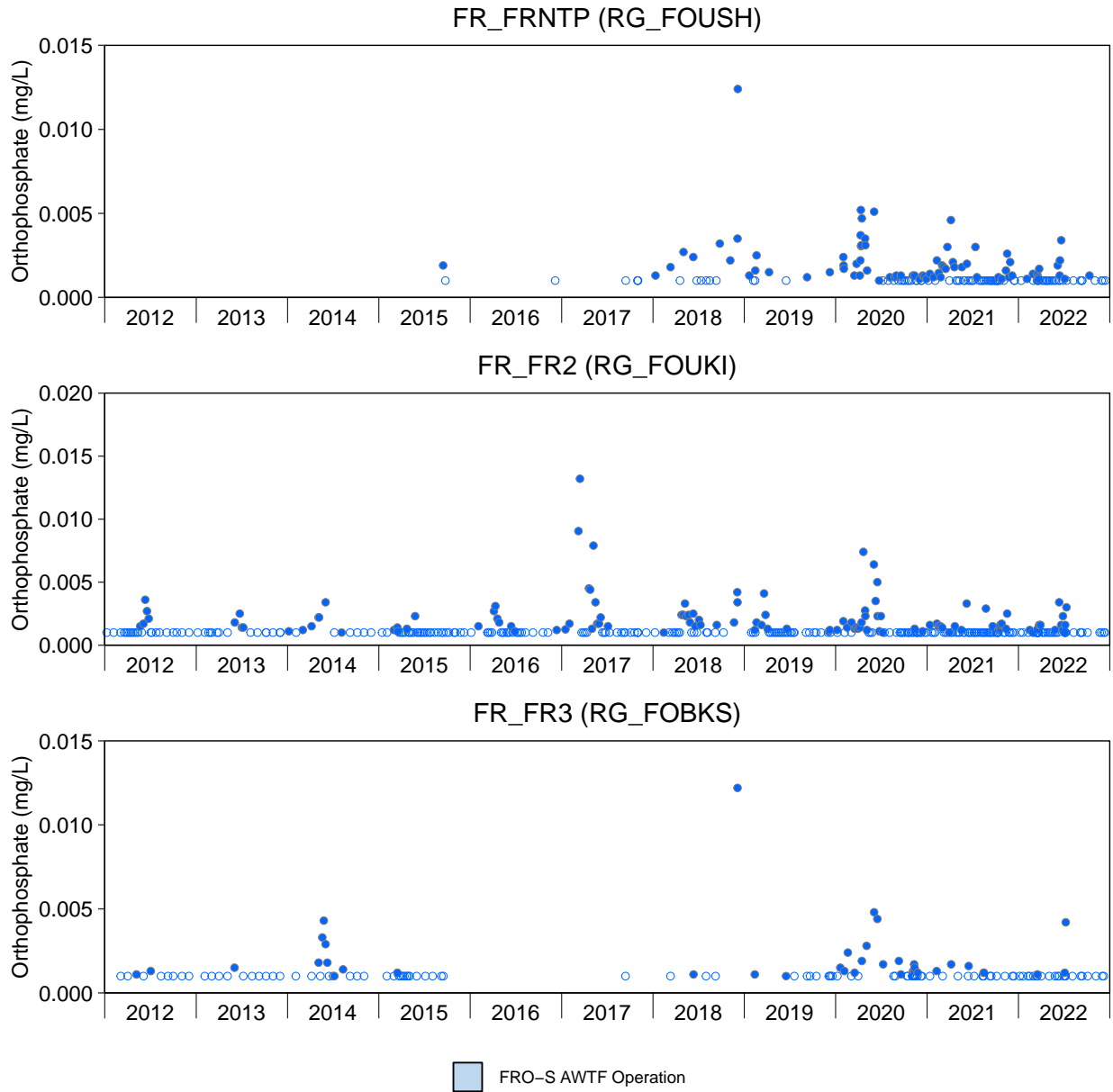


Figure D.16: Time Series Plots for Orthophosphate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. The interim screening values for total phosphorus (0.03 mg/L) and orthophosphate (0.006 mg/L) represent the 97.5th percentile of concentrations observed in reference areas over the growing season (Minnow 2020).

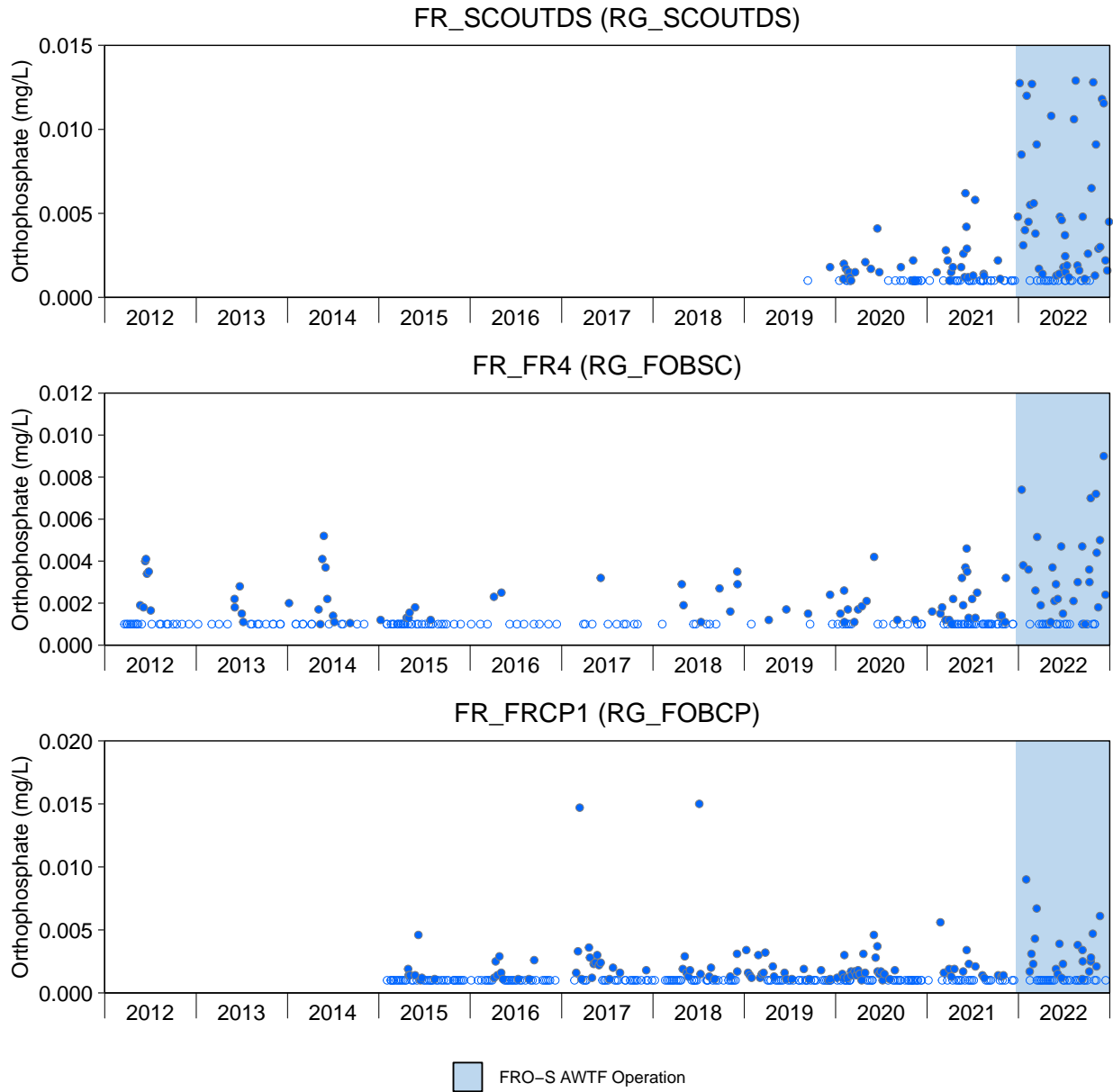


Figure D.16: Time Series Plots for Orthophosphate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. The interim screening values for total phosphorus (0.03 mg/L) and orthophosphate (0.006 mg/L) represent the 97.5th percentile of concentrations observed in reference areas over the growing season (Minnow 2020).

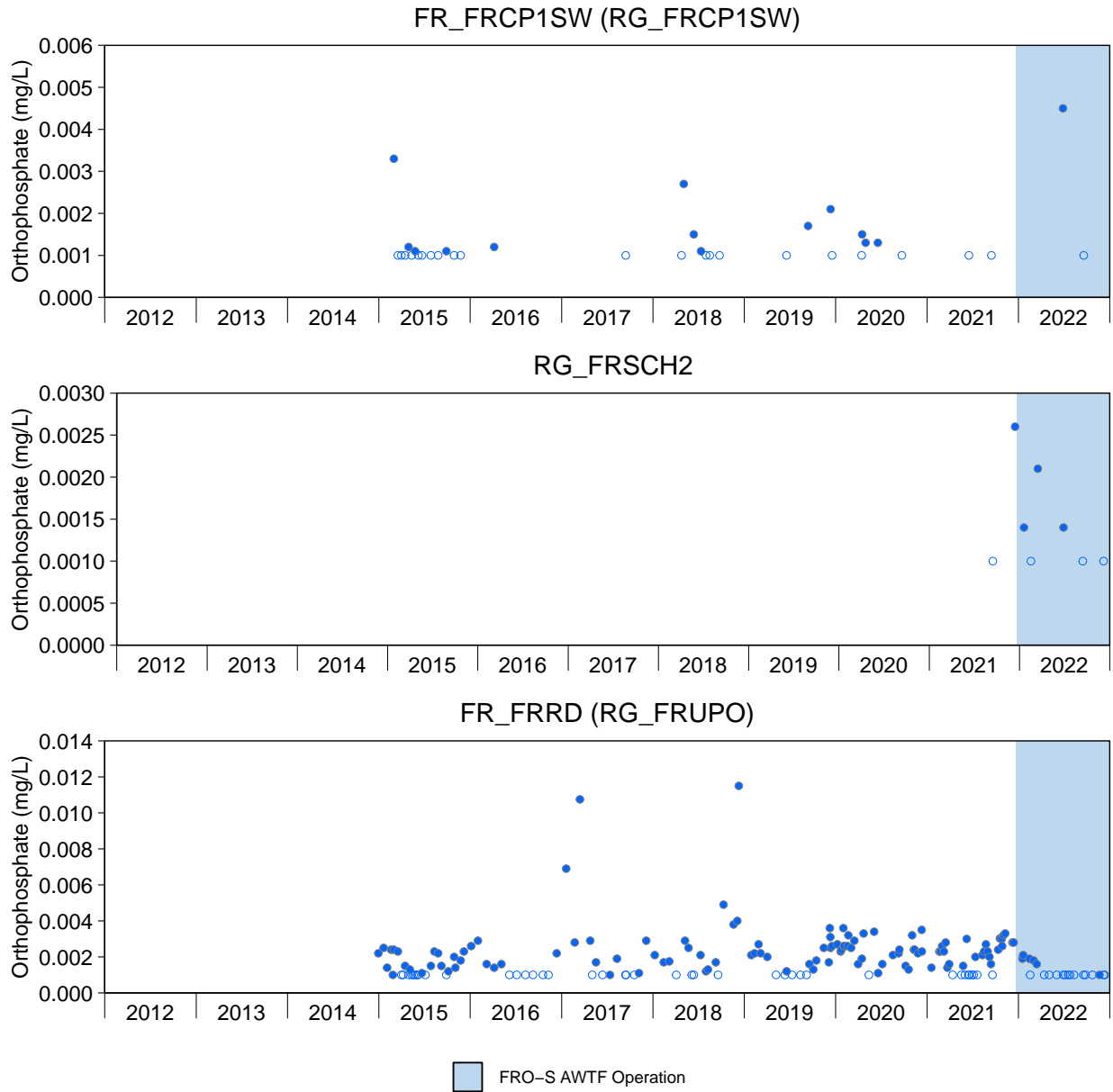


Figure D.16: Time Series Plots for Orthophosphate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. The interim screening values for total phosphorus (0.03 mg/L) and orthophosphate (0.006 mg/L) represent the 97.5th percentile of concentrations observed in reference areas over the growing season (Minnow 2020).

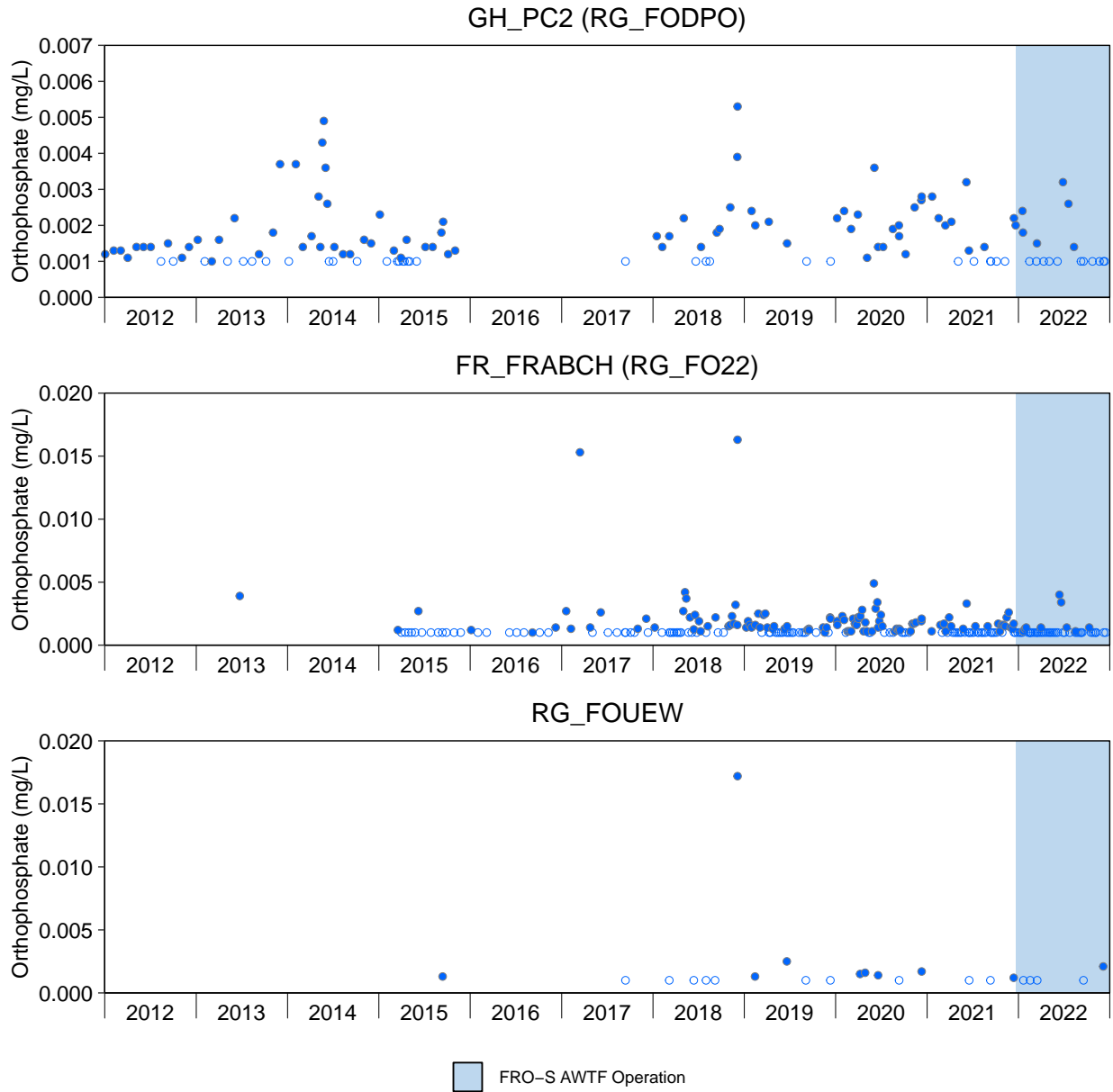
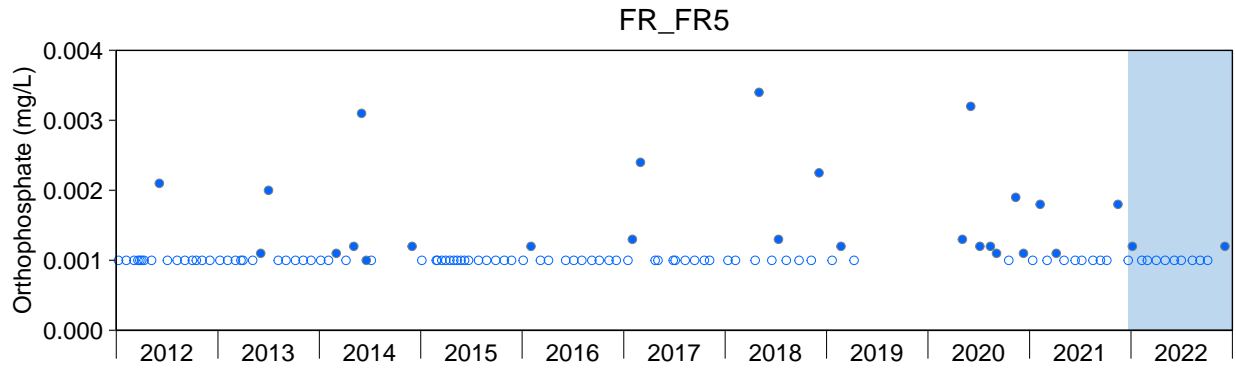


Figure D.16: Time Series Plots for Orthophosphate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. The interim screening values for total phosphorus (0.03 mg/L) and orthophosphate (0.006 mg/L) represent the 97.5th percentile of concentrations observed in reference areas over the growing season (Minnow 2020).



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Figure D.16: Time Series Plots for Orthophosphate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. The interim screening values for total phosphorus (0.03 mg/L) and orthophosphate (0.006 mg/L) represent the 97.5th percentile of concentrations observed in reference areas over the growing season (Minnow 2020).

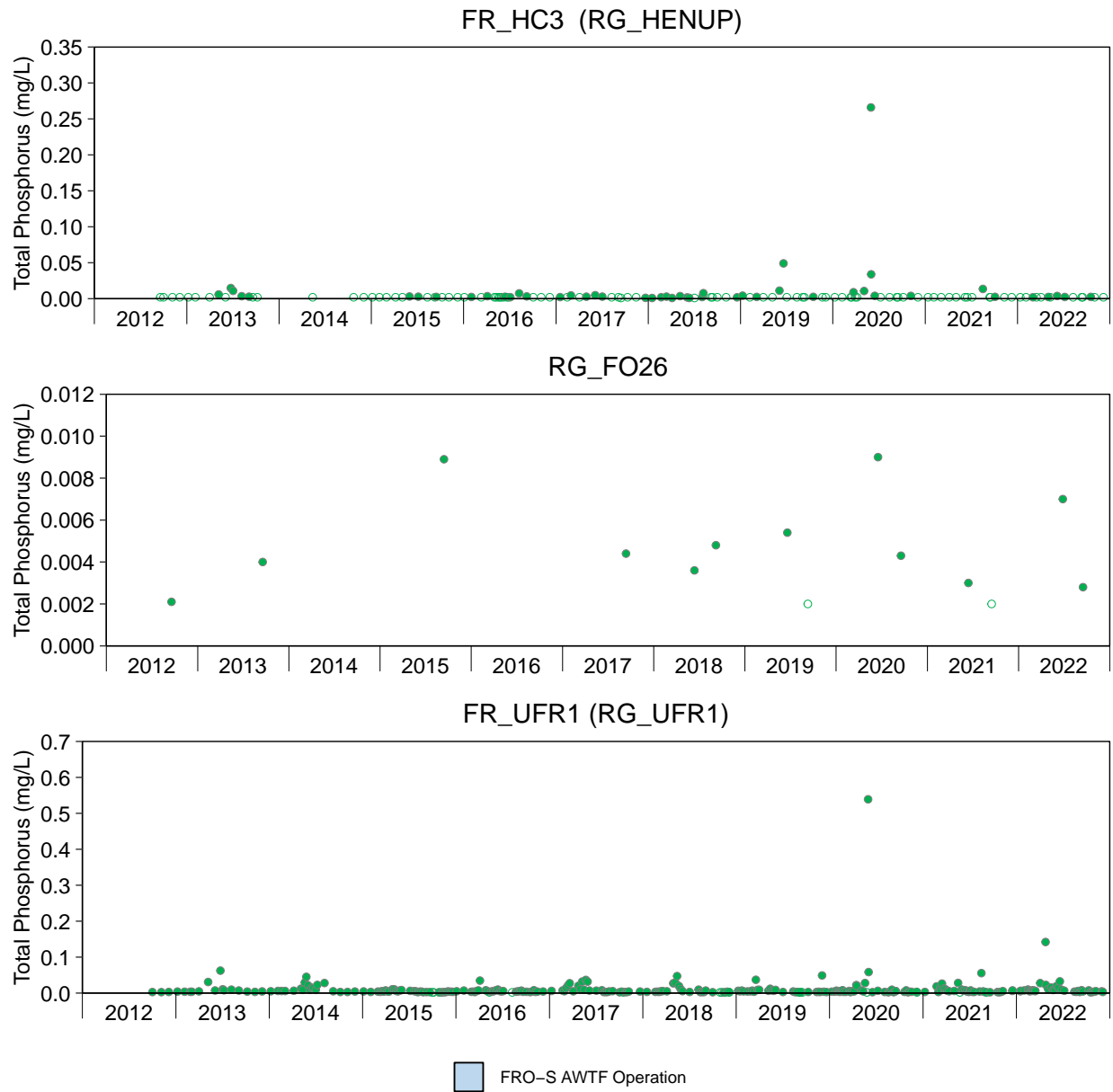


Figure D.17: Time Series Plots for Total Phosphorus Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. The interim screening values for total phosphorus (0.03 mg/L) and orthophosphate (0.006 mg/L) represent the 97.5th percentile of concentrations observed in reference areas over the growing season (Minnow 2020). Values with high LRLs of 0.3 mg/L in 2012 are not shown.

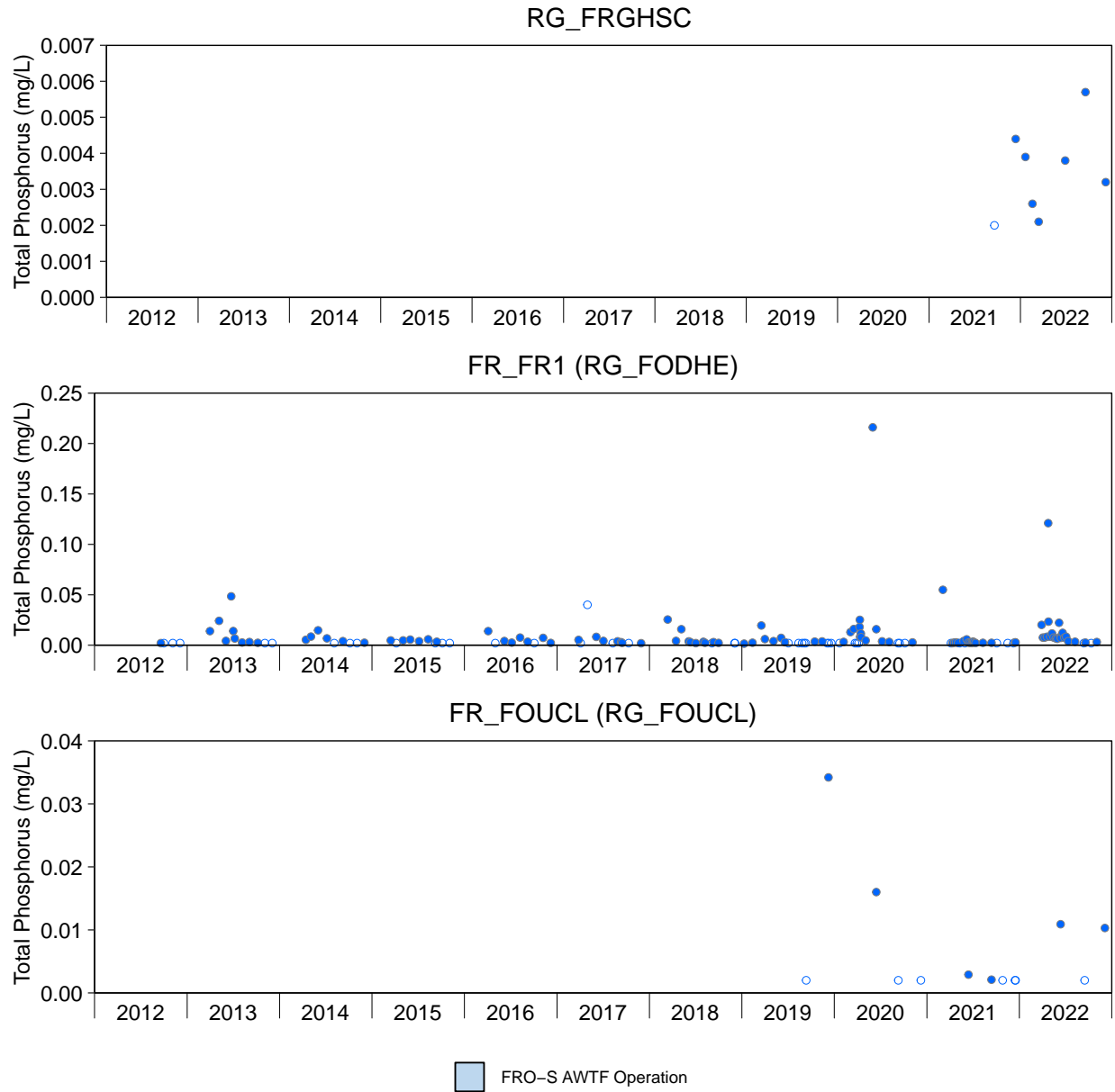


Figure D.17: Time Series Plots for Total Phosphorus Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. The interim screening values for total phosphorus (0.03 mg/L) and orthophosphate (0.006 mg/L) represent the 97.5th percentile of concentrations observed in reference areas over the growing season (Minnow 2020). Values with high LRLs of 0.3 mg/L in 2012 are not shown.

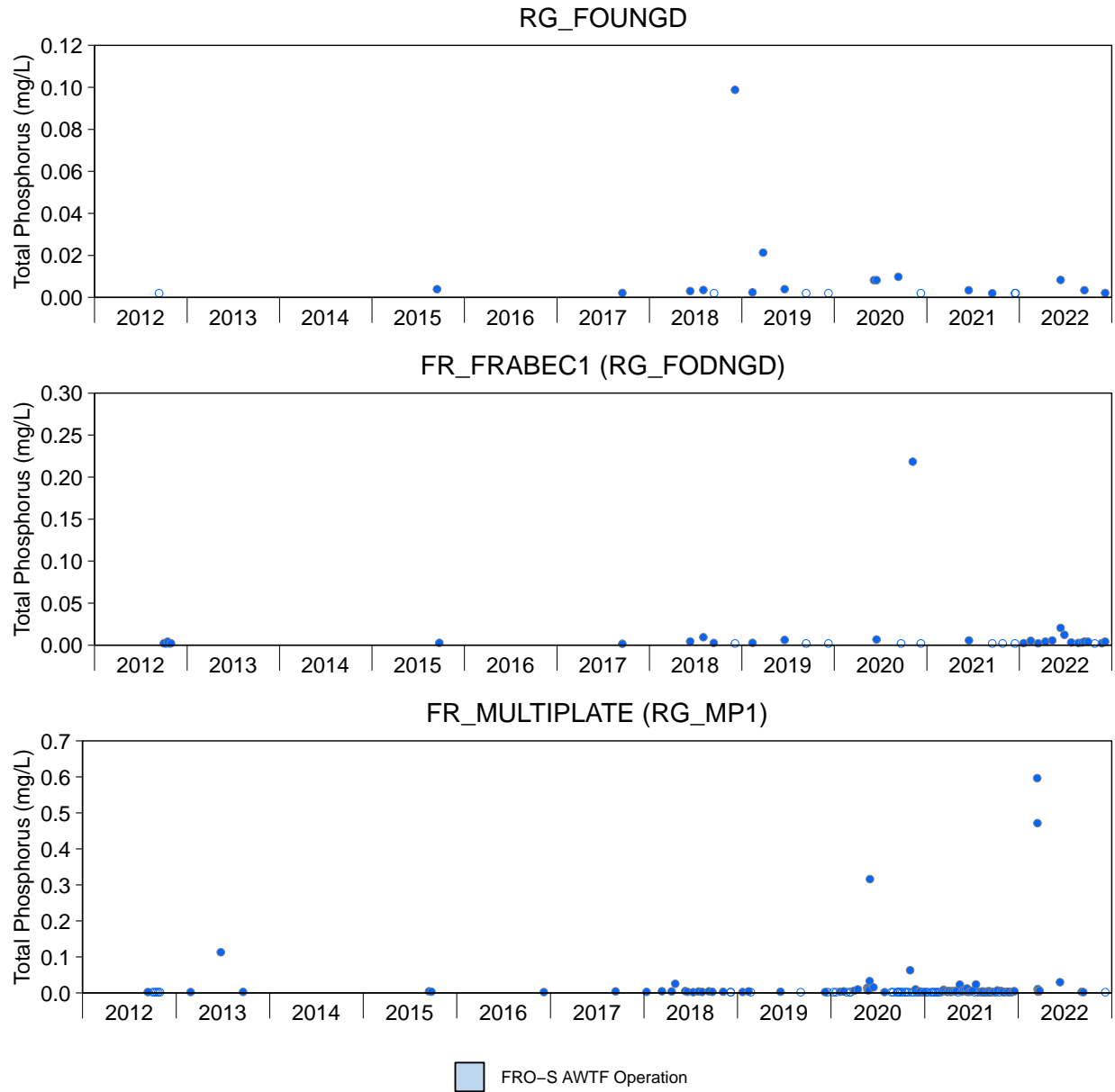


Figure D.17: Time Series Plots for Total Phosphorus Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. The interim screening values for total phosphorus (0.03 mg/L) and orthophosphate (0.006 mg/L) represent the 97.5th percentile of concentrations observed in reference areas over the growing season (Minnow 2020). Values with high LRLs of 0.3 mg/L in 2012 are not shown.

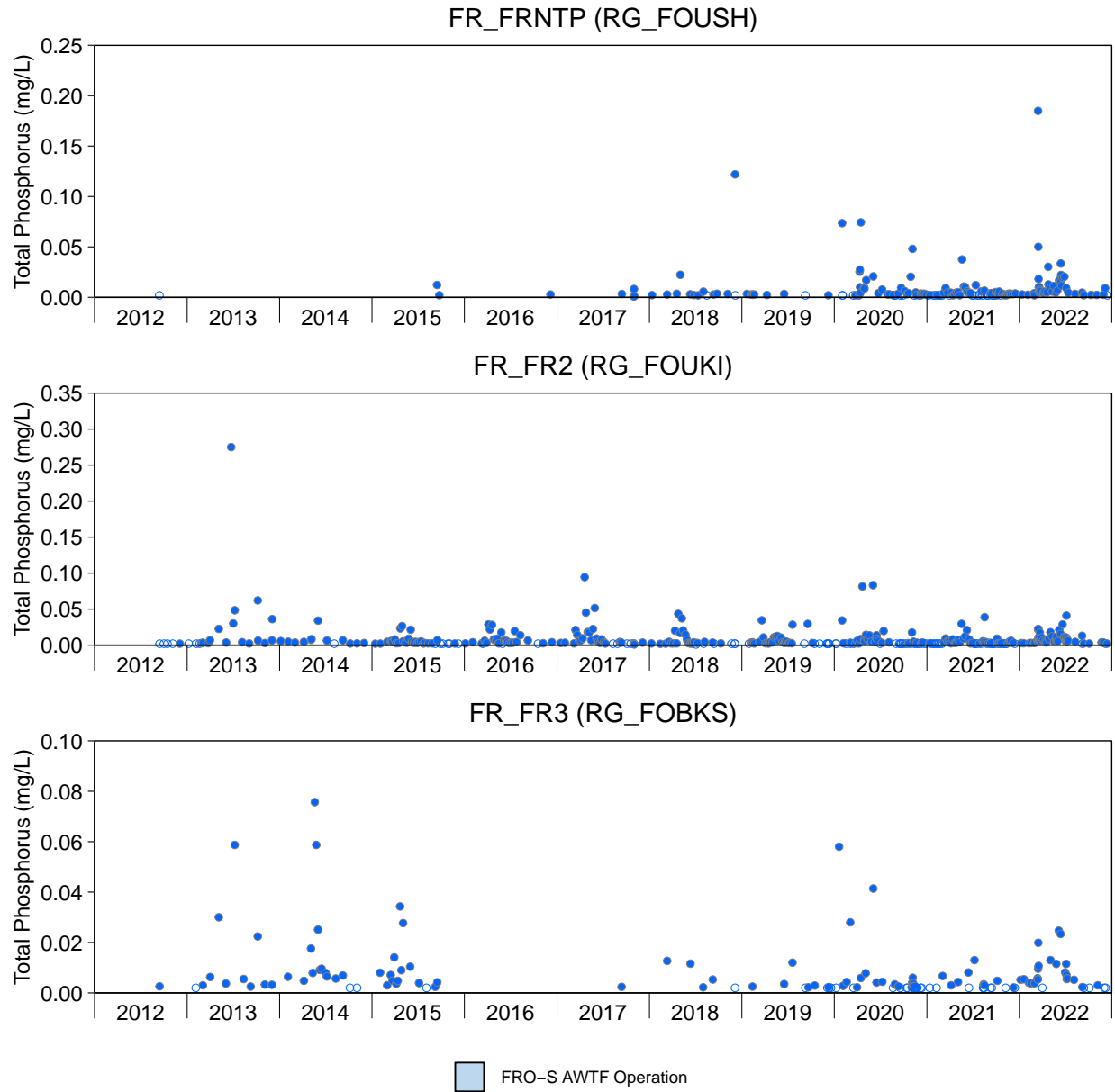


Figure D.17: Time Series Plots for Total Phosphorus Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. The interim screening values for total phosphorus (0.03 mg/L) and orthophosphate (0.006 mg/L) represent the 97.5th percentile of concentrations observed in reference areas over the growing season (Minnow 2020). Values with high LRLs of 0.3 mg/L in 2012 are not shown.

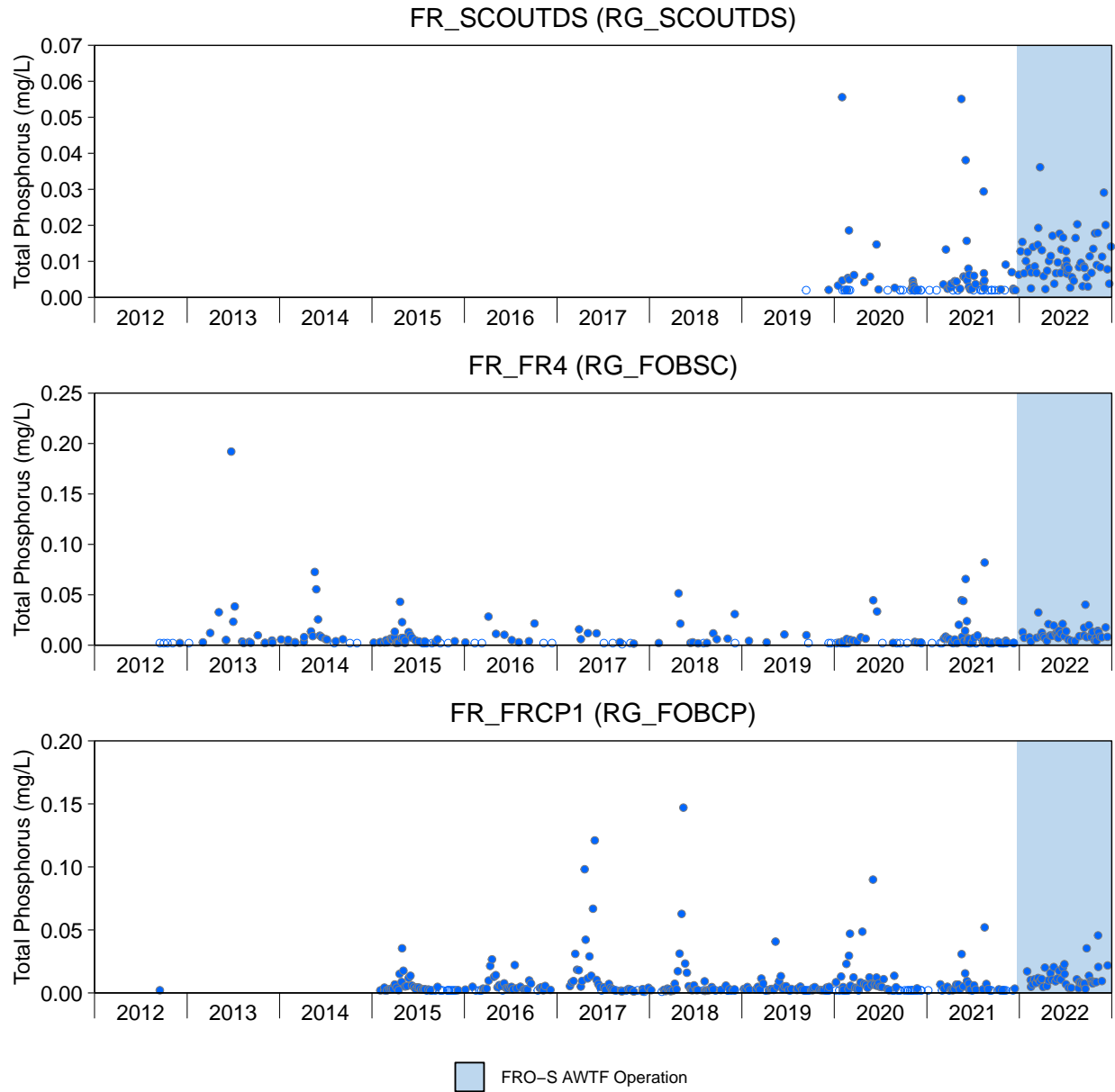


Figure D.17: Time Series Plots for Total Phosphorus Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. The interim screening values for total phosphorus (0.03 mg/L) and orthophosphate (0.006 mg/L) represent the 97.5th percentile of concentrations observed in reference areas over the growing season (Minnow 2020). Values with high LRLs of 0.3 mg/L in 2012 are not shown.

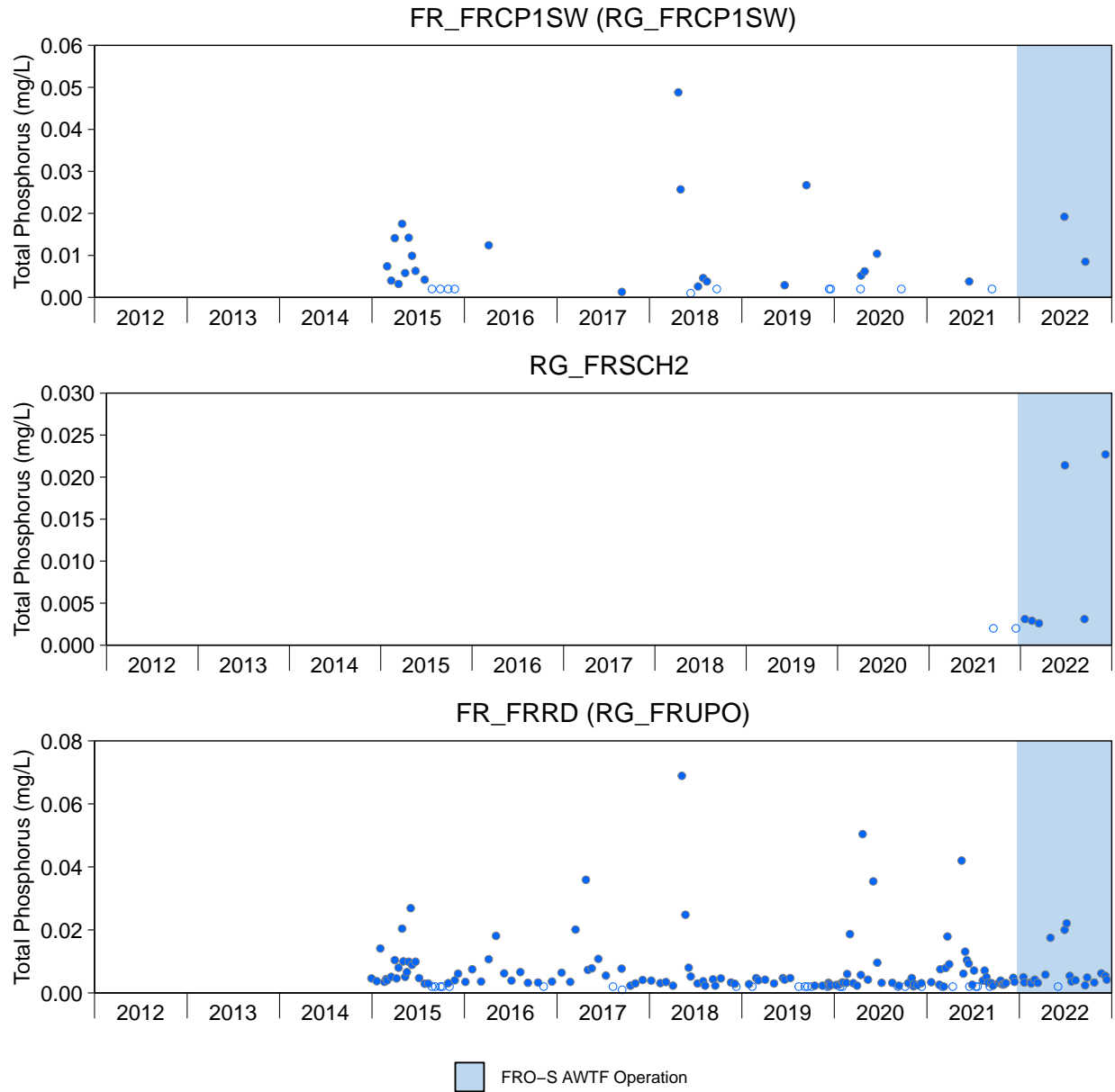


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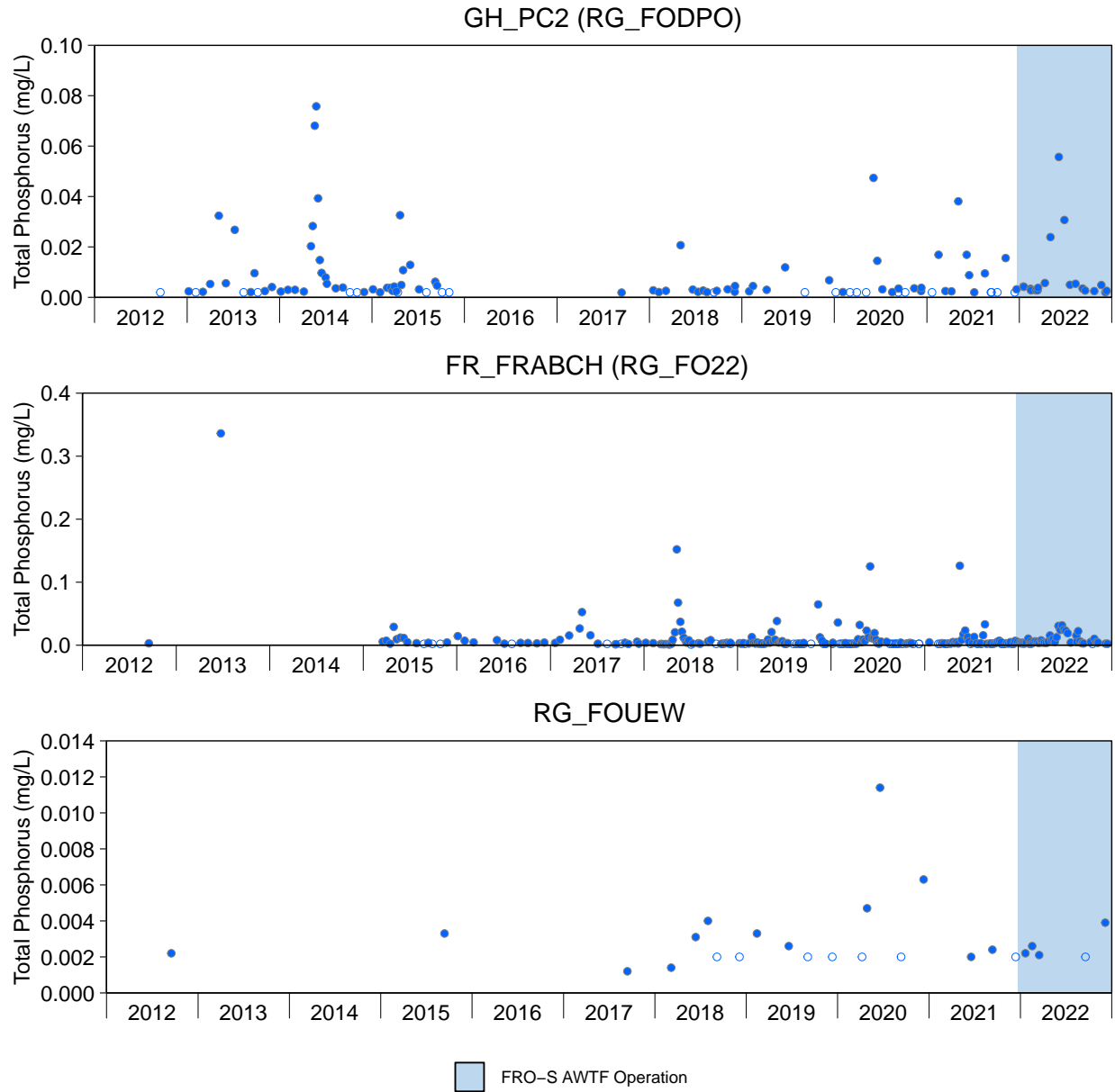
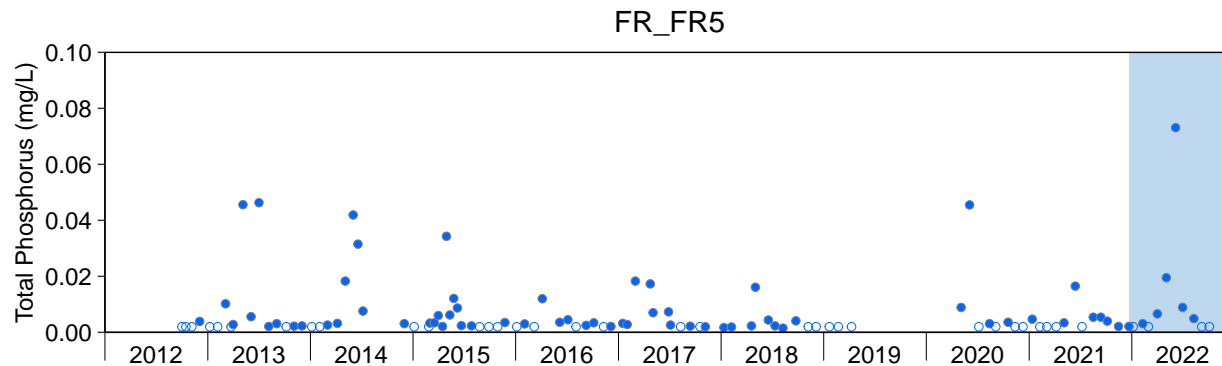


Figure D.17: Time Series Plots for Total Phosphorus Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. The interim screening values for total phosphorus (0.03 mg/L) and orthophosphate (0.006 mg/L) represent the 97.5th percentile of concentrations observed in reference areas over the growing season (Minnow 2020). Values with high LRLs of 0.3 mg/L in 2012 are not shown.



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Figure D.17: Time Series Plots for Total Phosphorus Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis. The interim screening values for total phosphorus (0.03 mg/L) and orthophosphate (0.006 mg/L) represent the 97.5th percentile of concentrations observed in reference areas over the growing season (Minnow 2020). Values with high LRLs of 0.3 mg/L in 2012 are not shown.

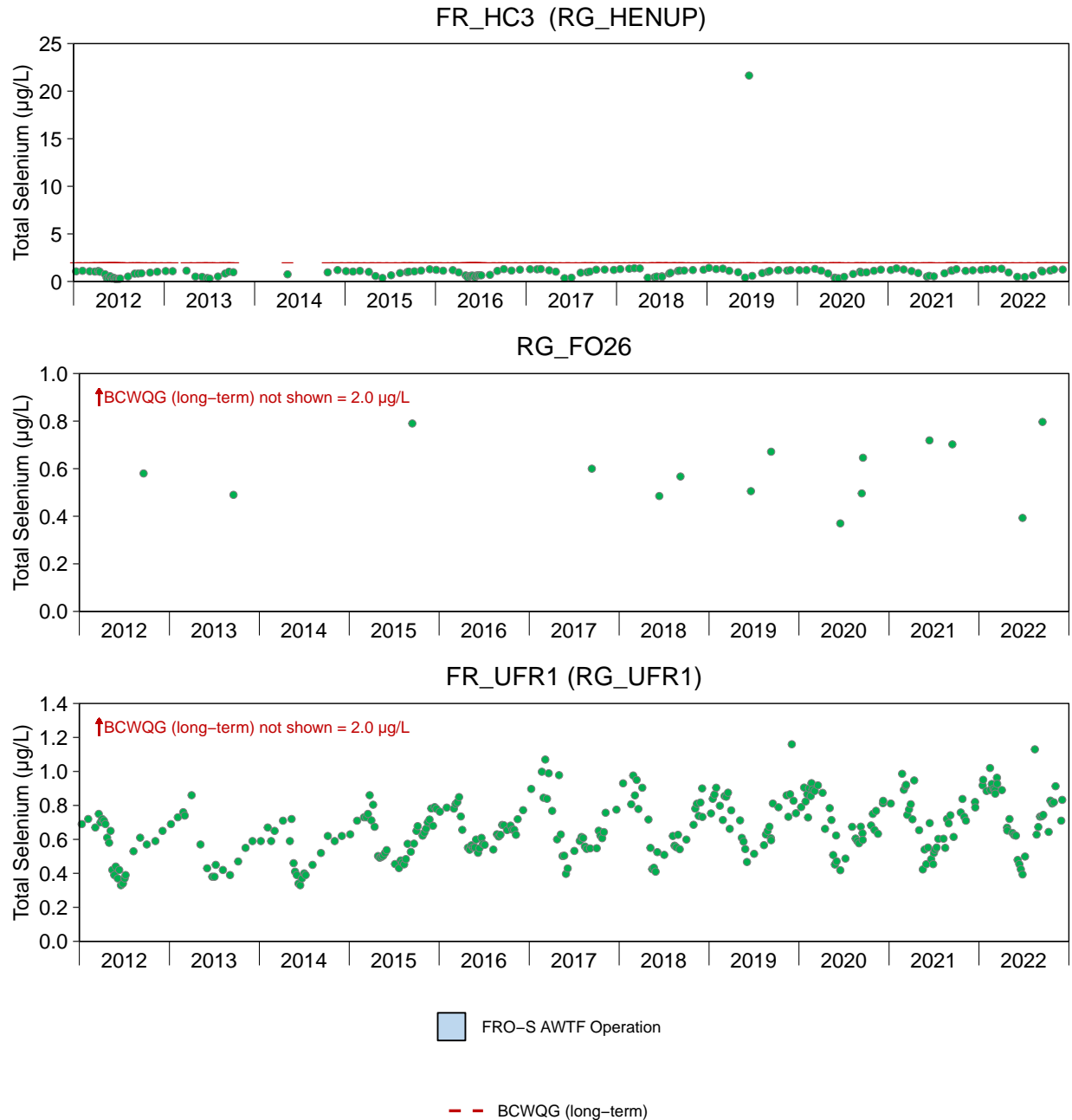


Figure D.18: Time Series Plots for Total Selenium Concentrations from FRO LAEMP Sampling Stations, 2012 to 2022

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

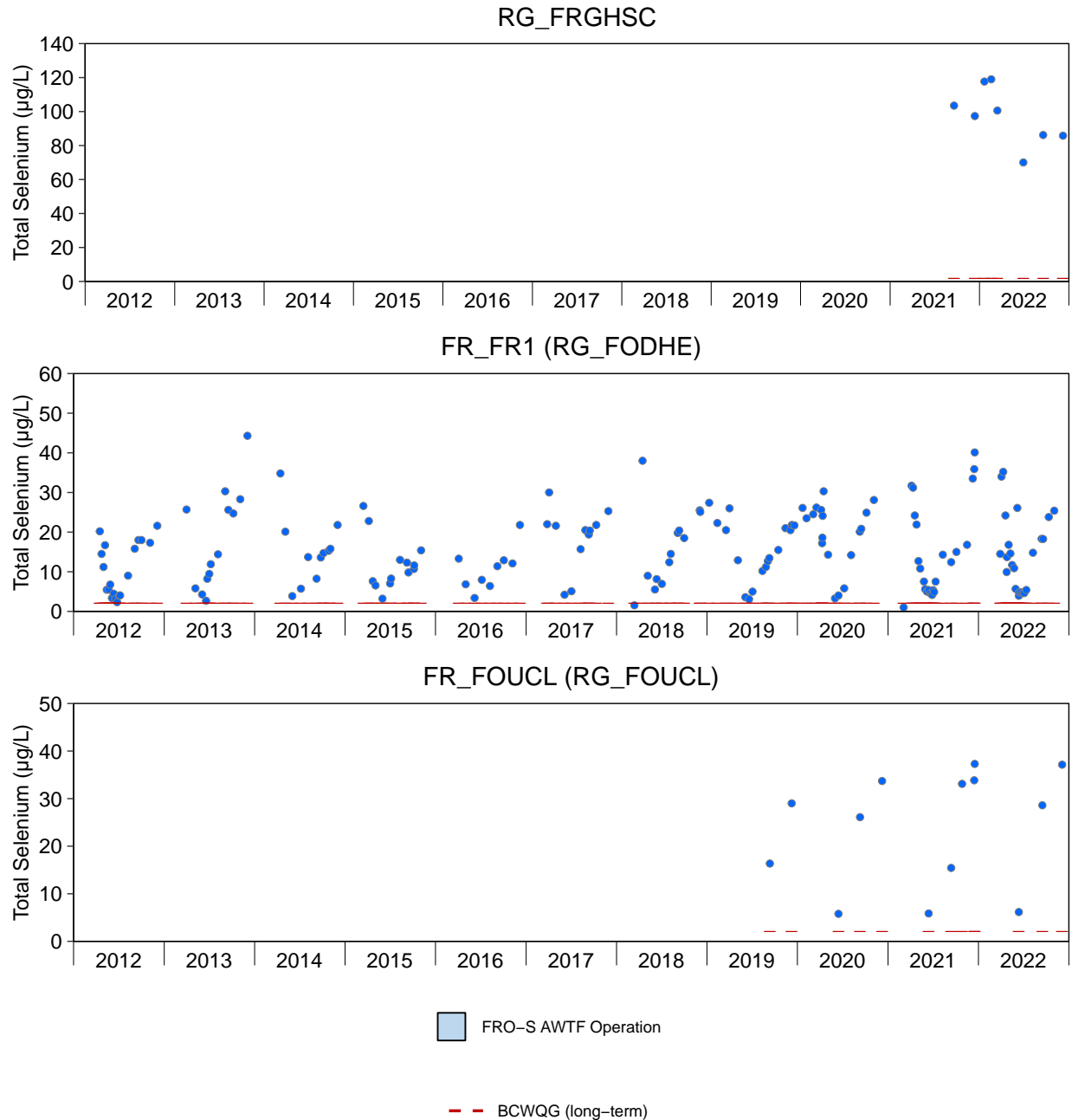


Figure D.18: Time Series Plots for Total Selenium Concentrations from FRO LAEMP Sampling Stations, 2012 to 2022

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

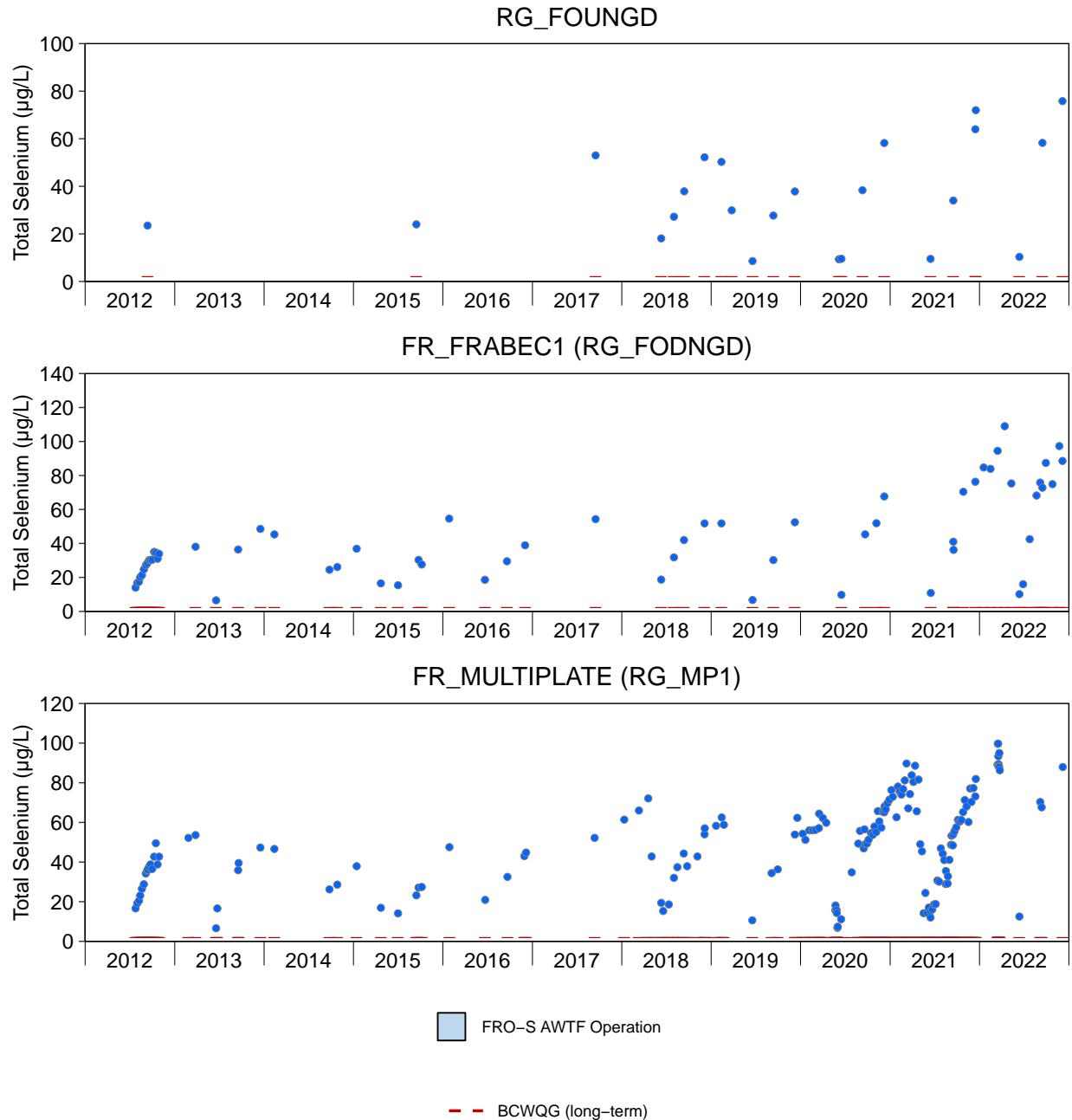


Figure D.18: Time Series Plots for Total Selenium Concentrations from FRO LAEMP Sampling Stations, 2012 to 2022

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

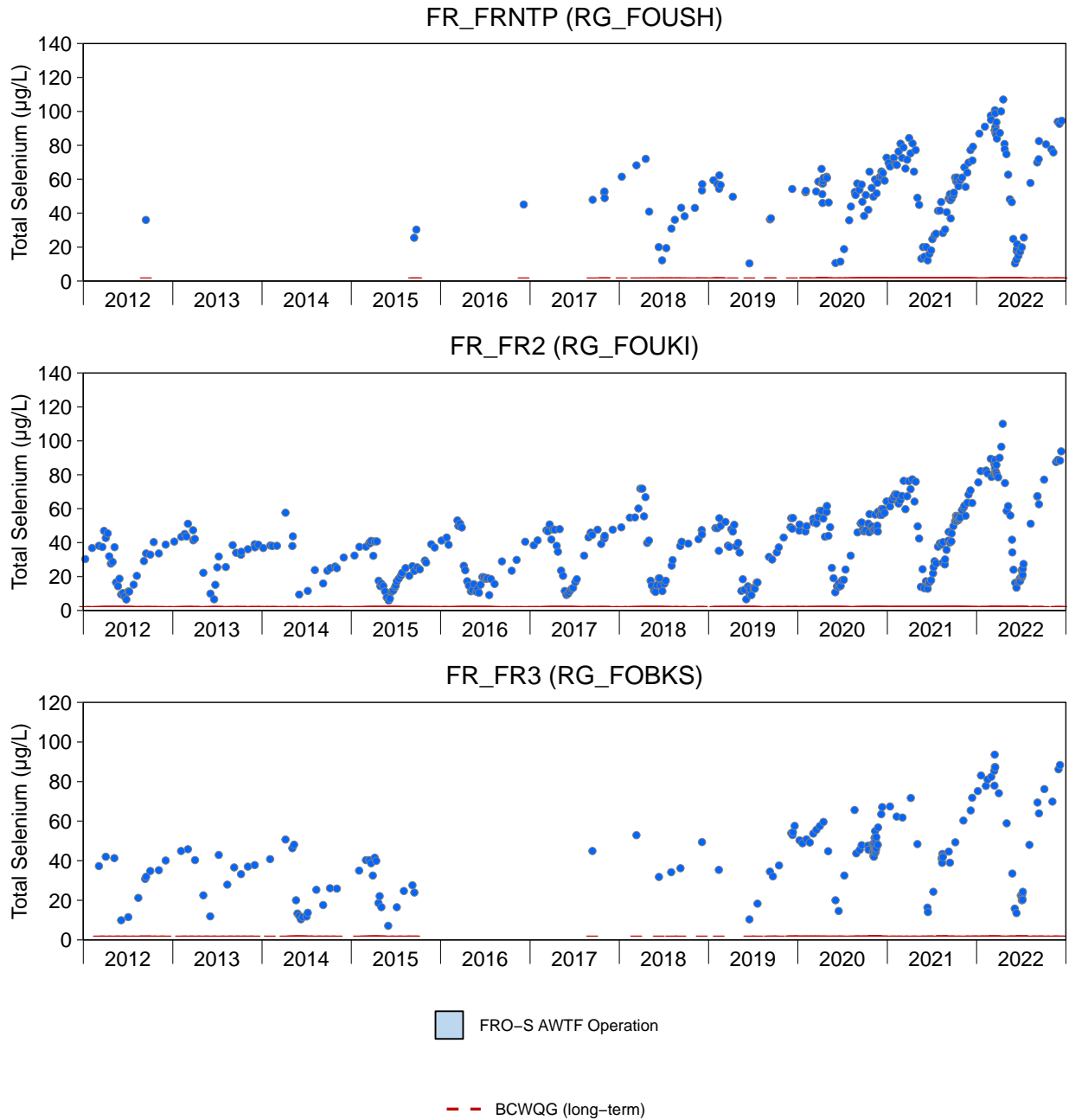


Figure D.18: Time Series Plots for Total Selenium Concentrations from FRO LAEMP Sampling Stations, 2012 to 2022

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

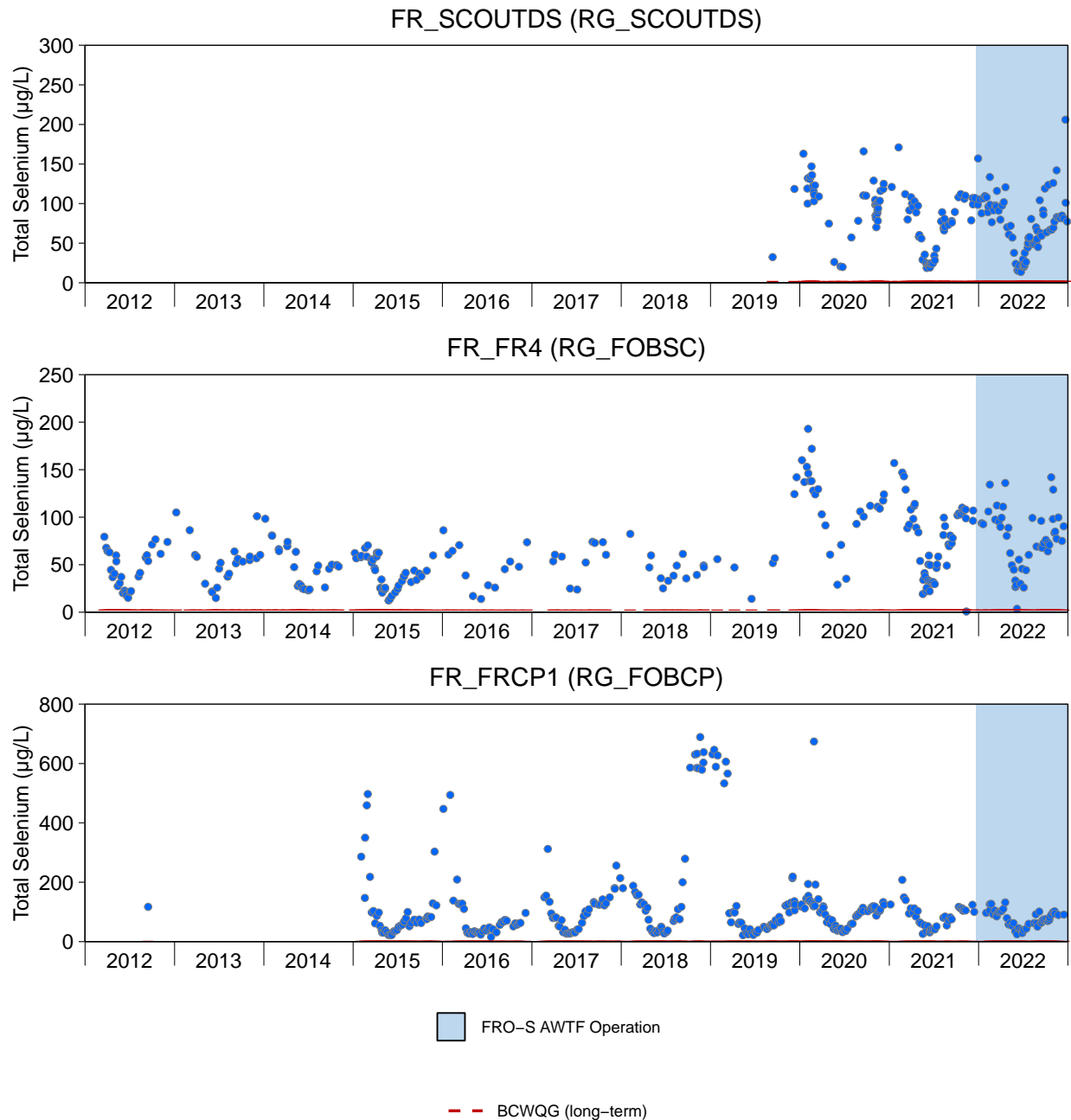


Figure D.18: Time Series Plots for Total Selenium Concentrations from FRO LAEMP Sampling Stations, 2012 to 2022

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

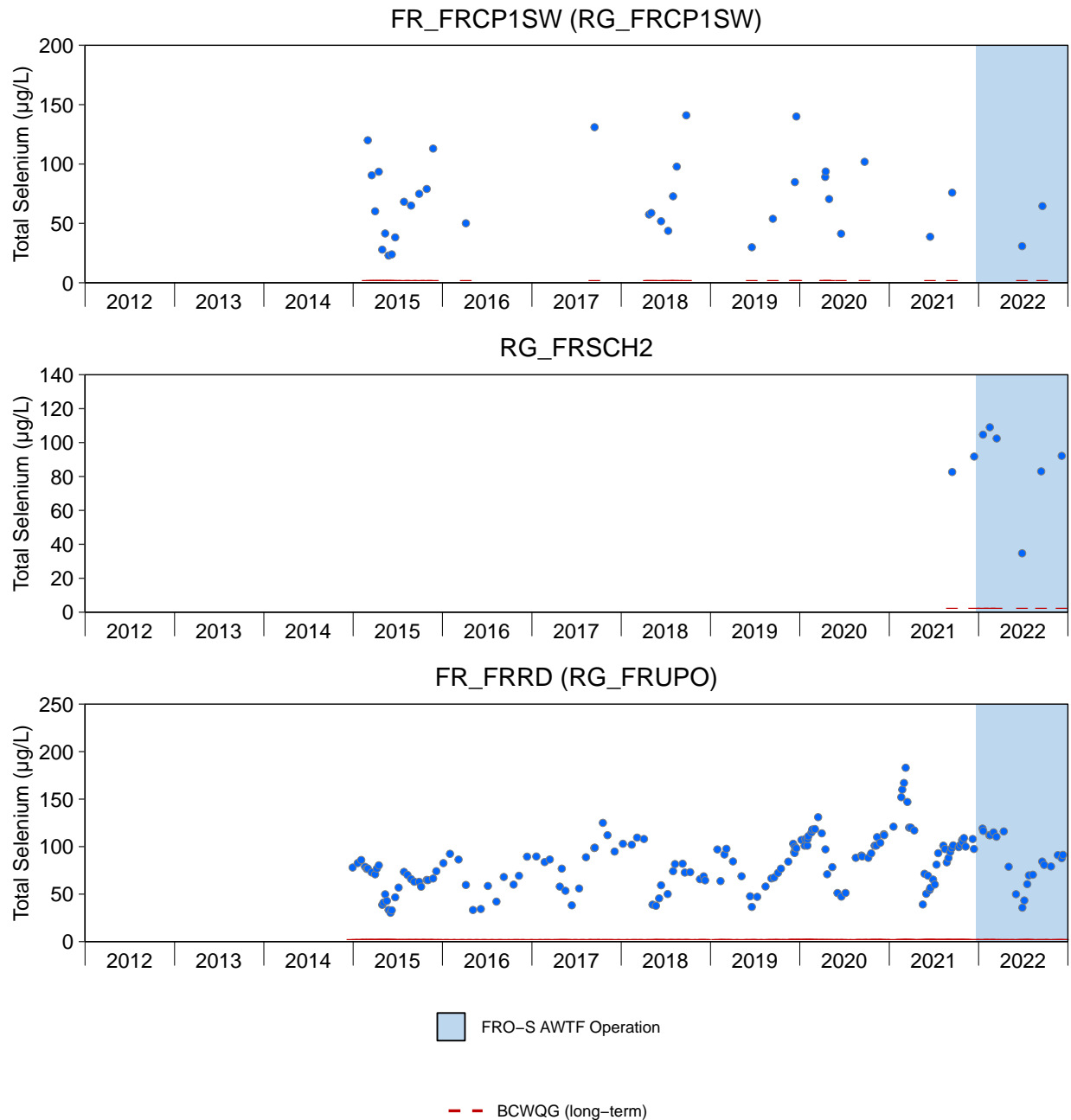


Figure D.18: Time Series Plots for Total Selenium Concentrations from FRO LAEMP Sampling Stations, 2012 to 2022

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

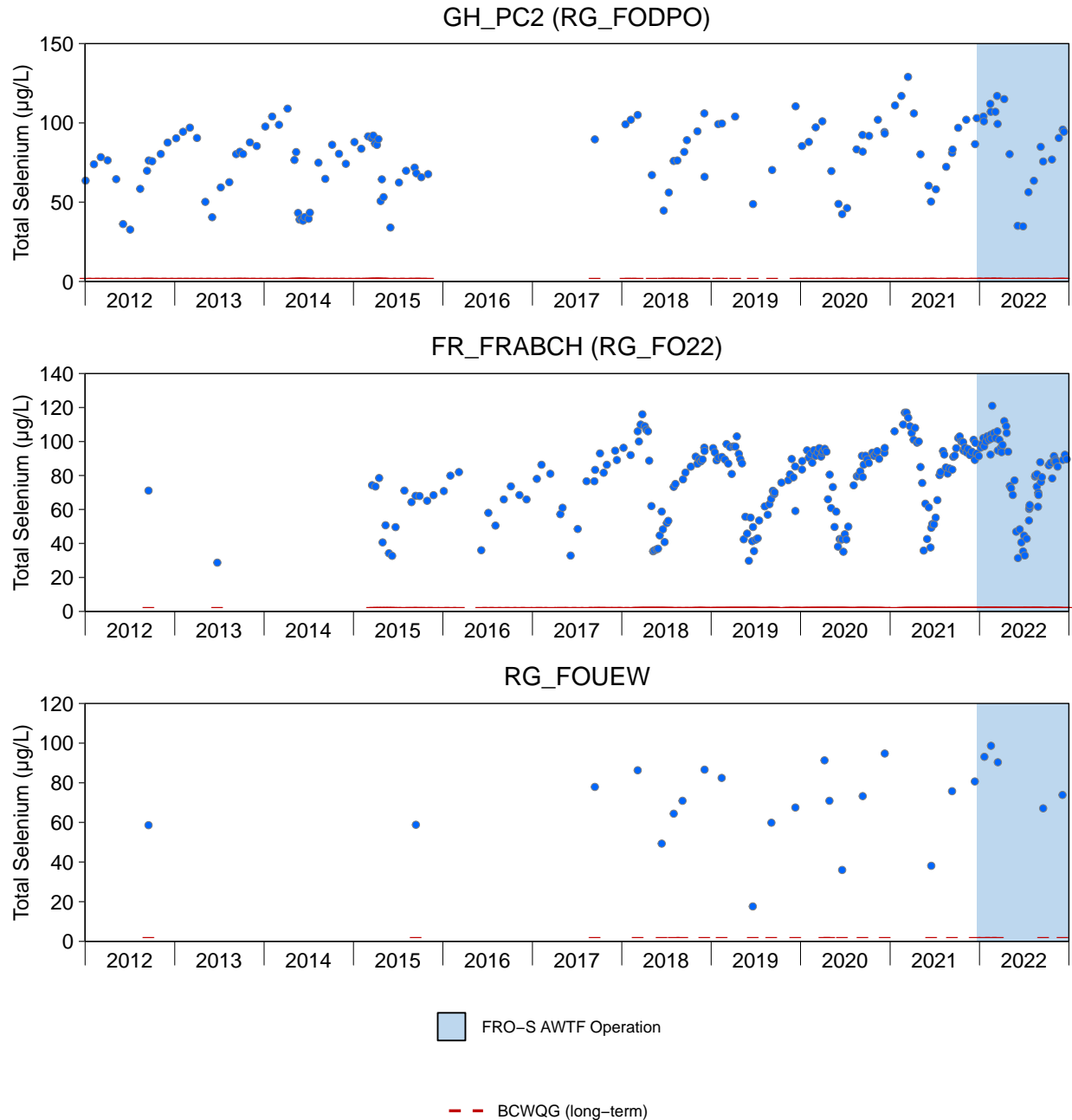


Figure D.18: Time Series Plots for Total Selenium Concentrations from FRO LAEMP Sampling Stations, 2012 to 2022

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

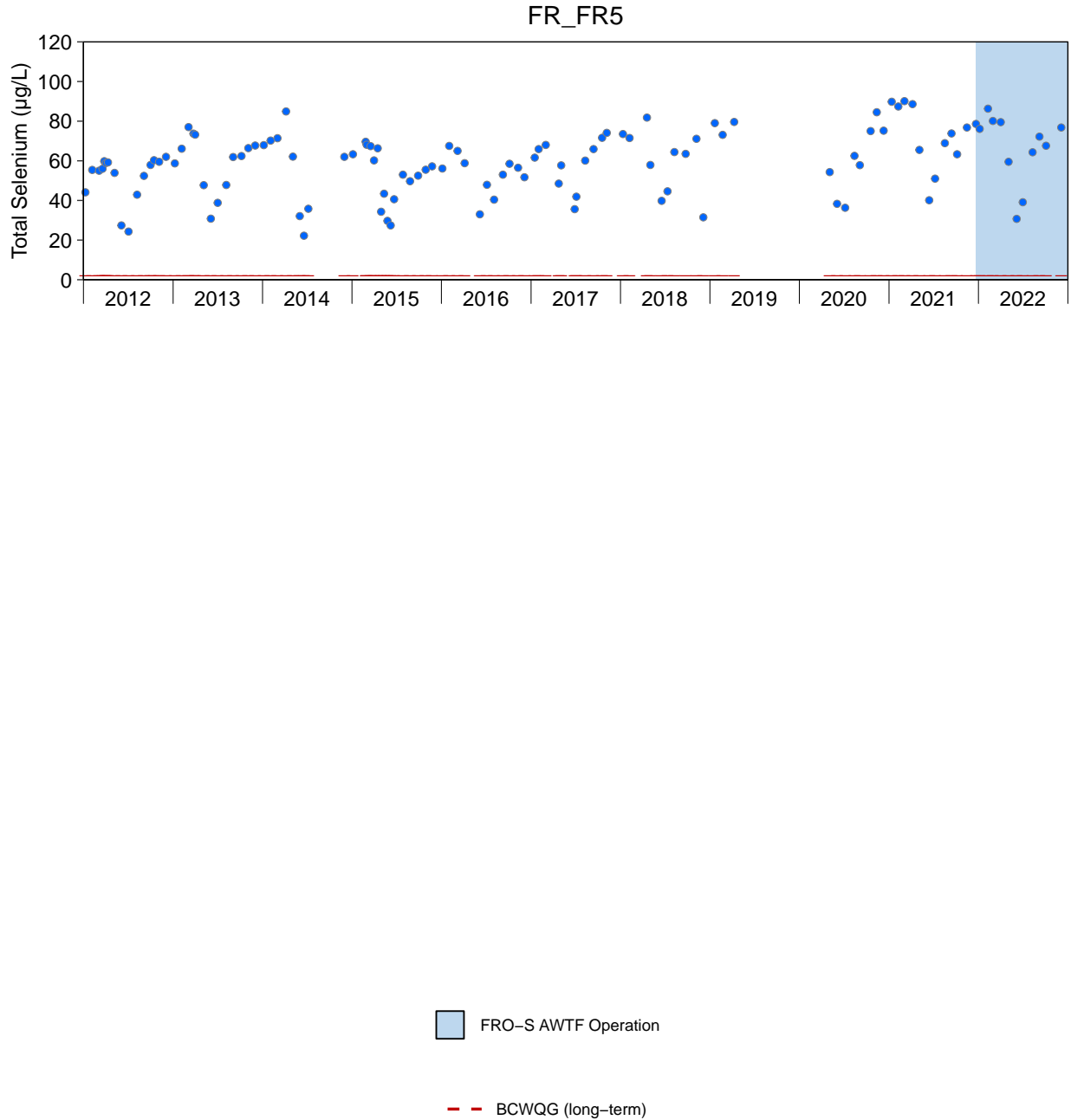


Figure D.18: Time Series Plots for Total Selenium Concentrations from FRO LAEMP Sampling Stations, 2012 to 2022

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

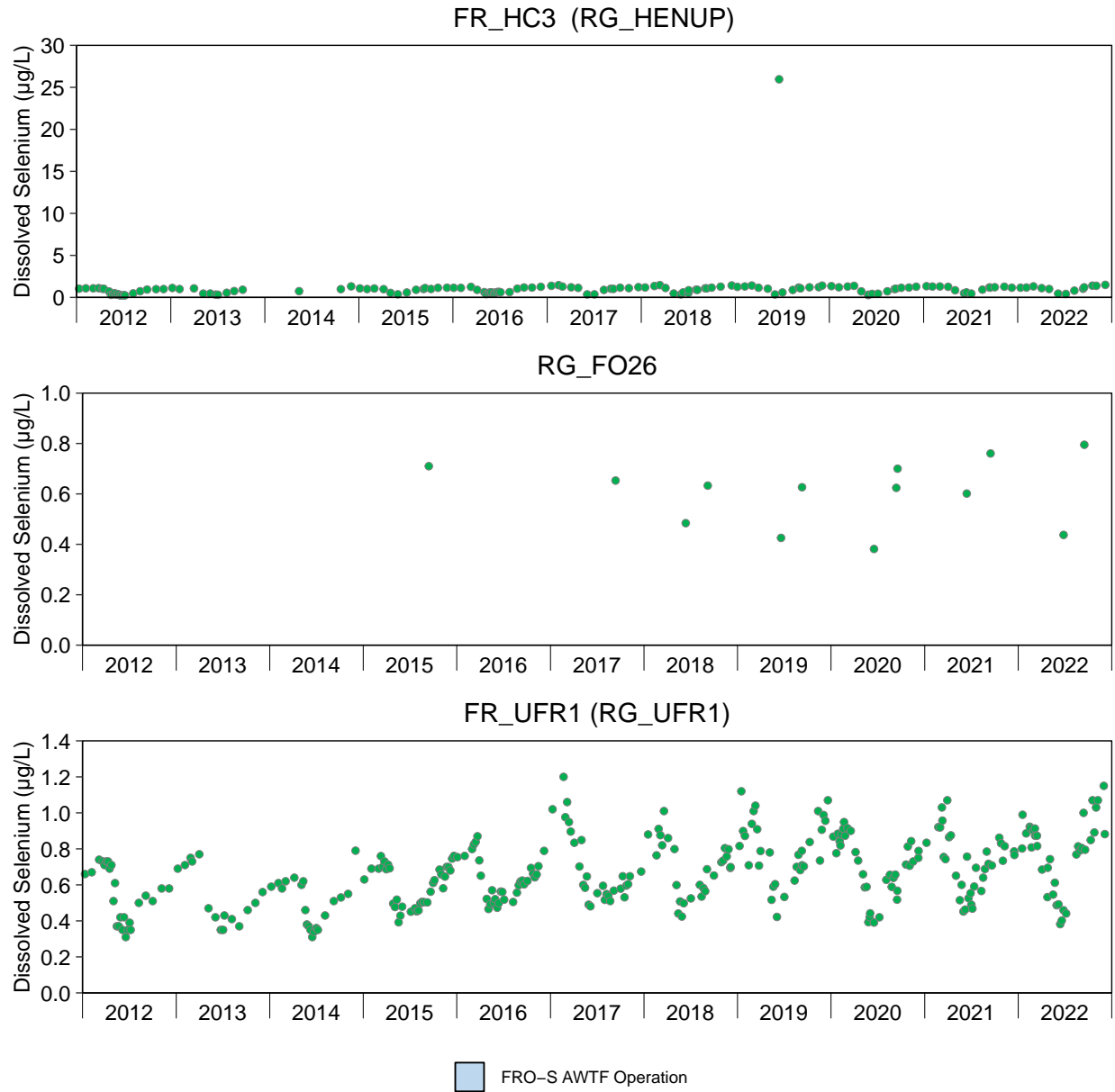


Figure D.19: Time Series Plots for Dissolved Selenium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

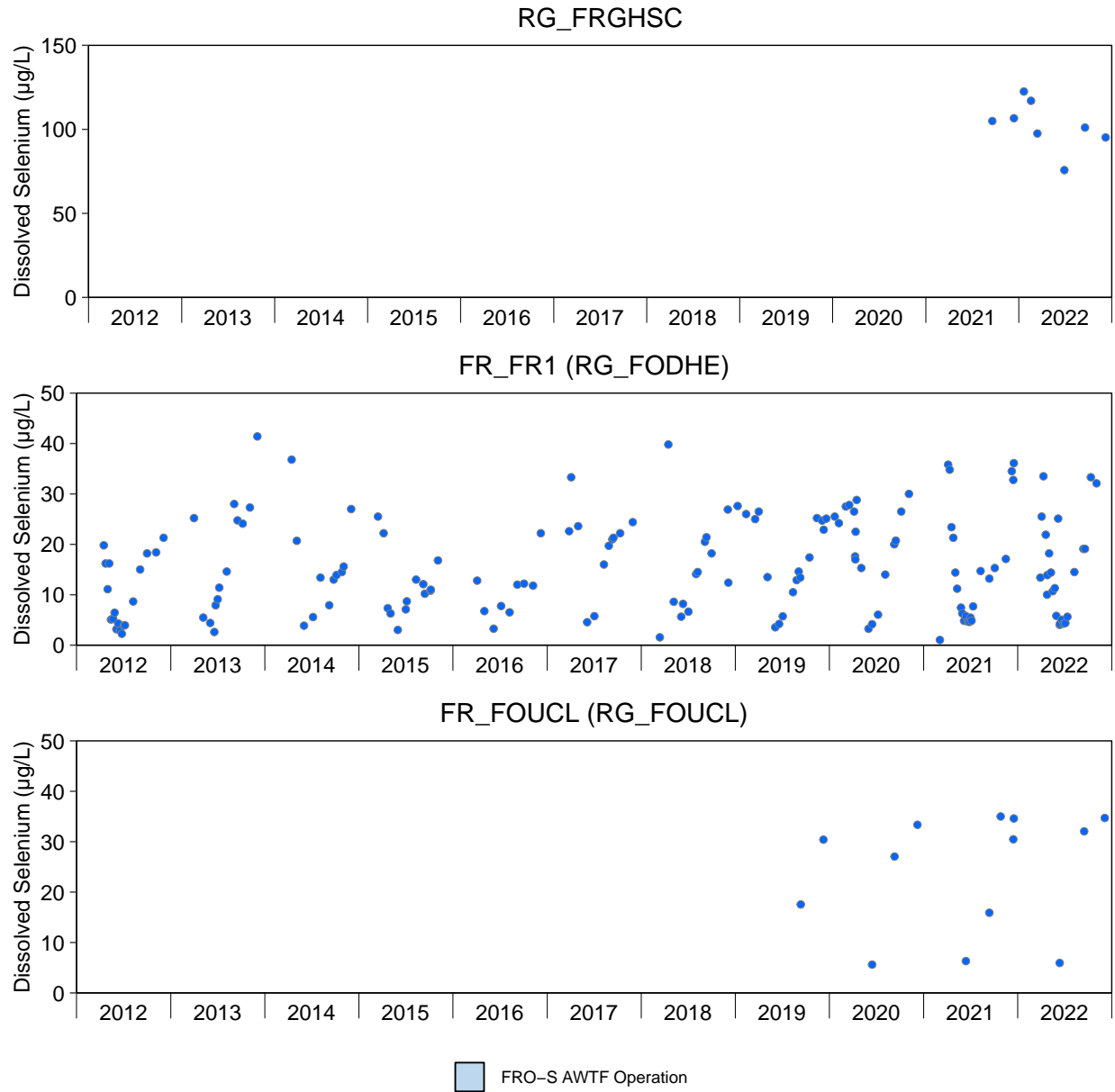


Figure D.19: Time Series Plots for Dissolved Selenium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

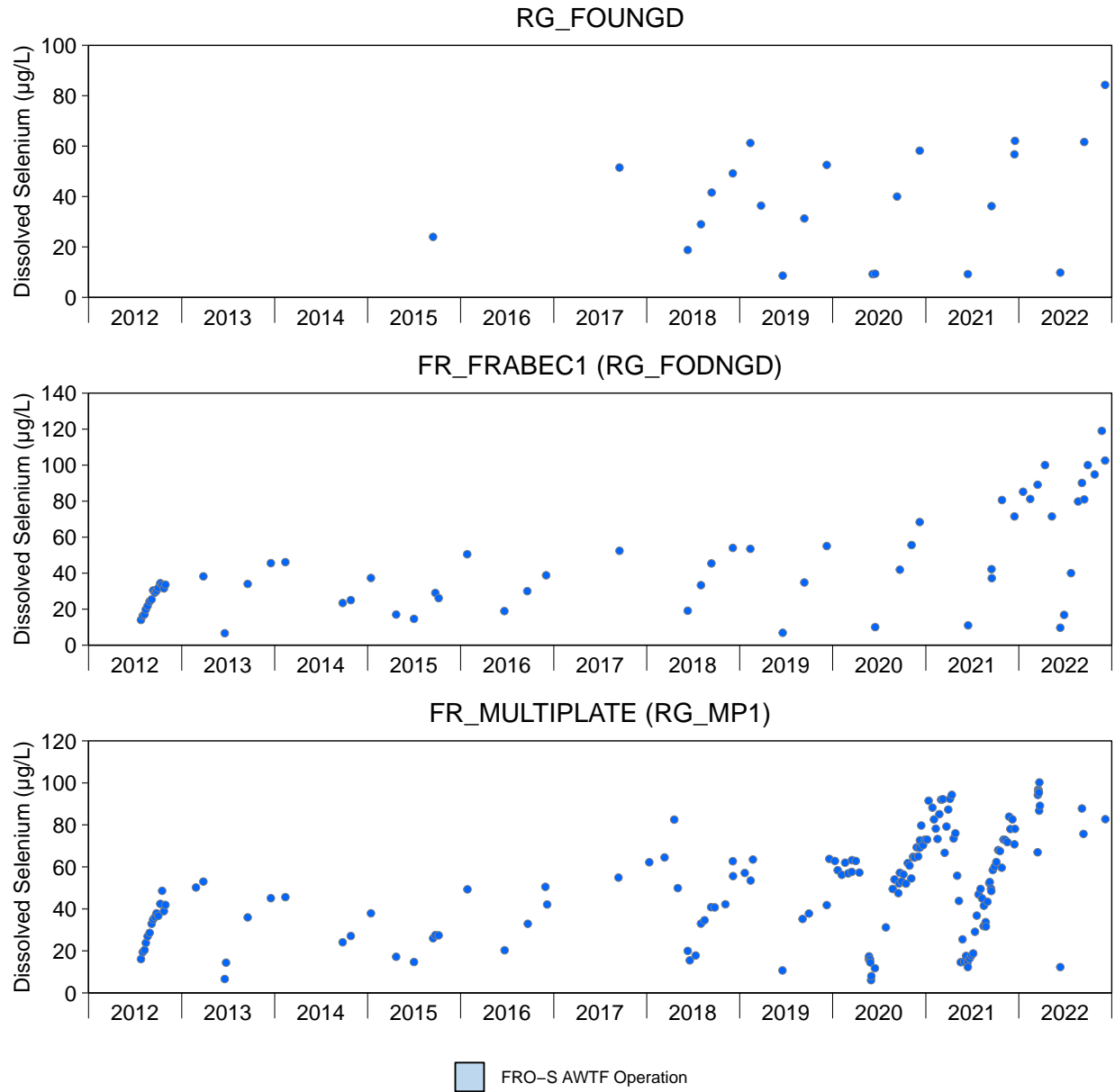


Figure D.19: Time Series Plots for Dissolved Selenium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

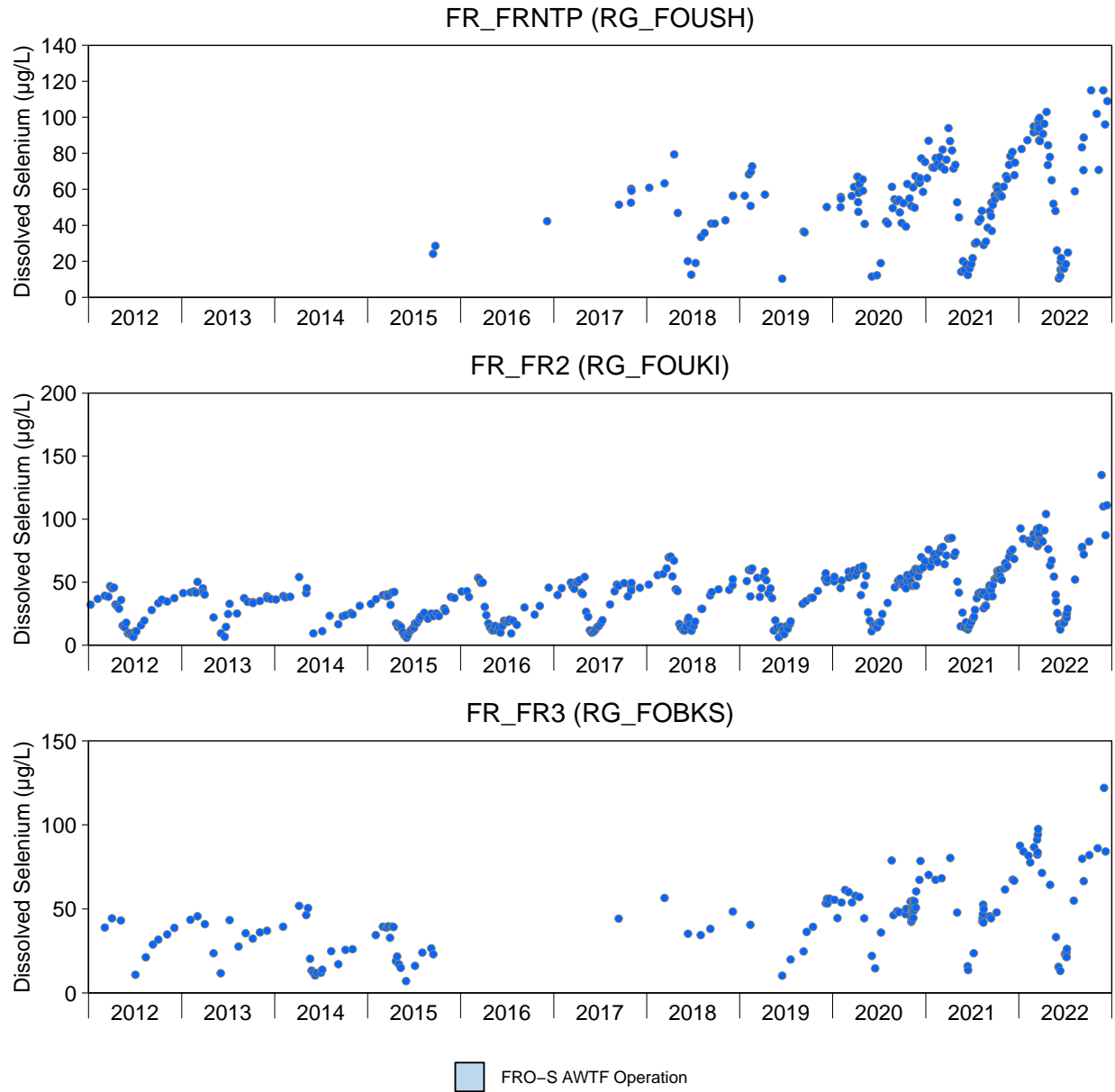


Figure D.19: Time Series Plots for Dissolved Selenium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

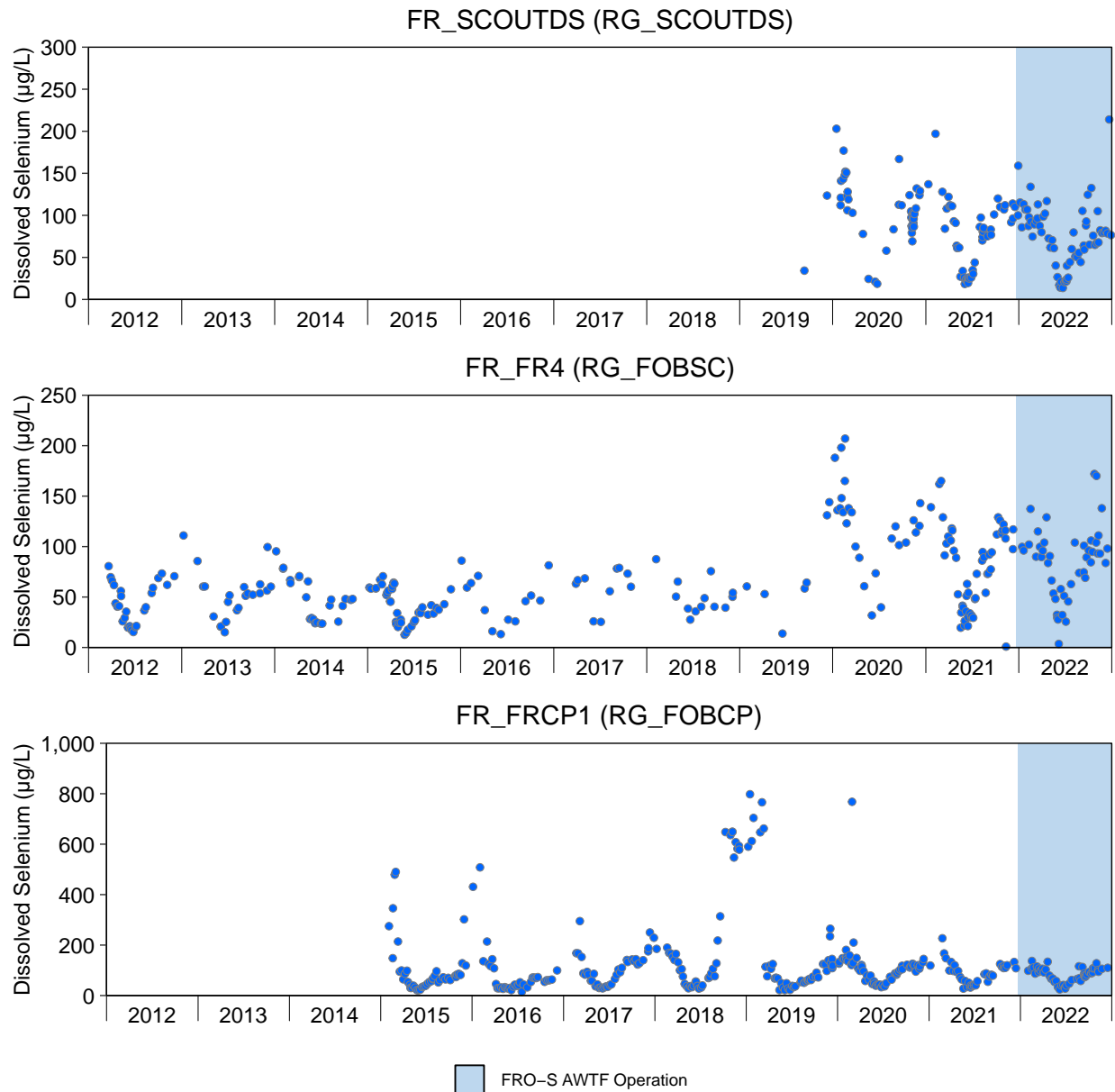


Figure D.19: Time Series Plots for Dissolved Selenium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

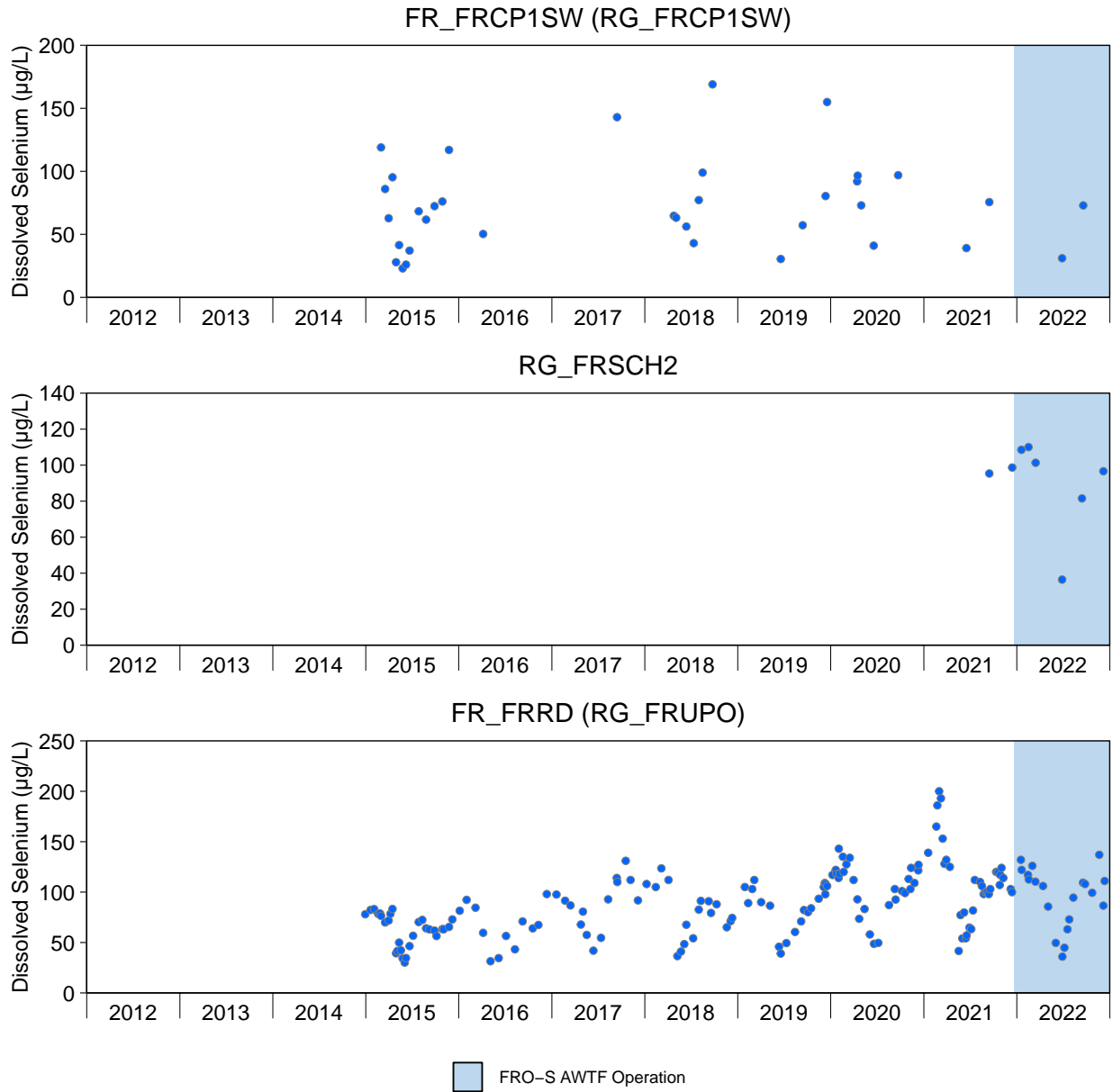


Figure D.19: Time Series Plots for Dissolved Selenium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

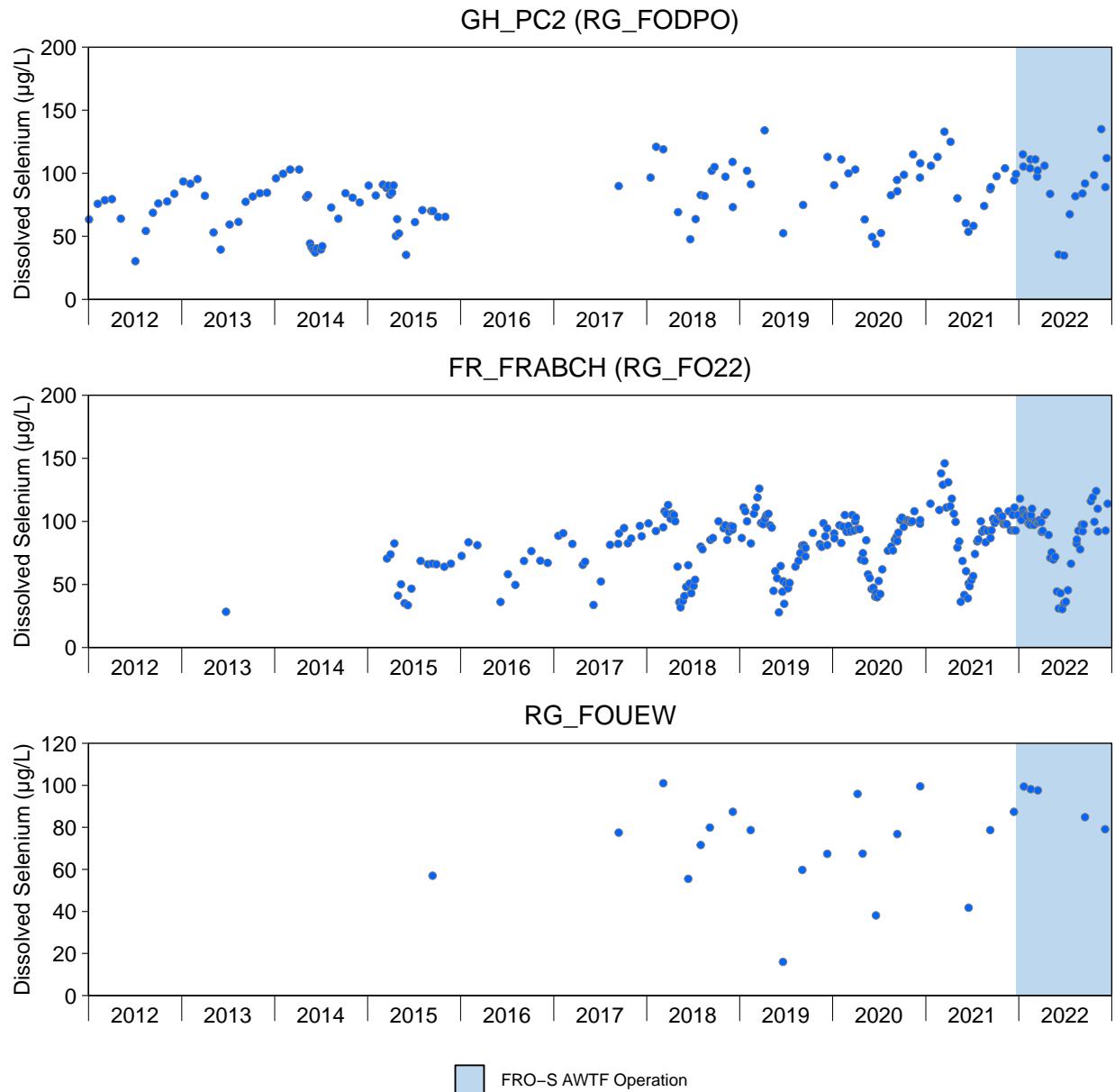


Figure D.19: Time Series Plots for Dissolved Selenium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

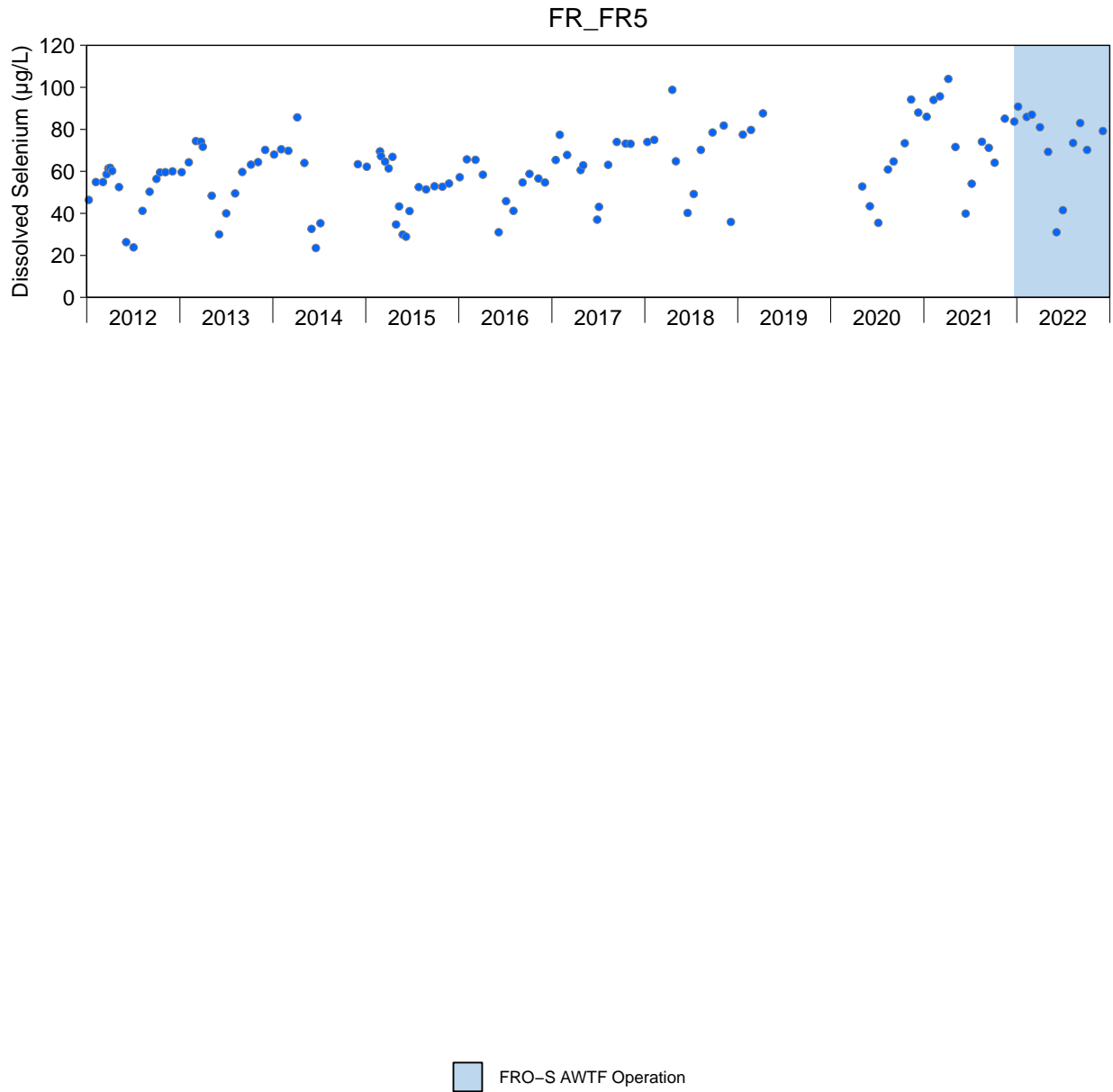


Figure D.19: Time Series Plots for Dissolved Selenium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

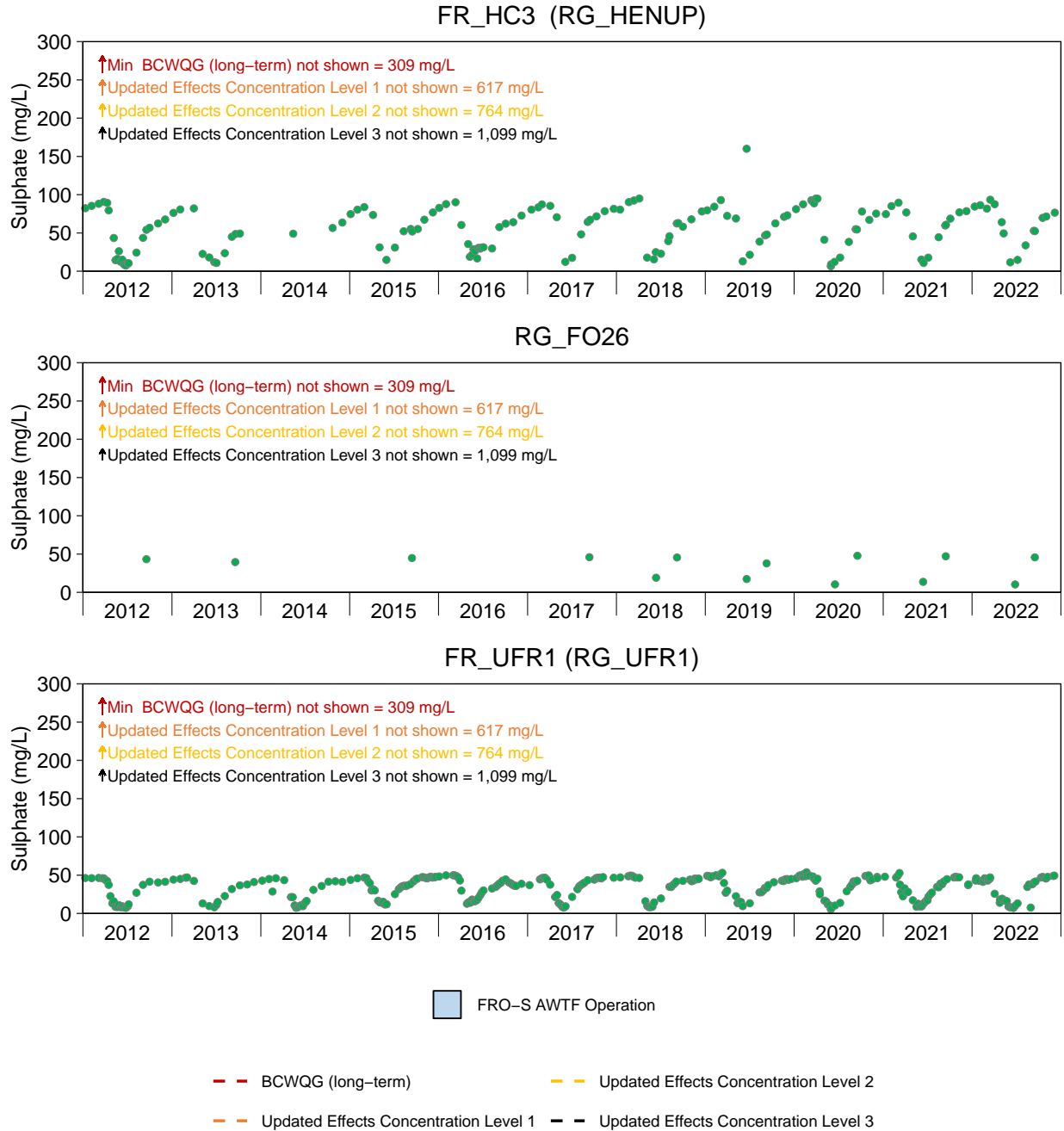


Figure D.20: Time Series Plots for Sulphate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness concentrations. EVWQP Level 1 Benchmark is shown in plots where the EVWQP Level 1 Benchmark and the BCWQG are equal. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

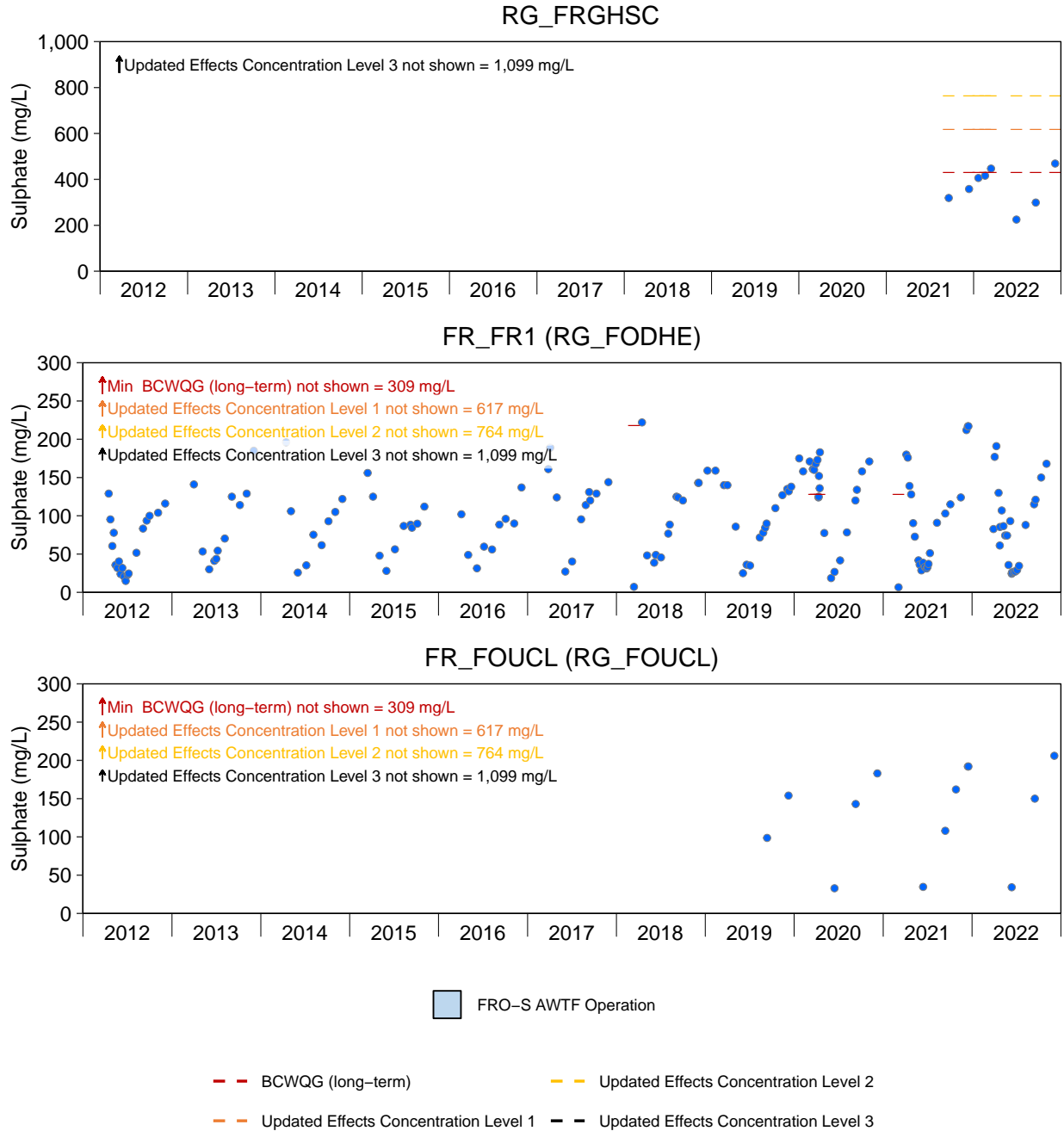


Figure D.20: Time Series Plots for Sulphate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness concentrations. EVWQP Level 1 Benchmark is shown in plots where the EVWQP Level 1 Benchmark and the BCWQG are equal. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

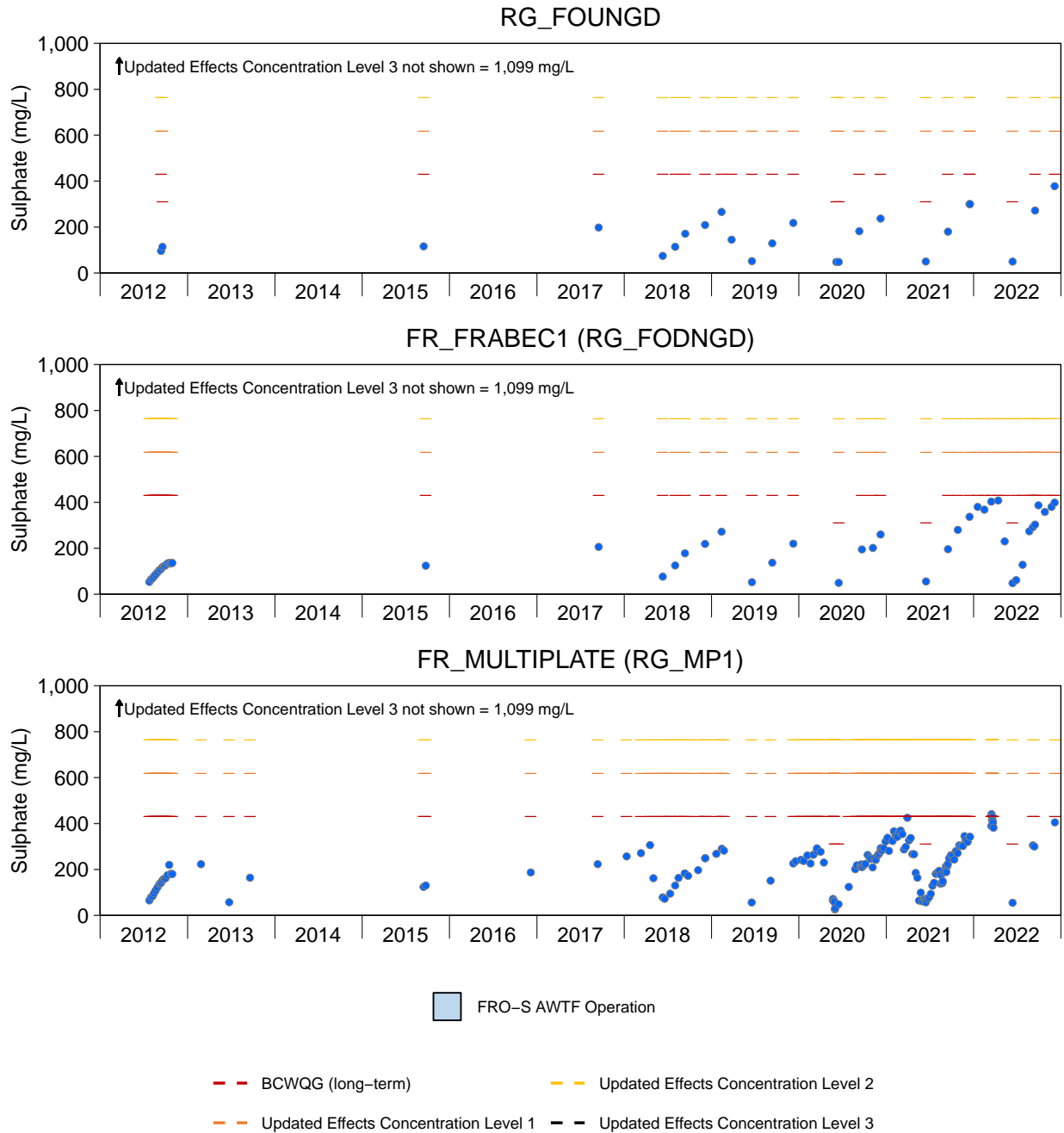


Figure D.20: Time Series Plots for Sulphate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness concentrations. EVWQP Level 1 Benchmark is shown in plots where the EVWQP Level 1 Benchmark and the BCWQG are equal. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

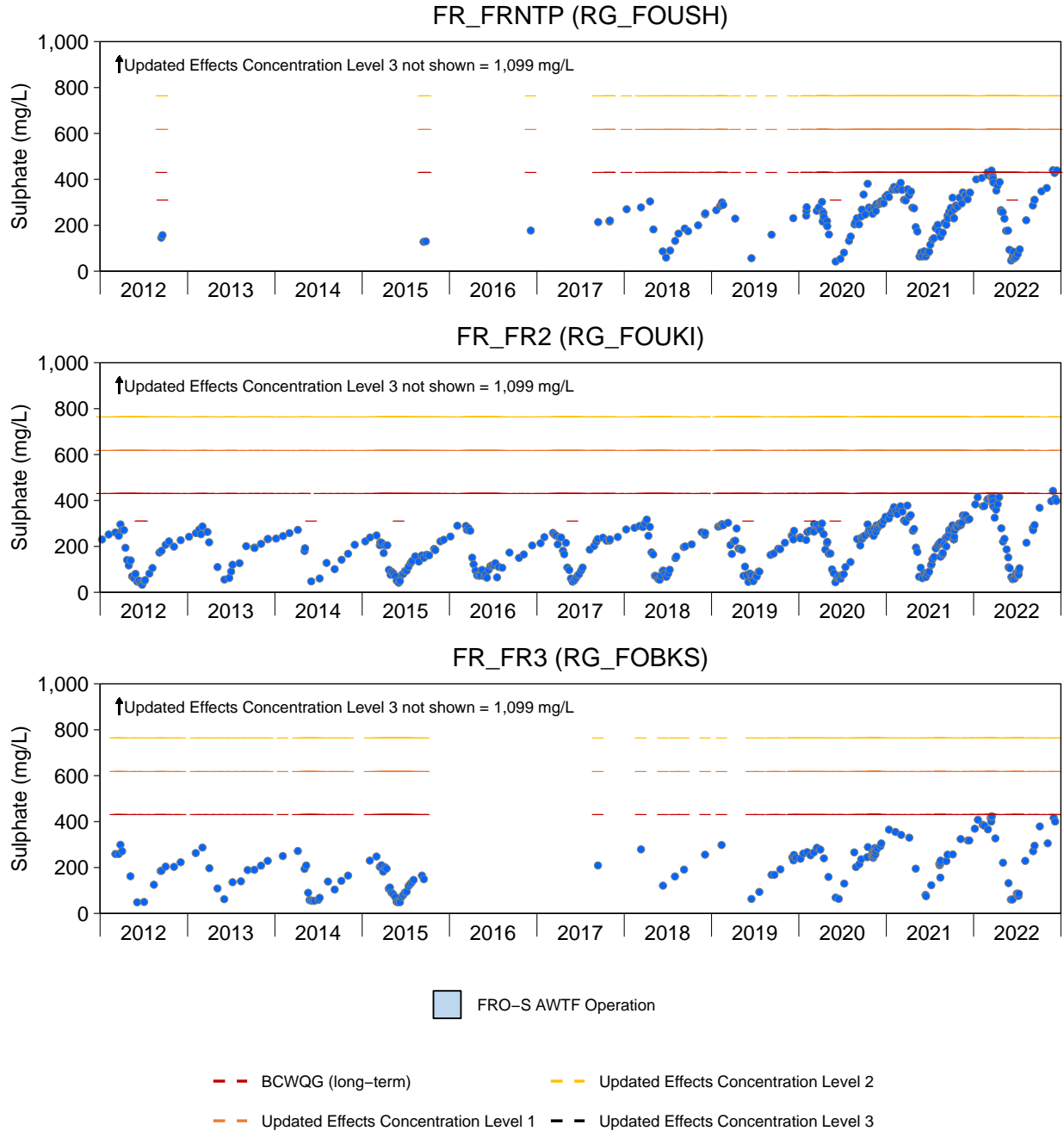


Figure D.20: Time Series Plots for Sulphate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness concentrations. EVWQP Level 1 Benchmark is shown in plots where the EVWQP Level 1 Benchmark and the BCWQG are equal. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

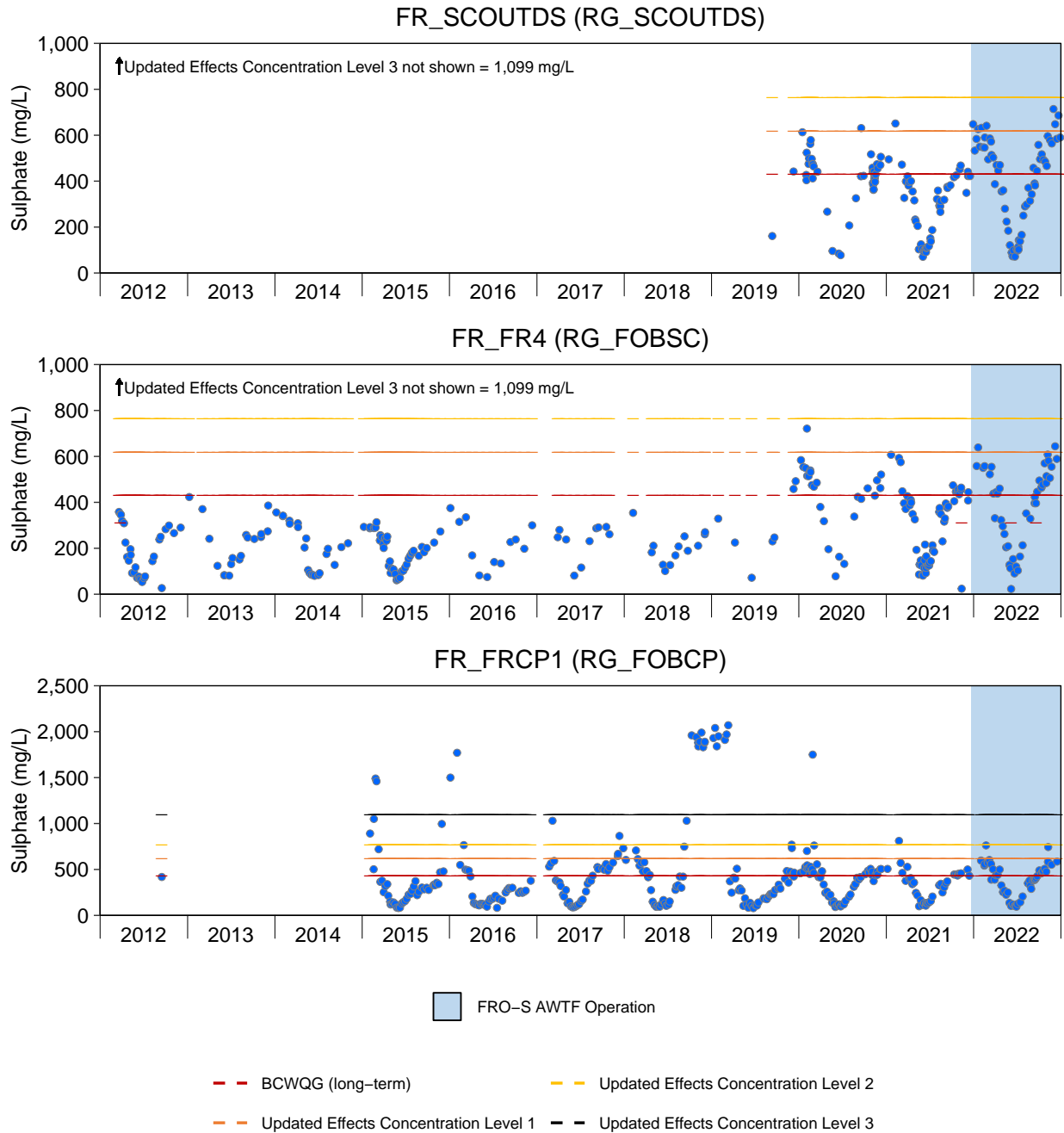


Figure D.20: Time Series Plots for Sulphate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness concentrations. EVWQP Level 1 Benchmark is shown in plots where the EVWQP Level 1 Benchmark and the BCWQG are equal. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

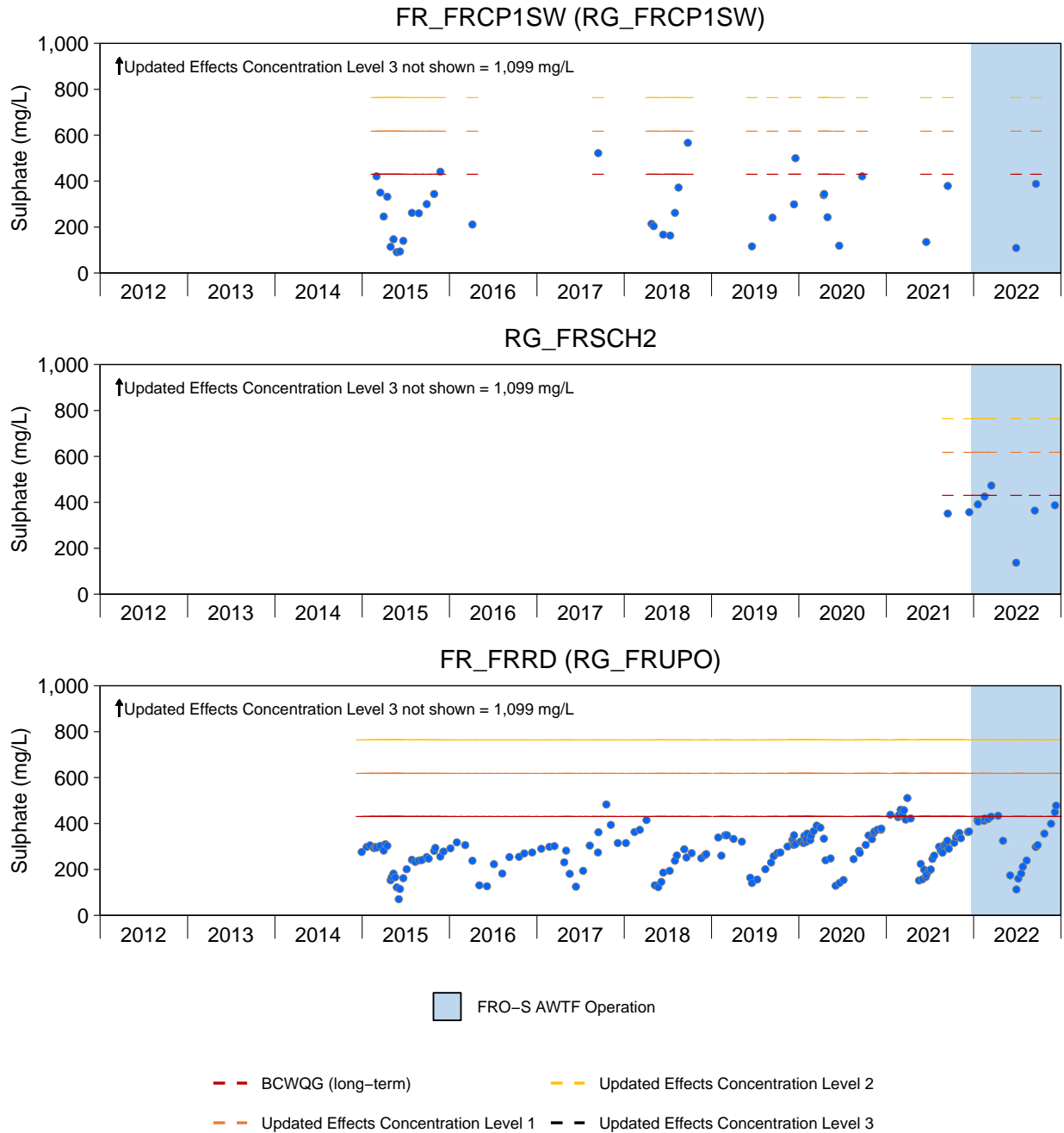


Figure D.20: Time Series Plots for Sulphate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness concentrations. EVWQP Level 1 Benchmark is shown in plots where the EVWQP Level 1 Benchmark and the BCWQG are equal. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

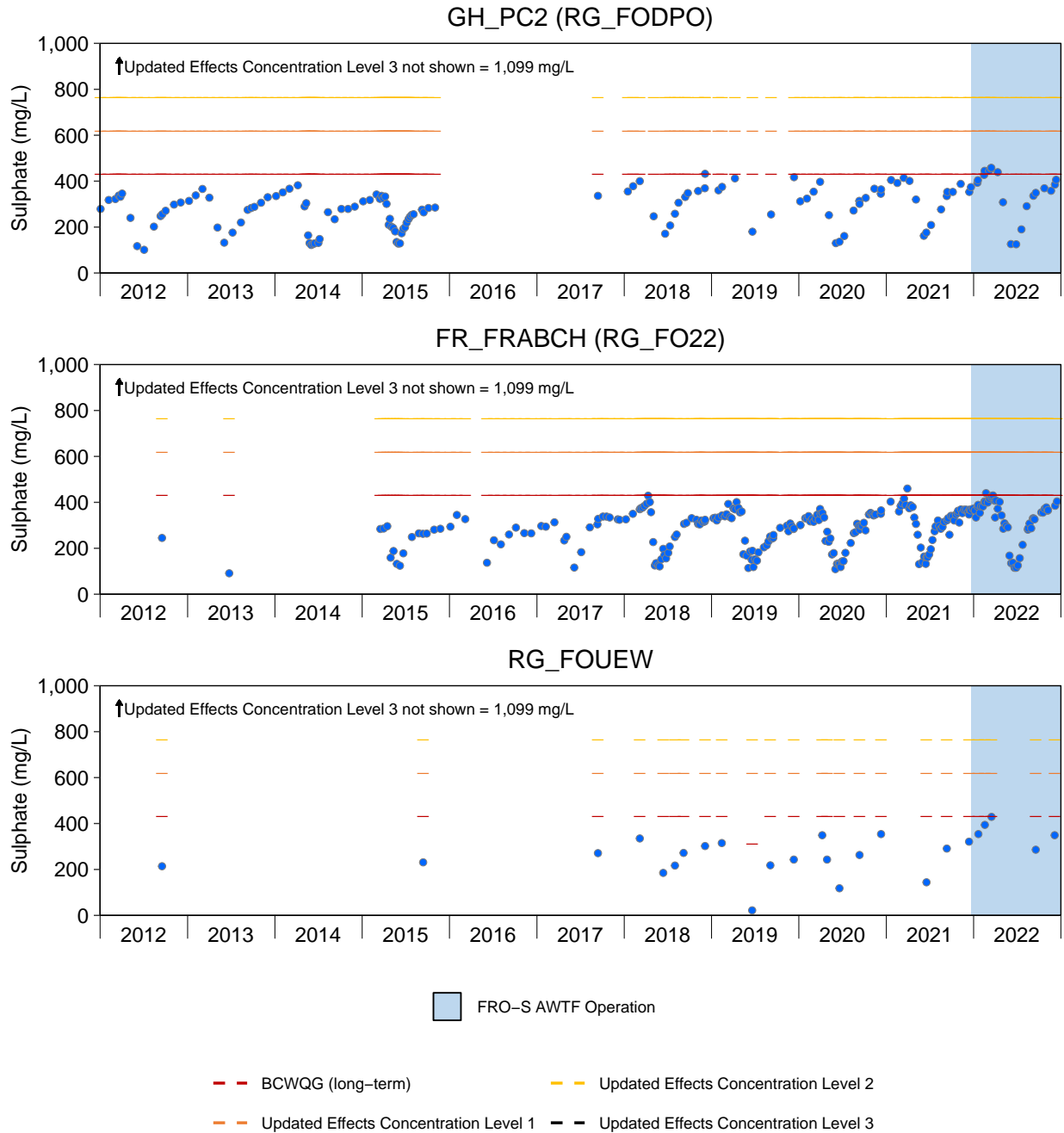


Figure D.20: Time Series Plots for Sulphate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness concentrations. EVWQP Level 1 Benchmark is shown in plots where the EVWQP Level 1 Benchmark and the BCWQG are equal. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

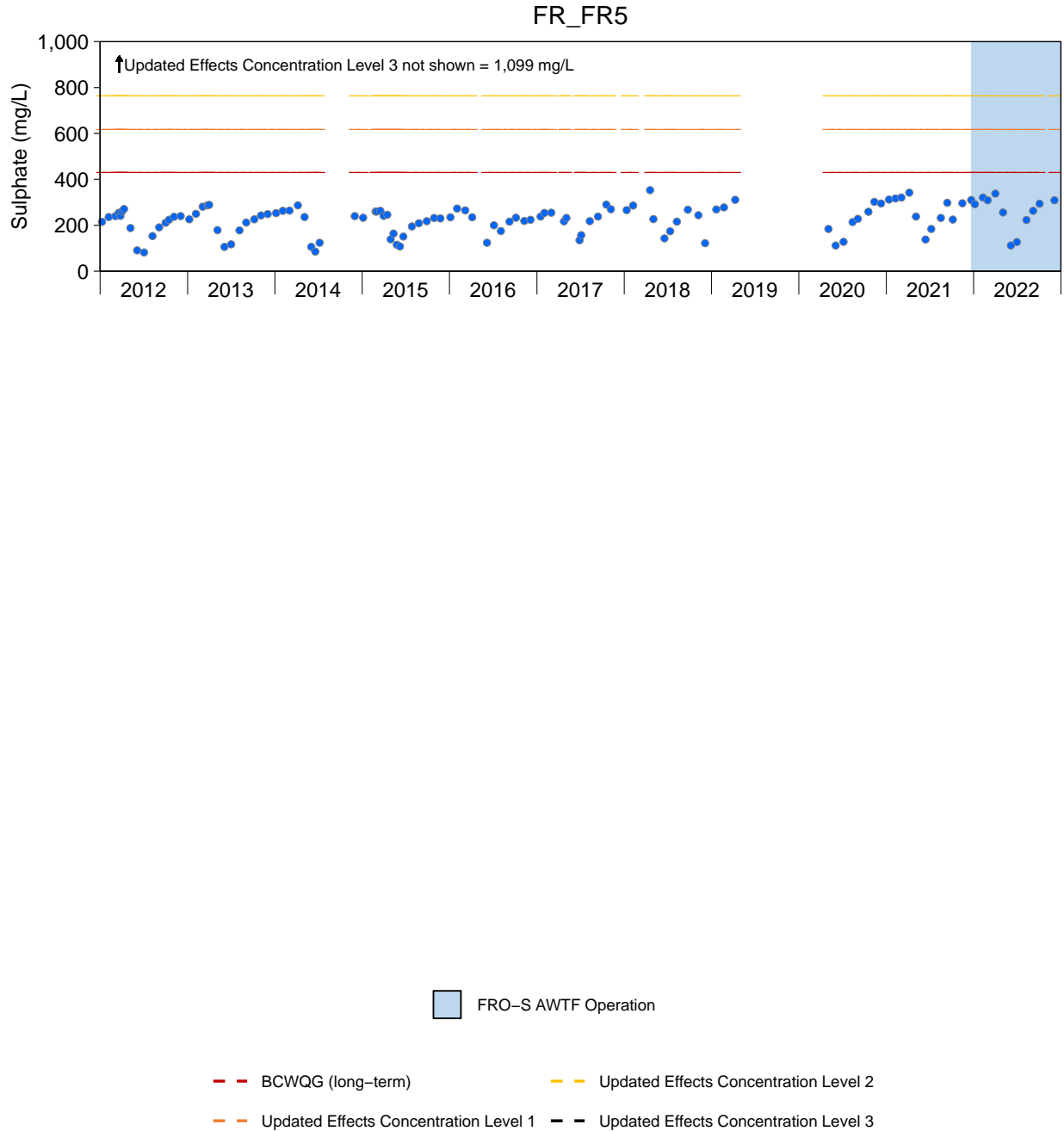


Figure D.20: Time Series Plots for Sulphate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Concentrations reported below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. Guidelines are dependent on water hardness concentrations. EVWQP Level 1 Benchmark is shown in plots where the EVWQP Level 1 Benchmark and the BCWQG are equal. Constituent was plotted because it was identified as a mine-related constituent in the Adaptive Management Plan and an early warning trigger was defined (Azimuth 2018). When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

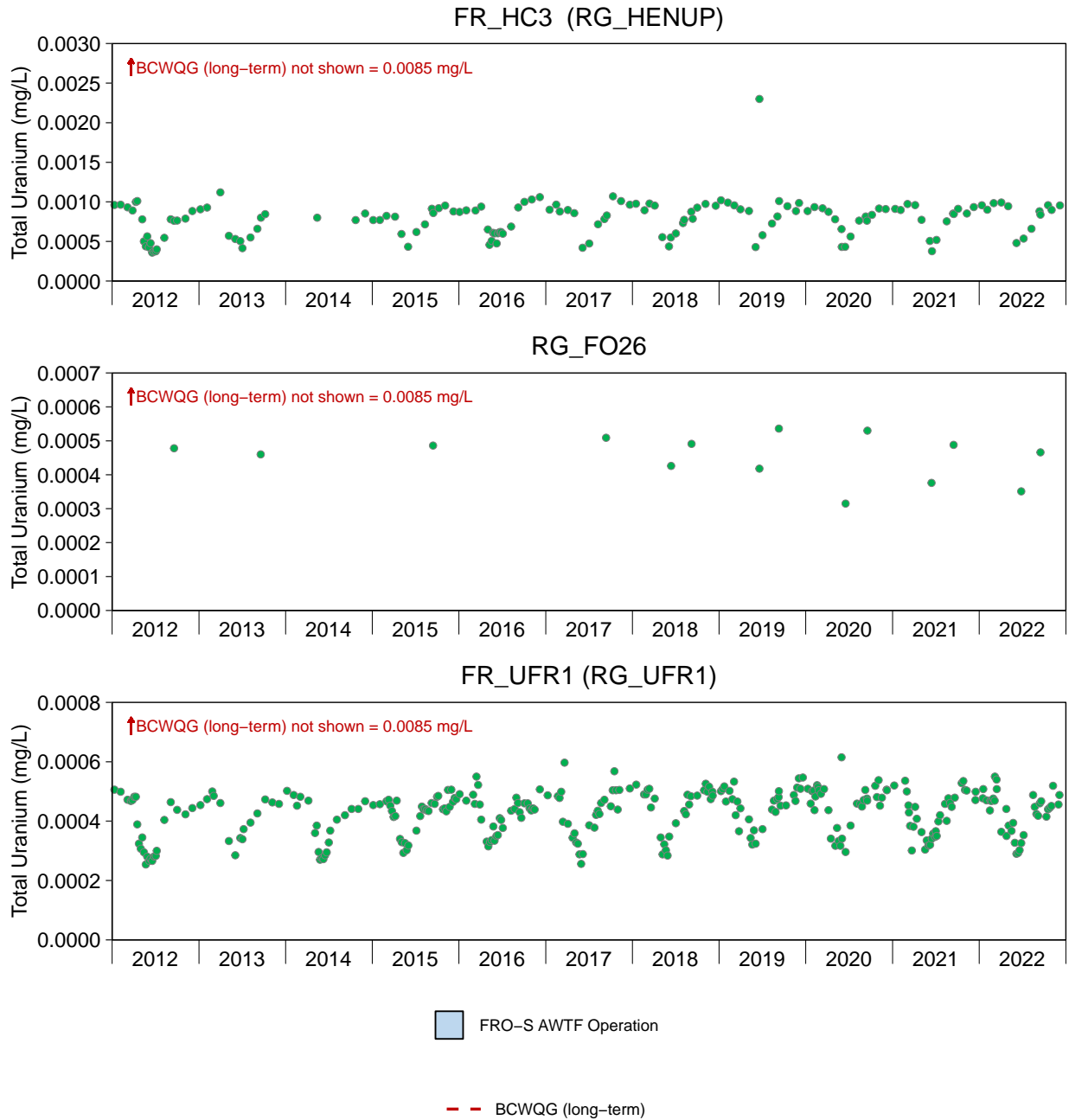


Figure D.21: Time Series Plots for Total Uranium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

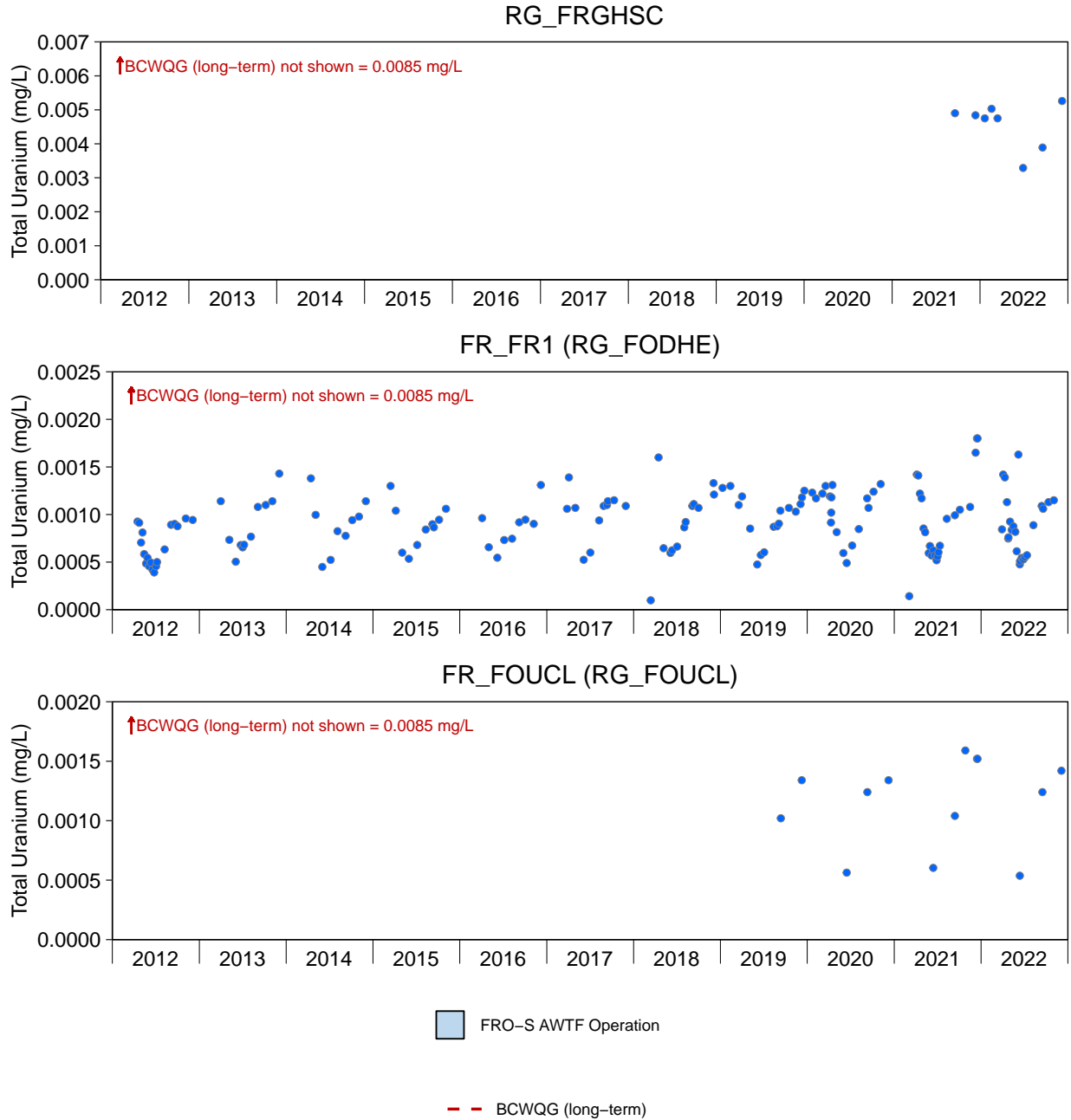


Figure D.21: Time Series Plots for Total Uranium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

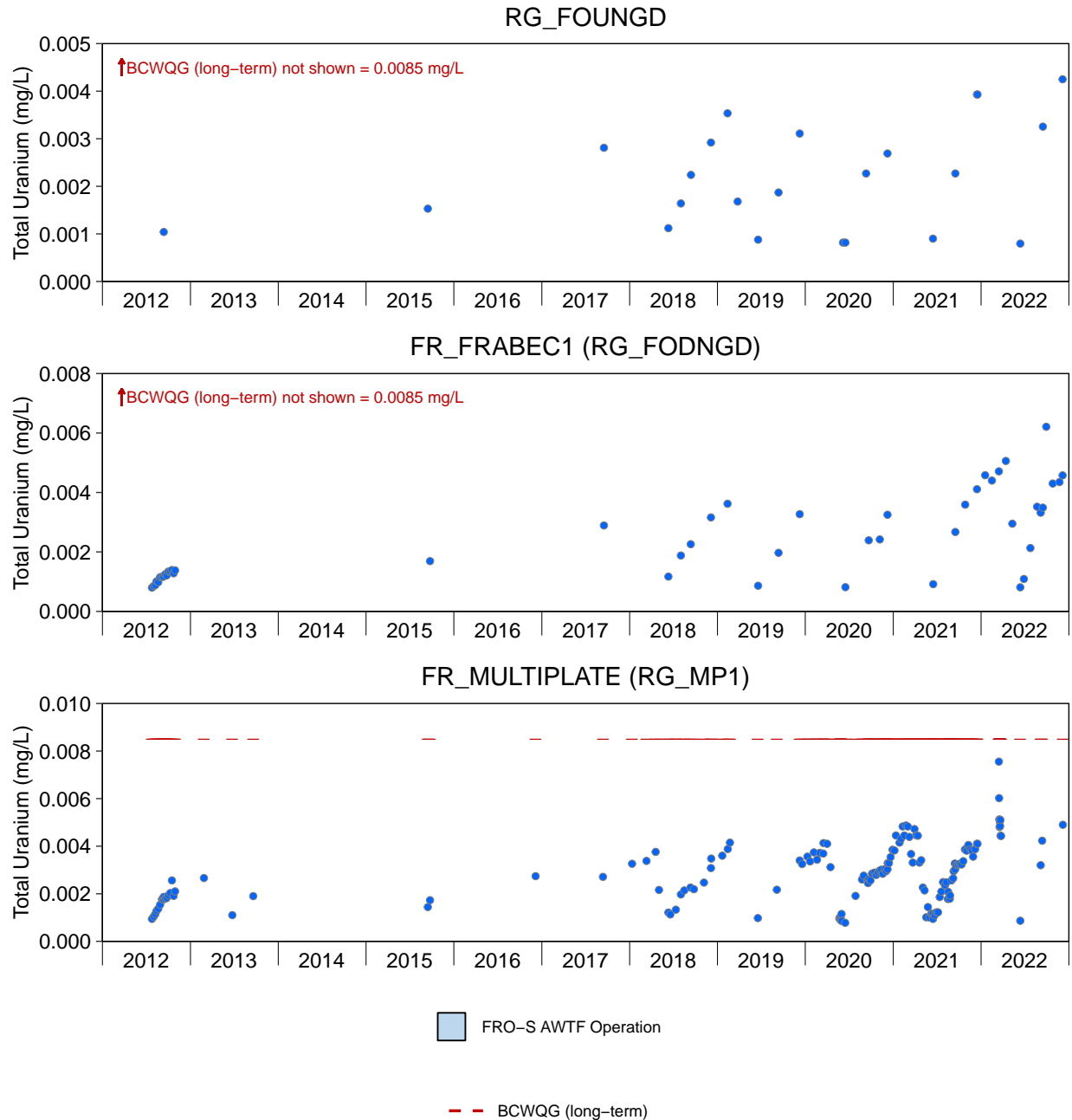


Figure D.21: Time Series Plots for Total Uranium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

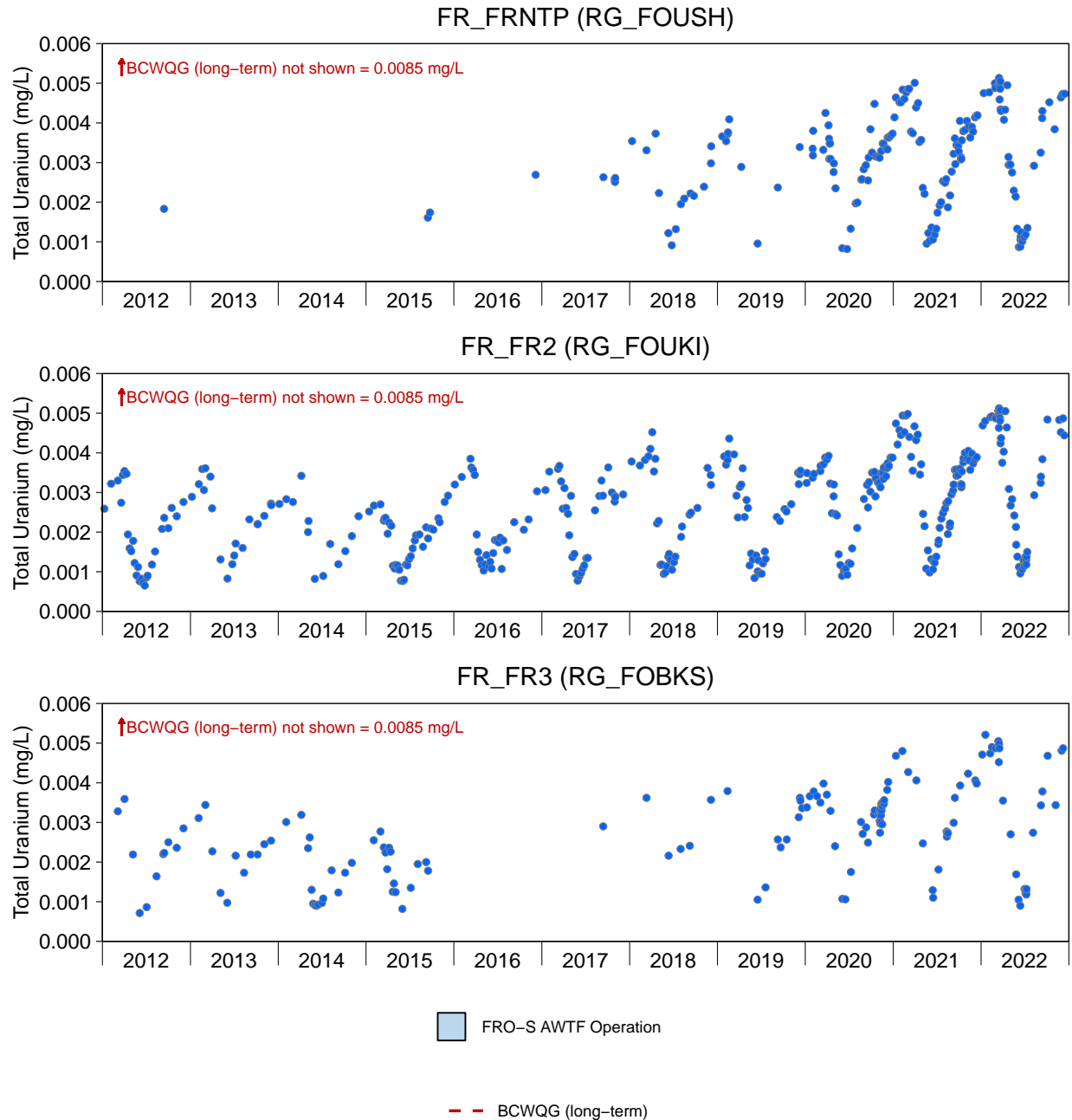


Figure D.21: Time Series Plots for Total Uranium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

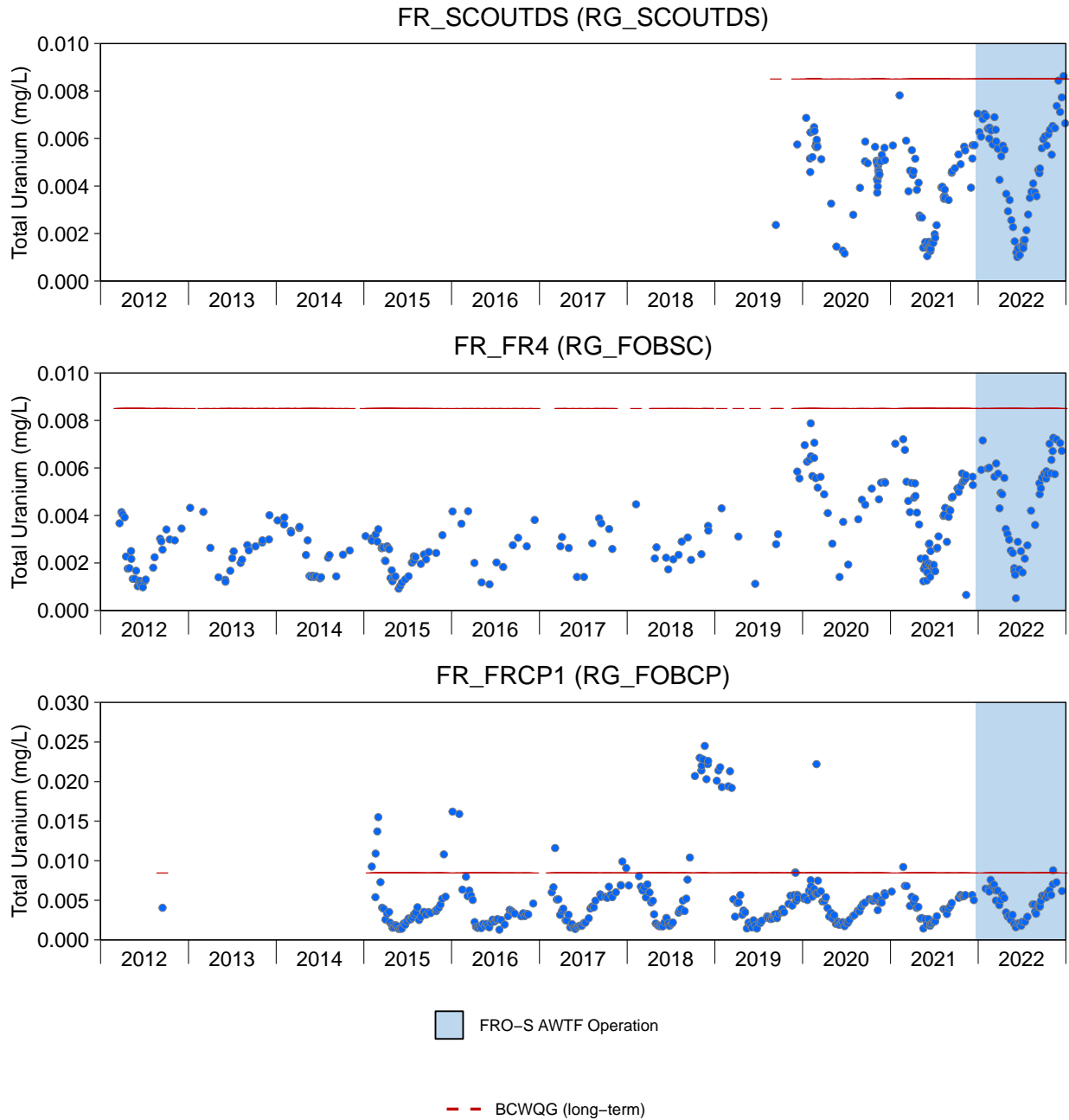


Figure D.21: Time Series Plots for Total Uranium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

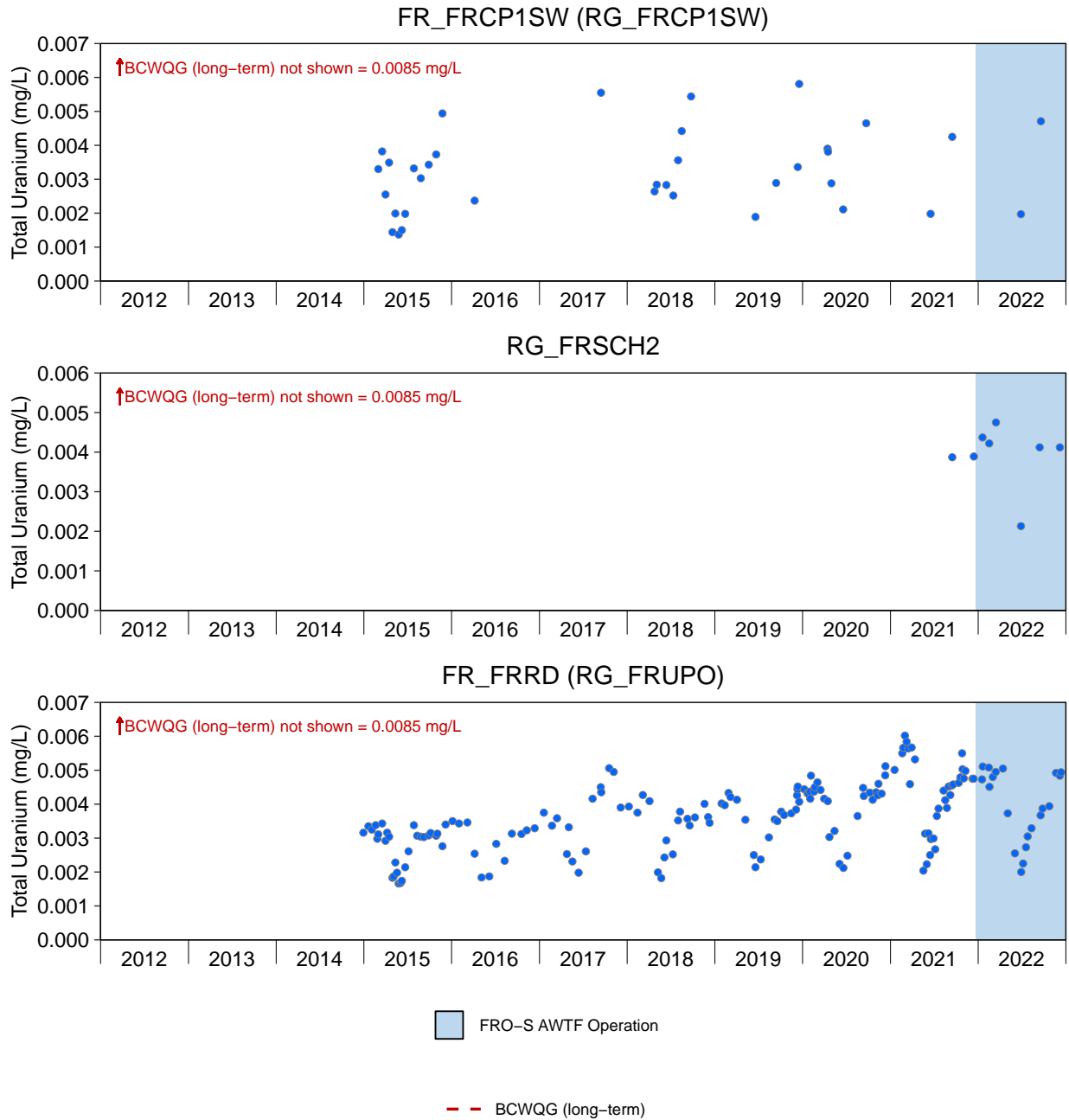


Figure D.21: Time Series Plots for Total Uranium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

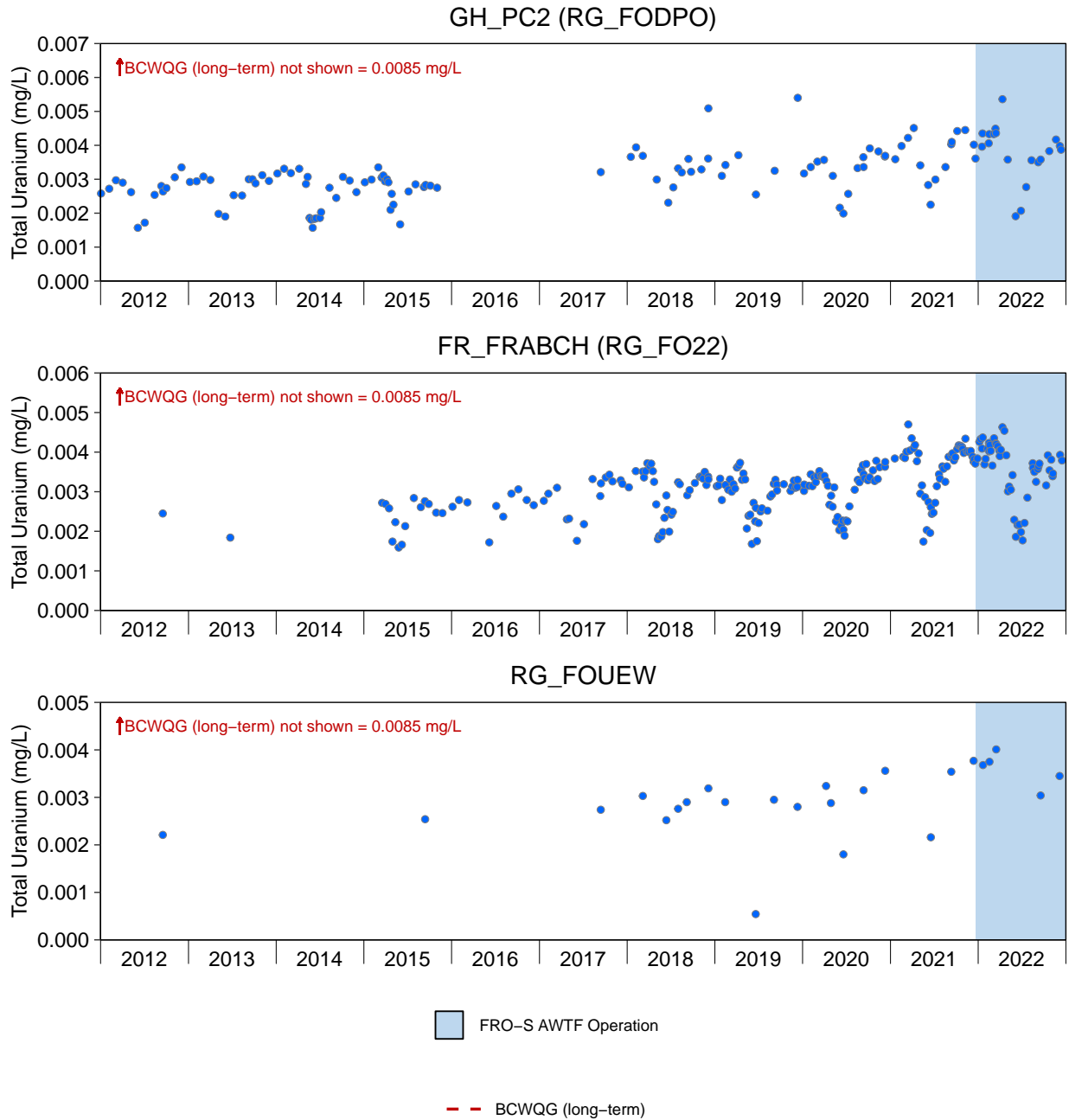
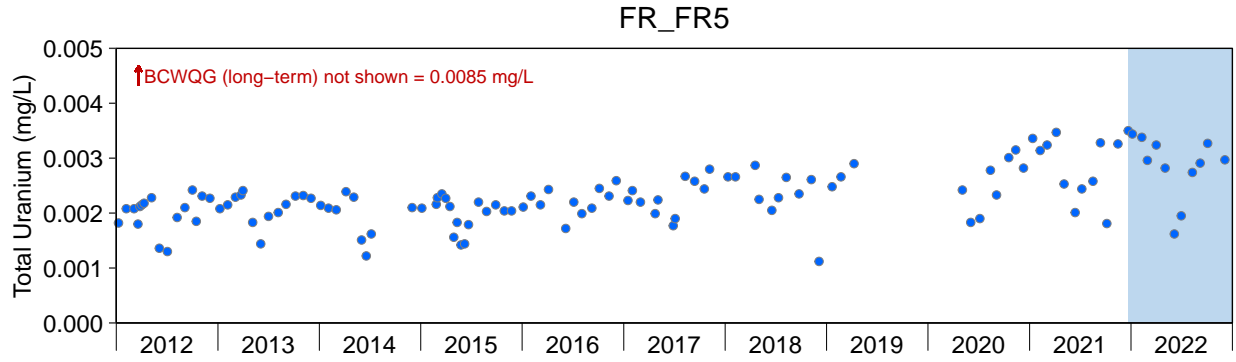


Figure D.21: Time Series Plots for Total Uranium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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



□ FRO-S AWTF Operation

- - BCWQG (long-term)

Figure D.21: Time Series Plots for Total Uranium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

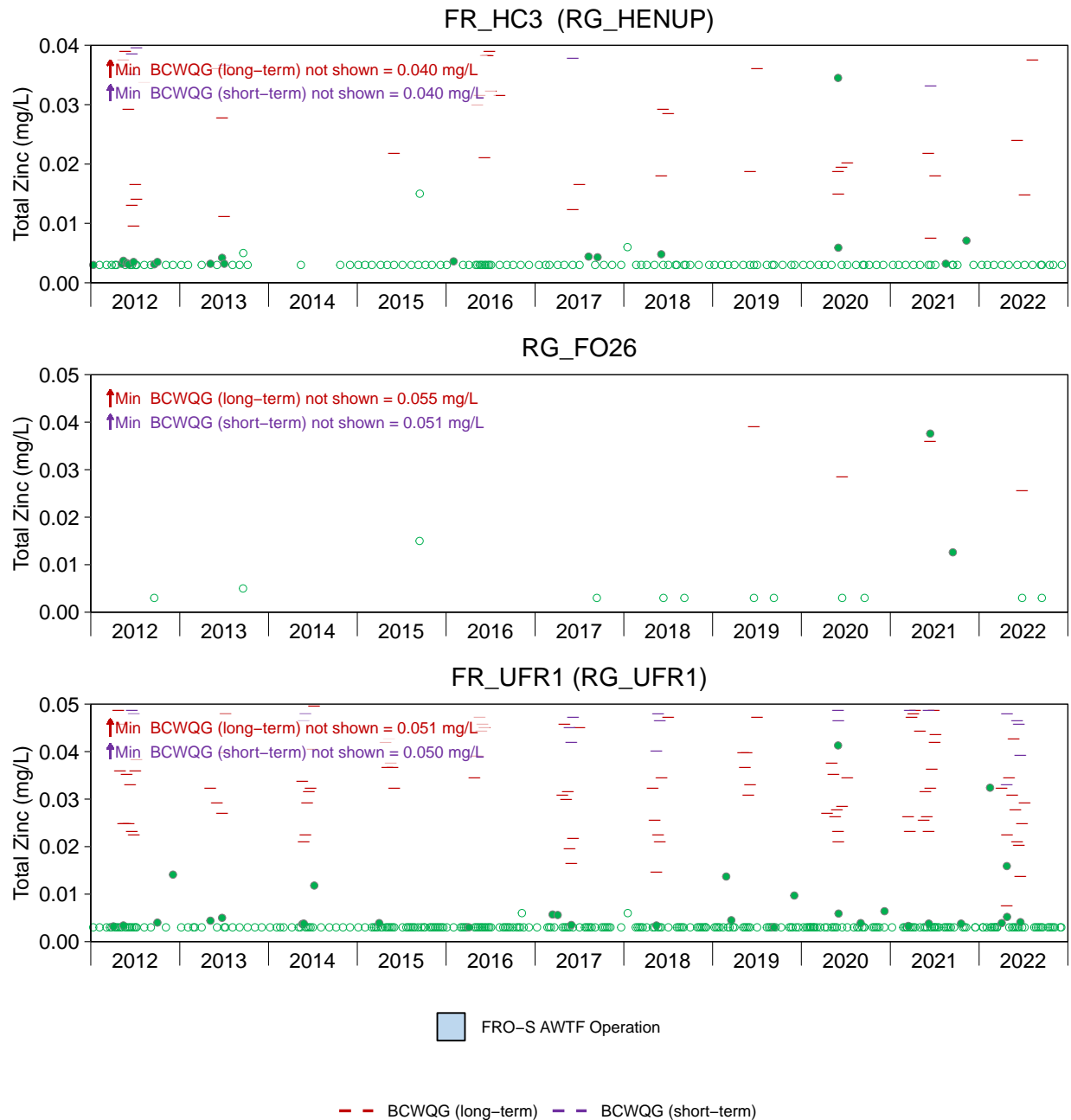


Figure D.22: Time Series Plots for Total Zinc Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

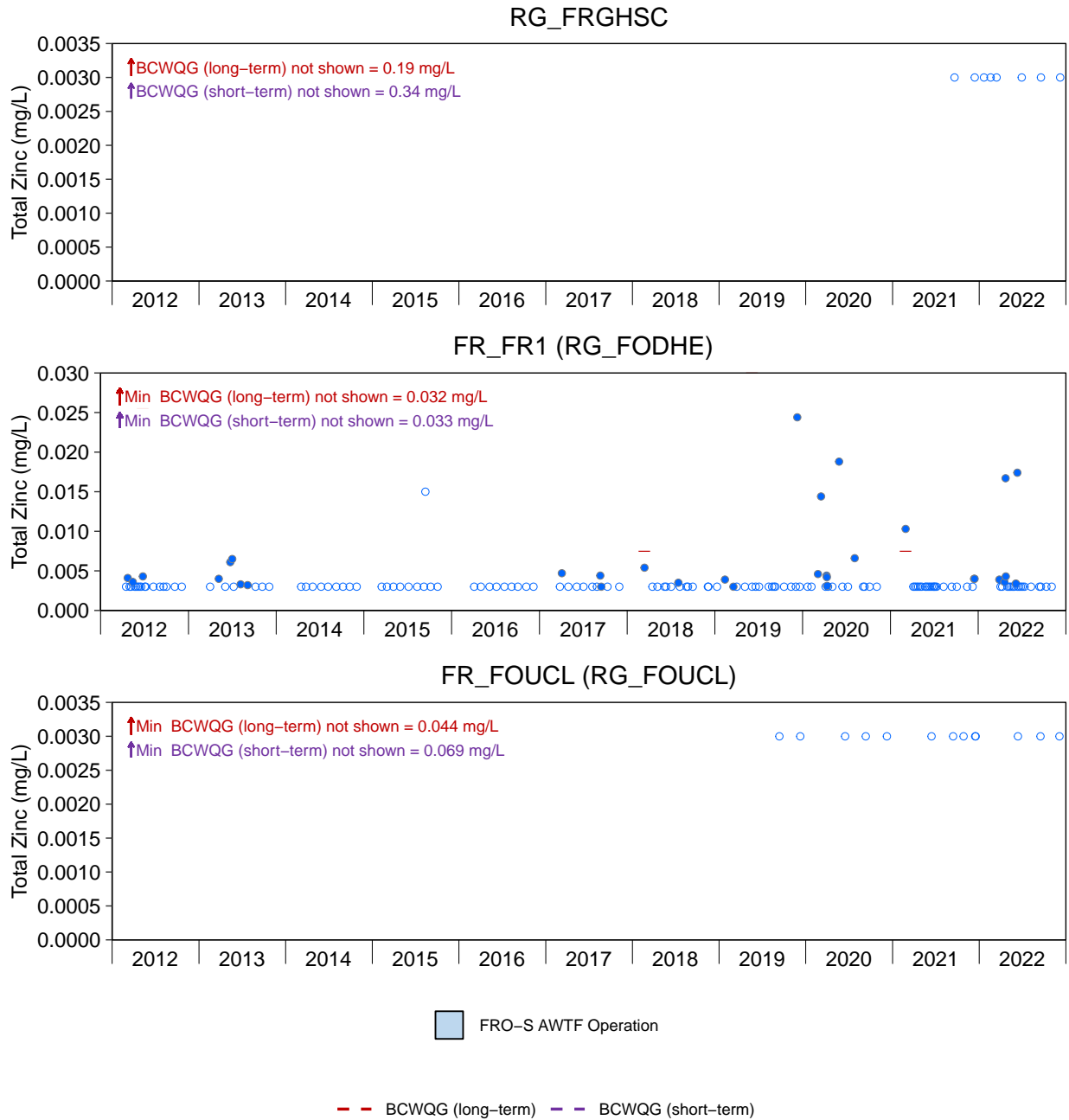


Figure D.22: Time Series Plots for Total Zinc Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

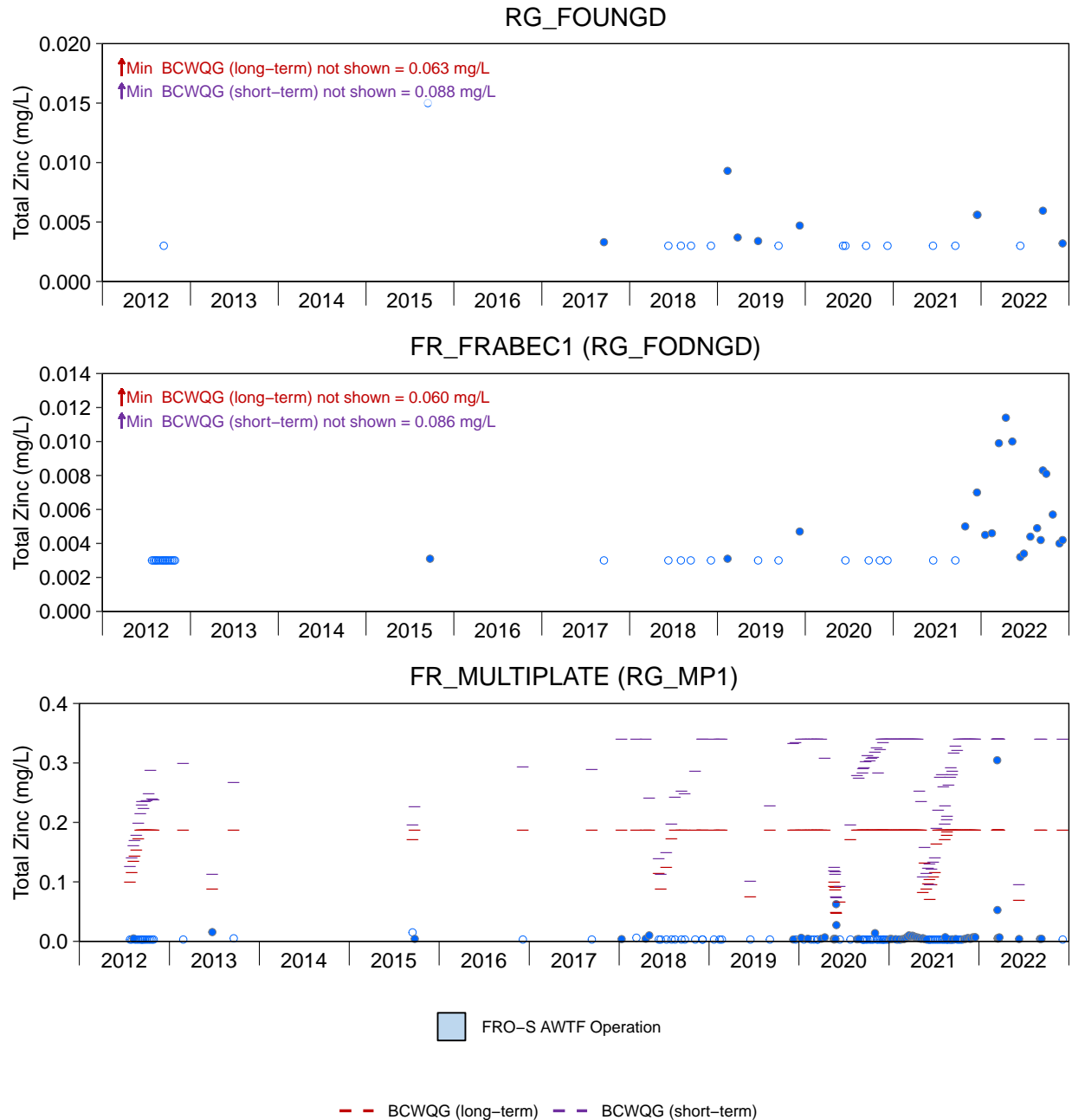


Figure D.22: Time Series Plots for Total Zinc Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

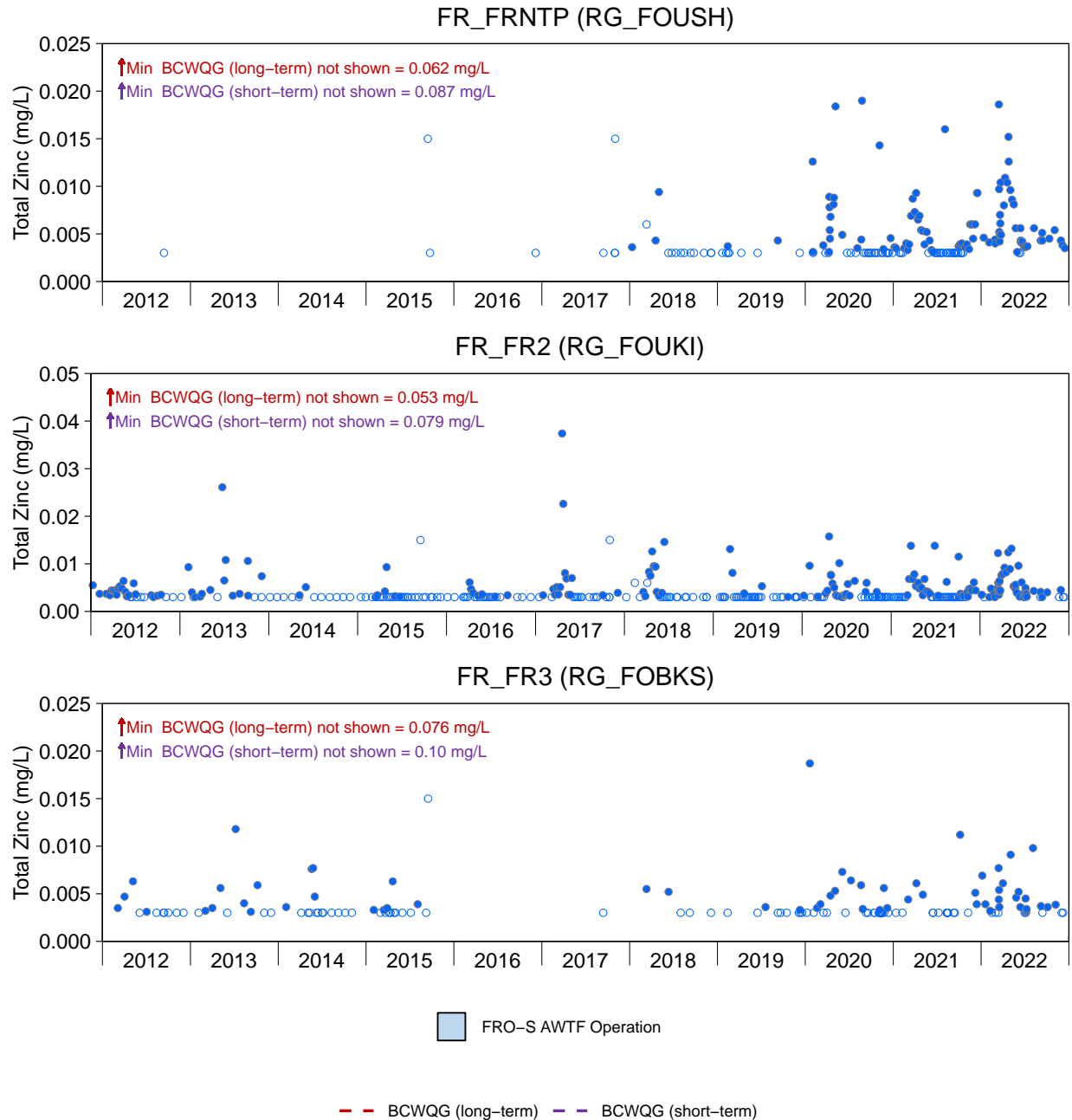


Figure D.22: Time Series Plots for Total Zinc Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

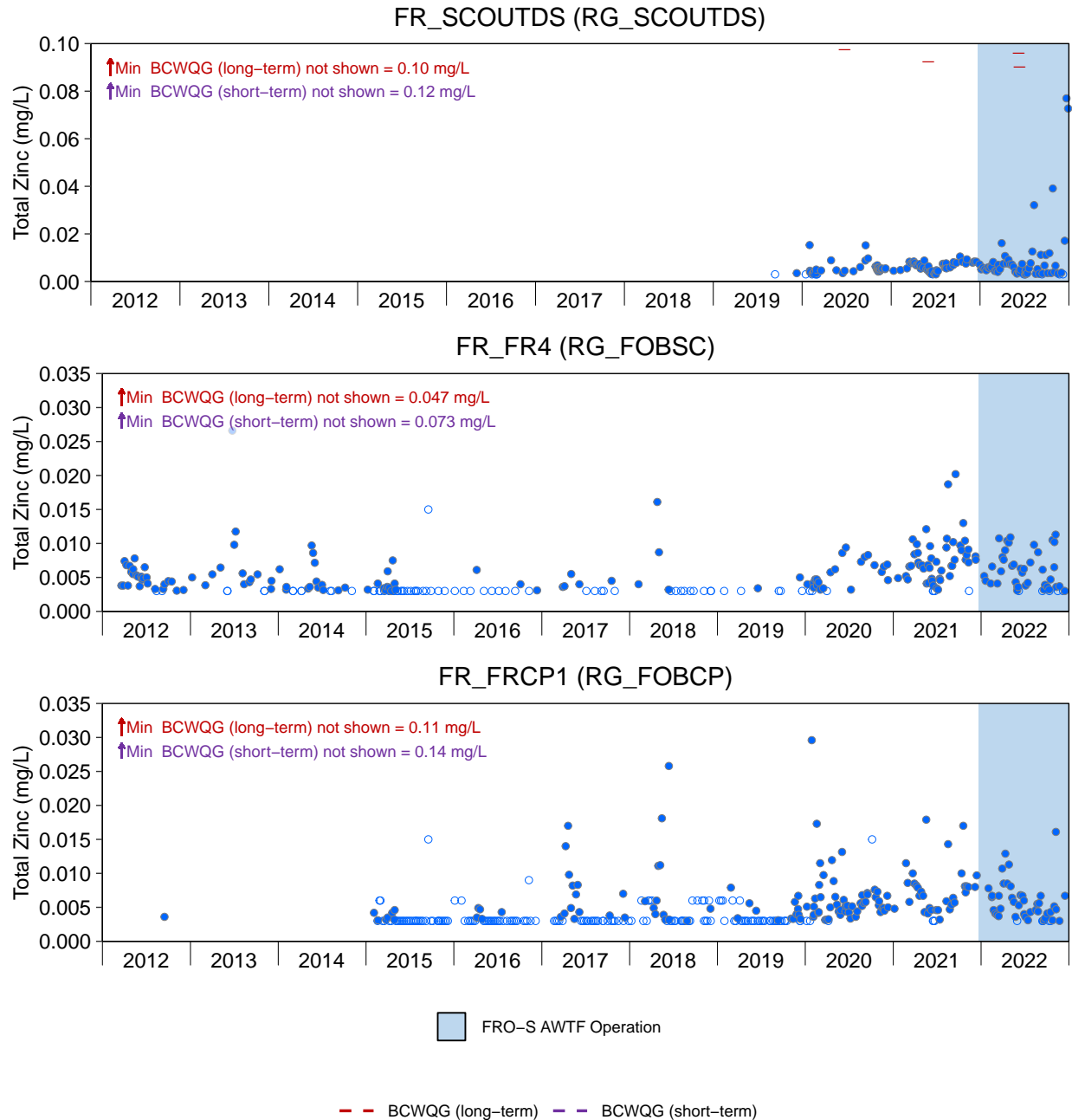


Figure D.22: Time Series Plots for Total Zinc Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

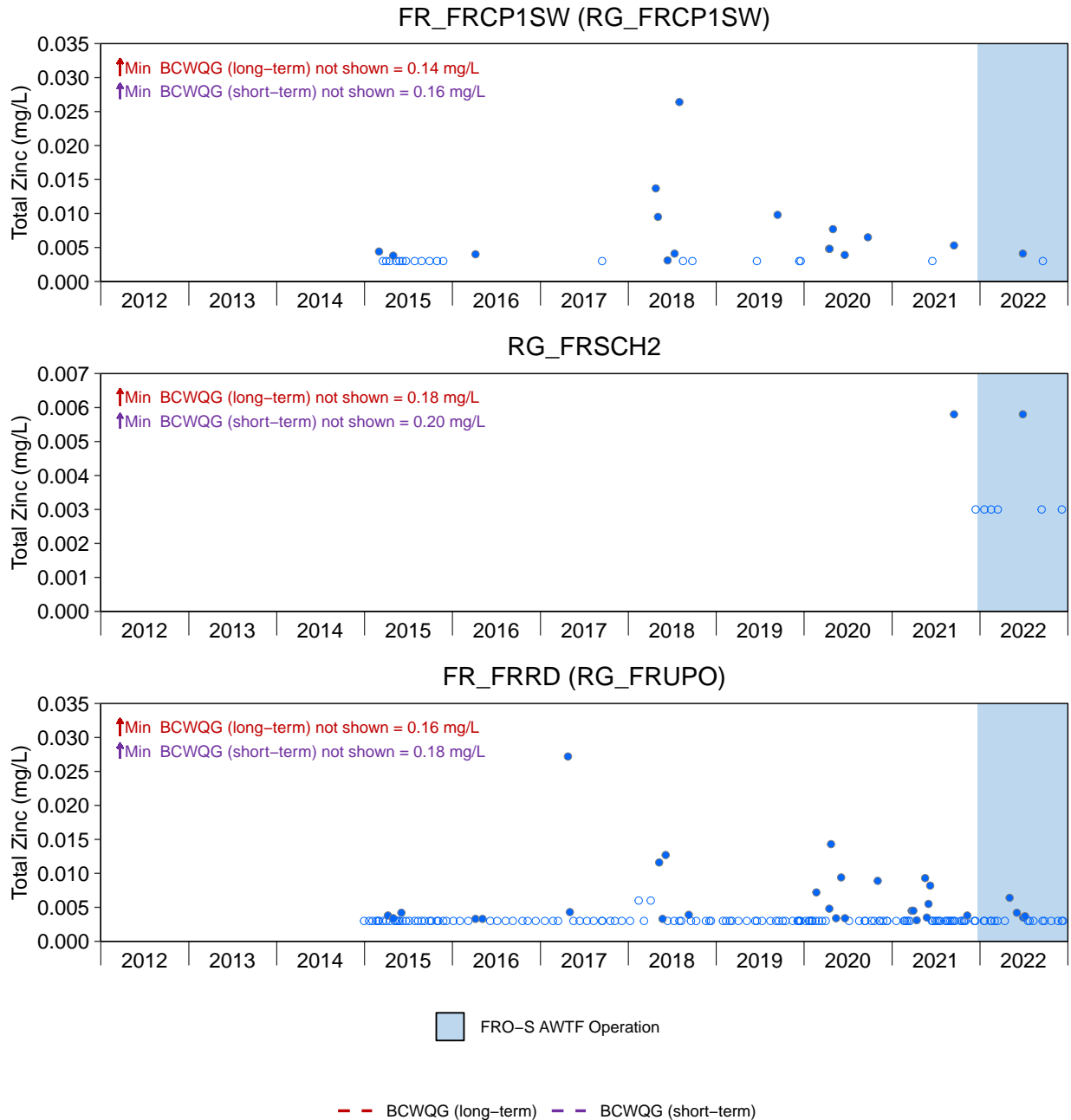


Figure D.22: Time Series Plots for Total Zinc Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

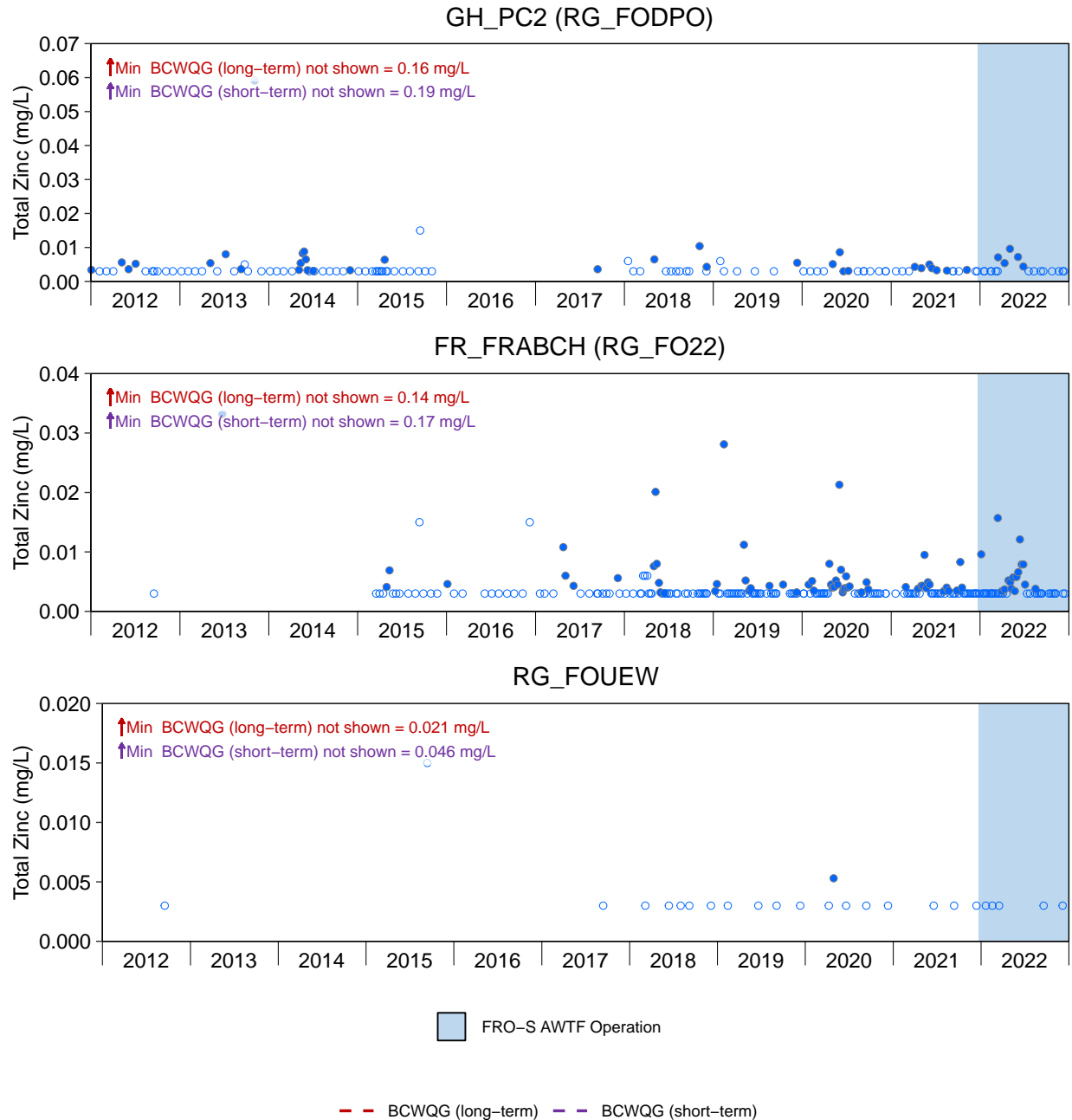


Figure D.22: Time Series Plots for Total Zinc Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

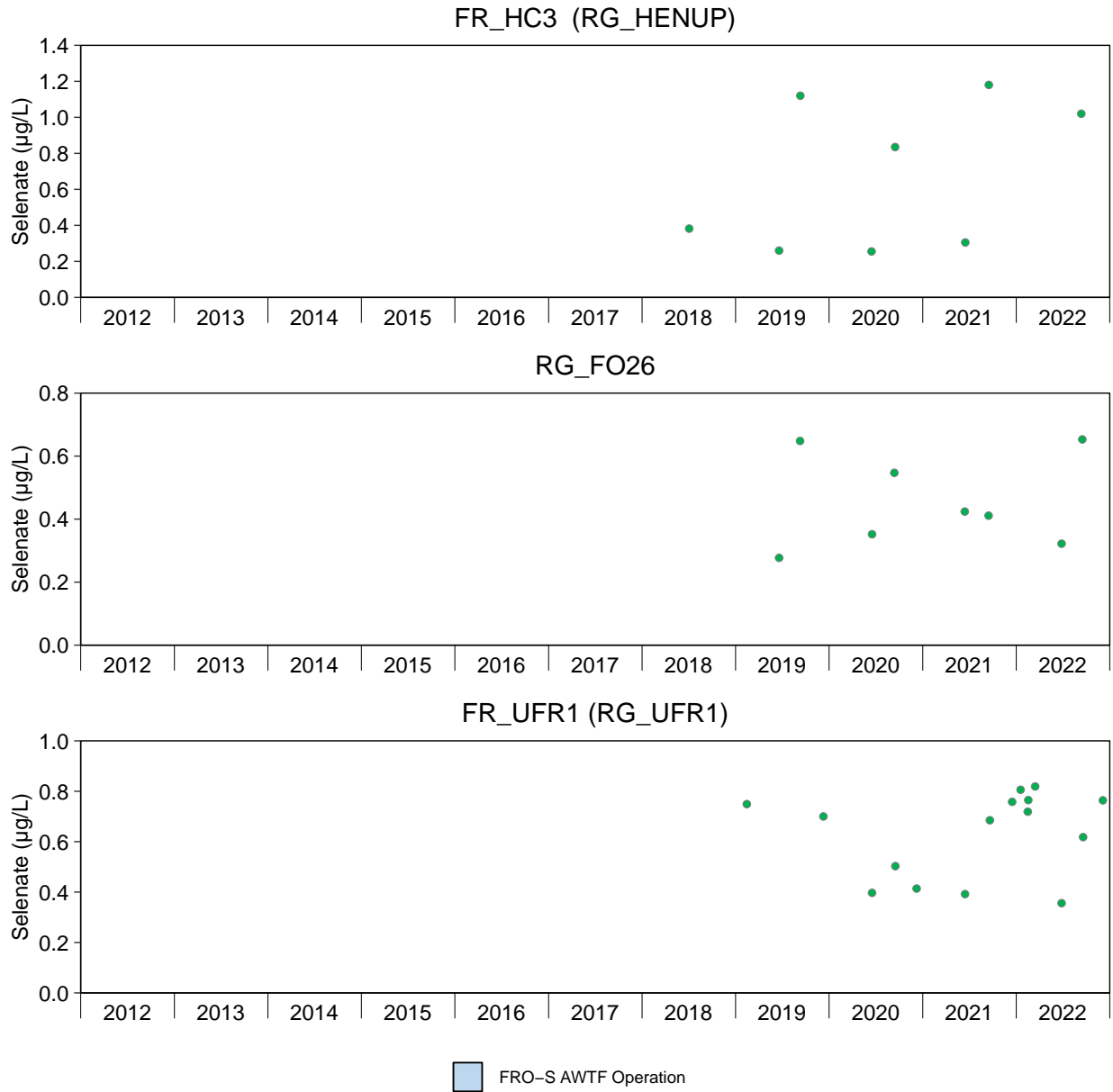


Figure D.23: Time Series Plots for Selenate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

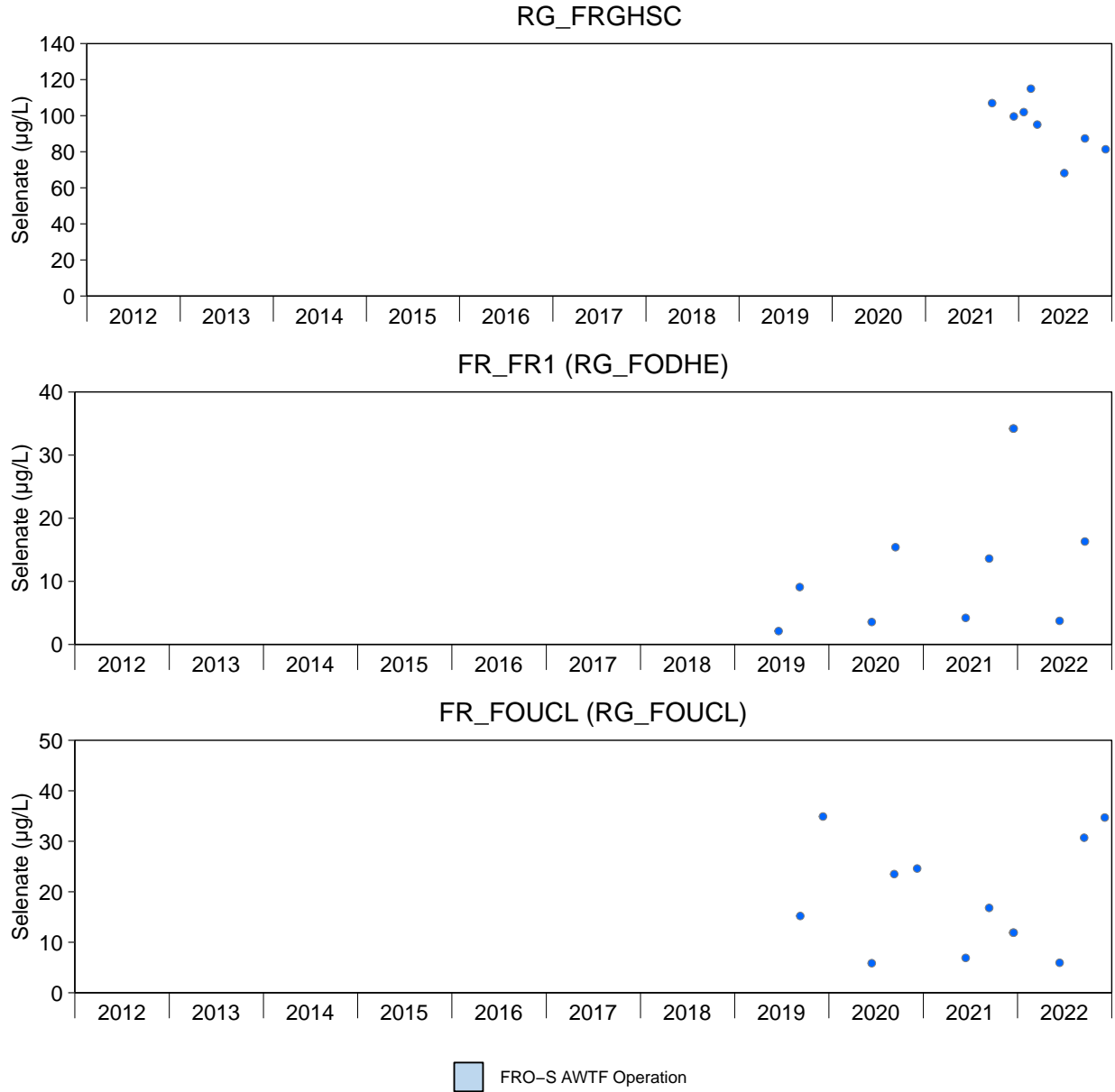


Figure D.23: Time Series Plots for Selenate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

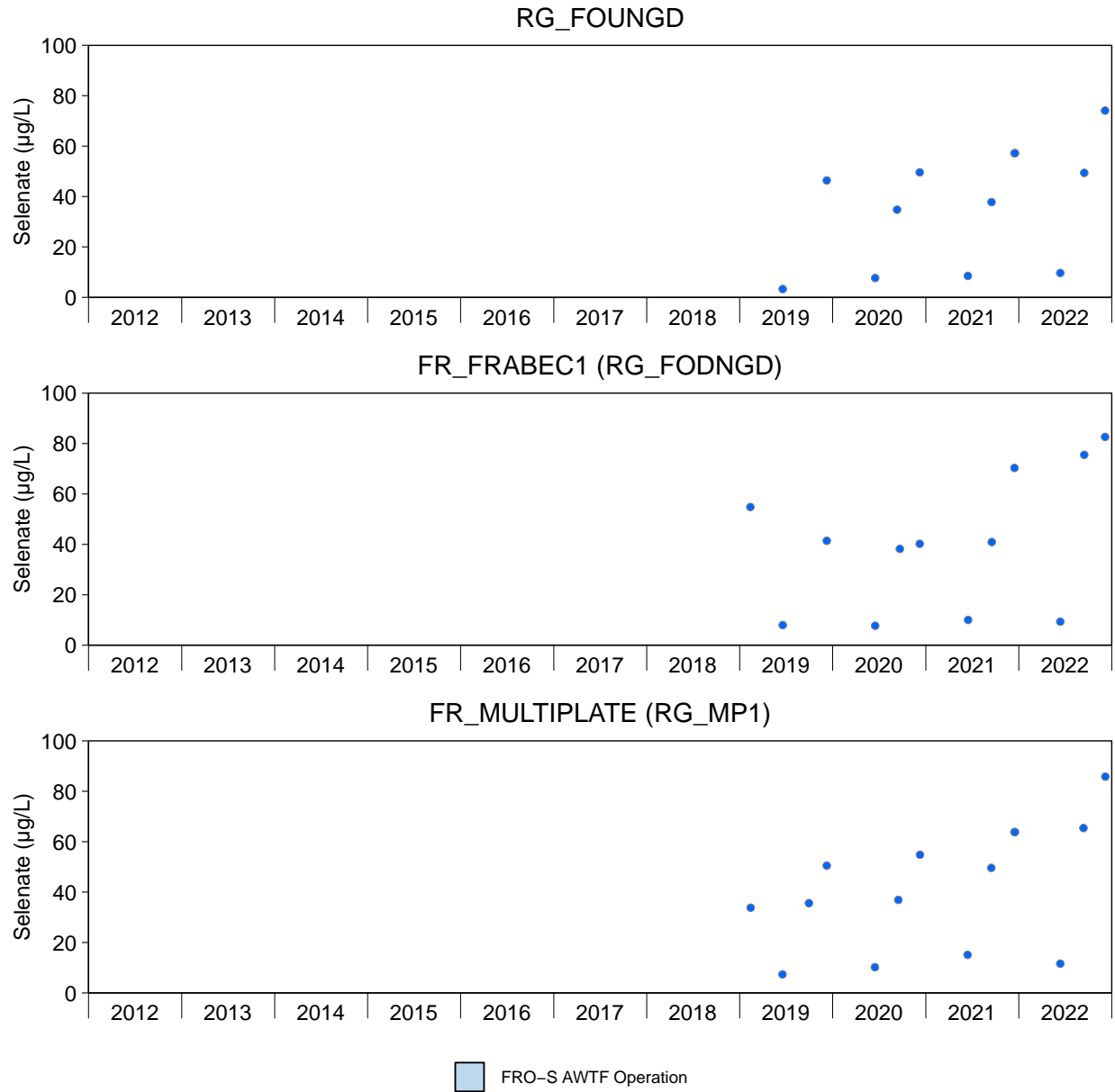


Figure D.23: Time Series Plots for Selenate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

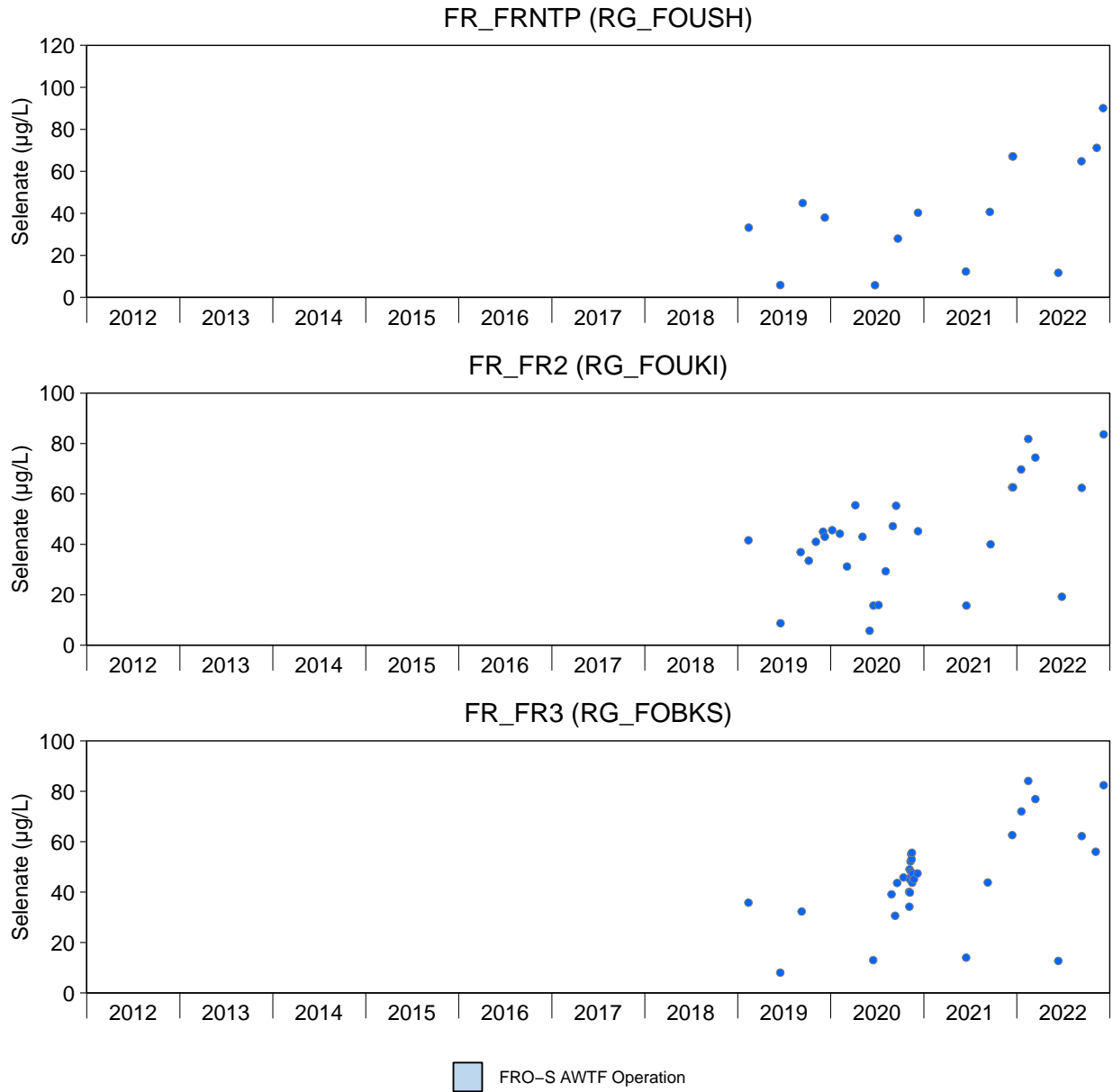


Figure D.23: Time Series Plots for Selenate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

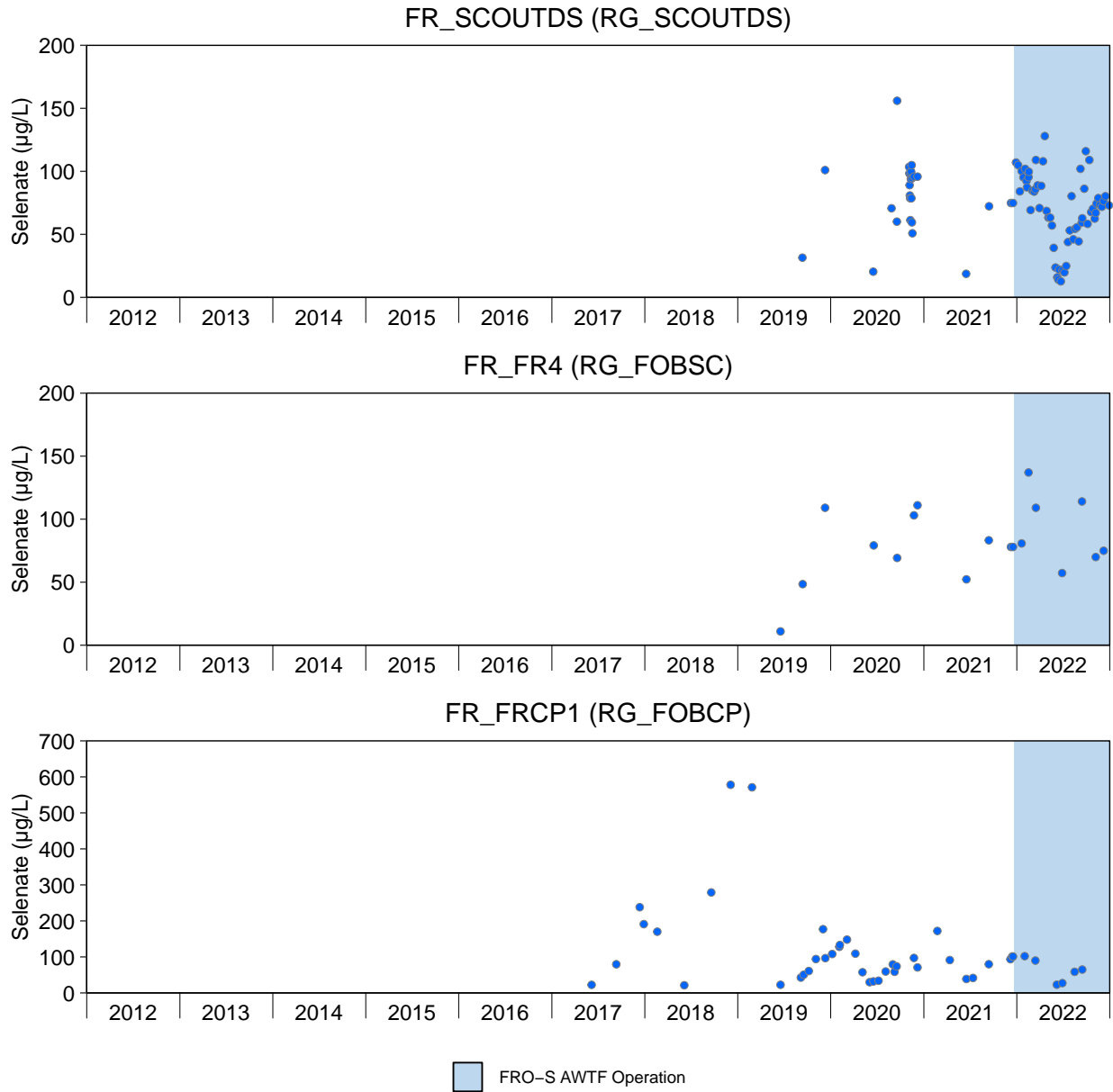


Figure D.23: Time Series Plots for Selenate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

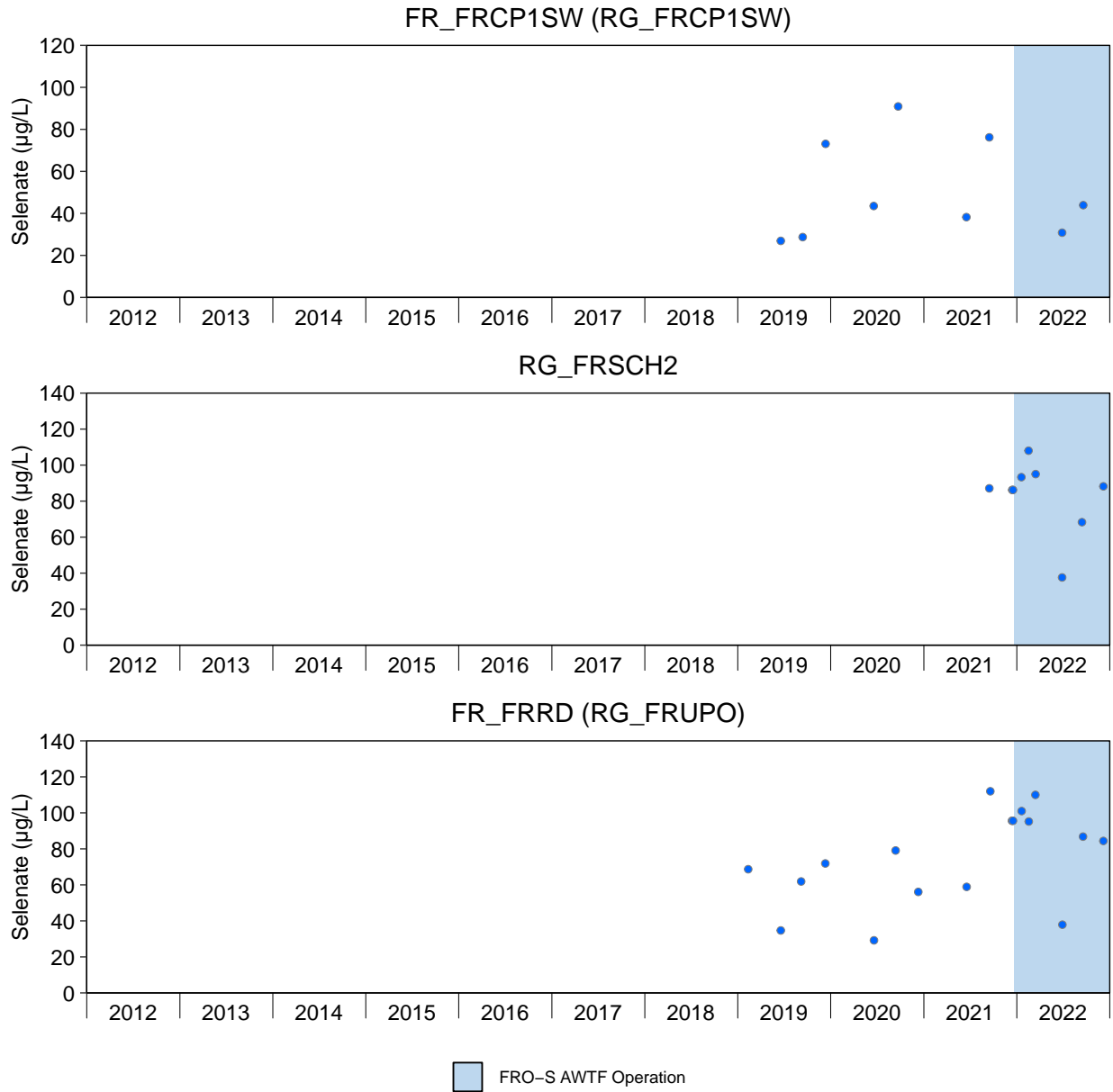


Figure D.23: Time Series Plots for Selenate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

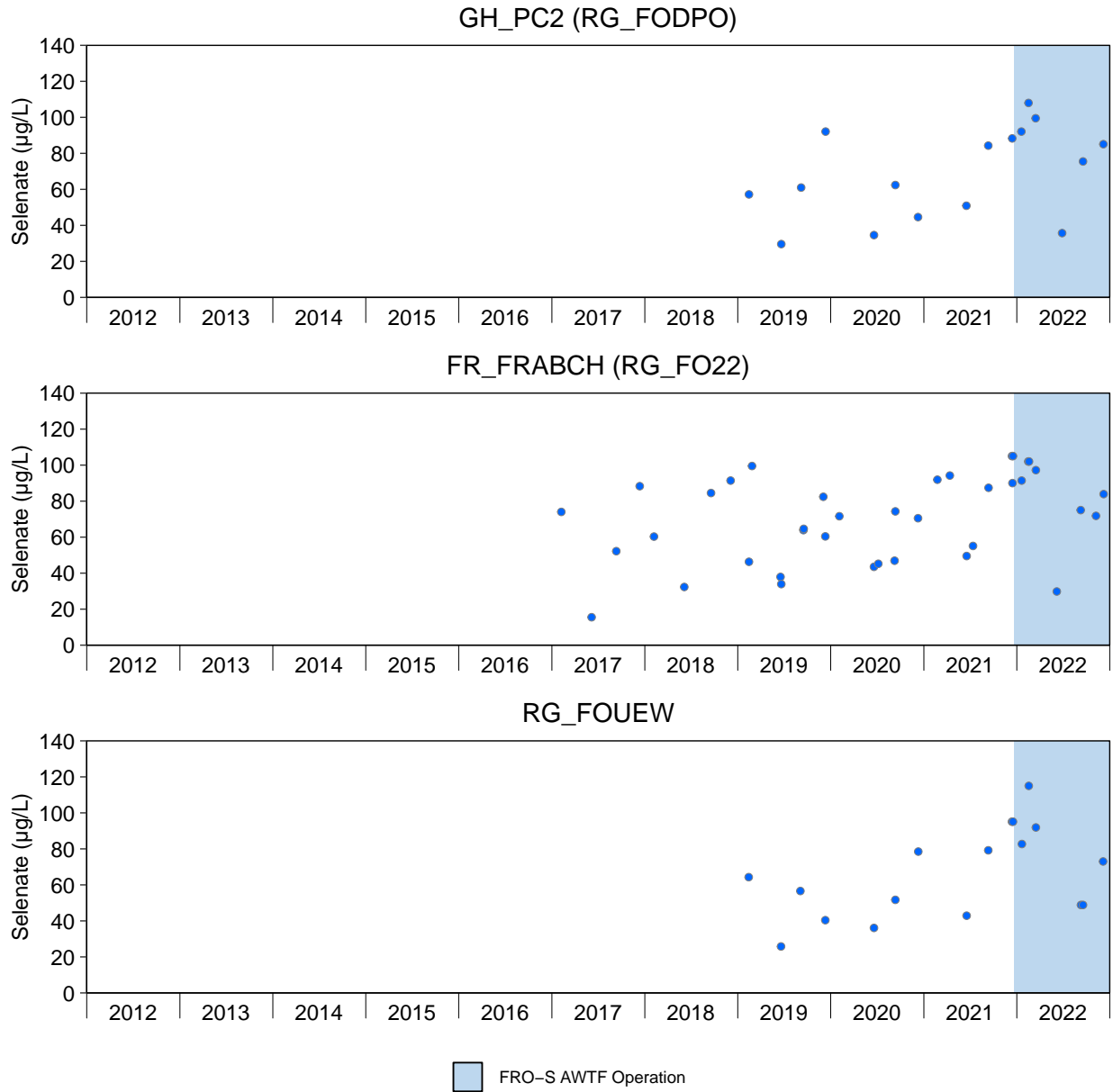


Figure D.23: Time Series Plots for Selenate Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

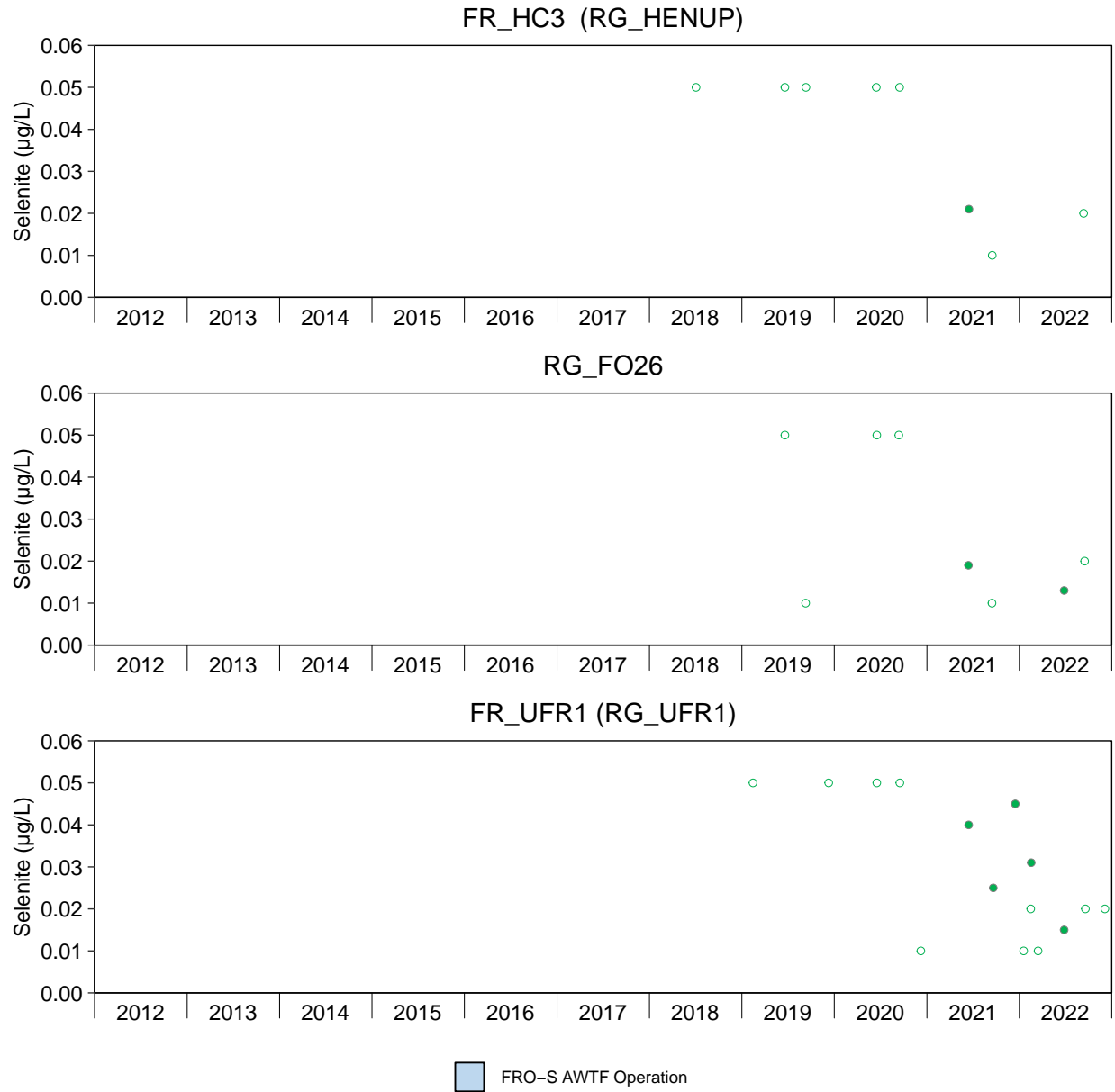


Figure D.24: Time Series Plots for Selenite Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

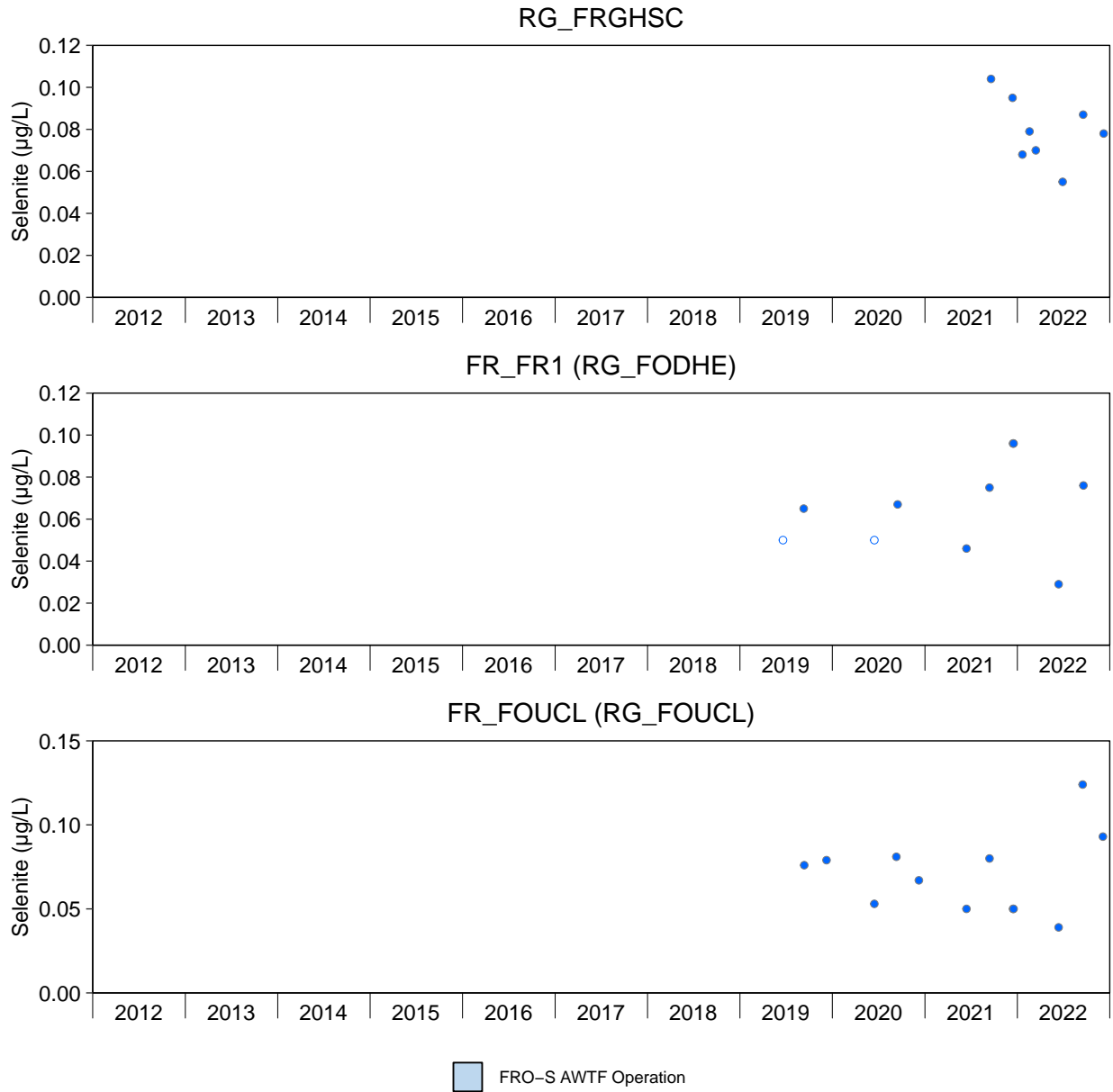


Figure D.24: Time Series Plots for Selenite Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

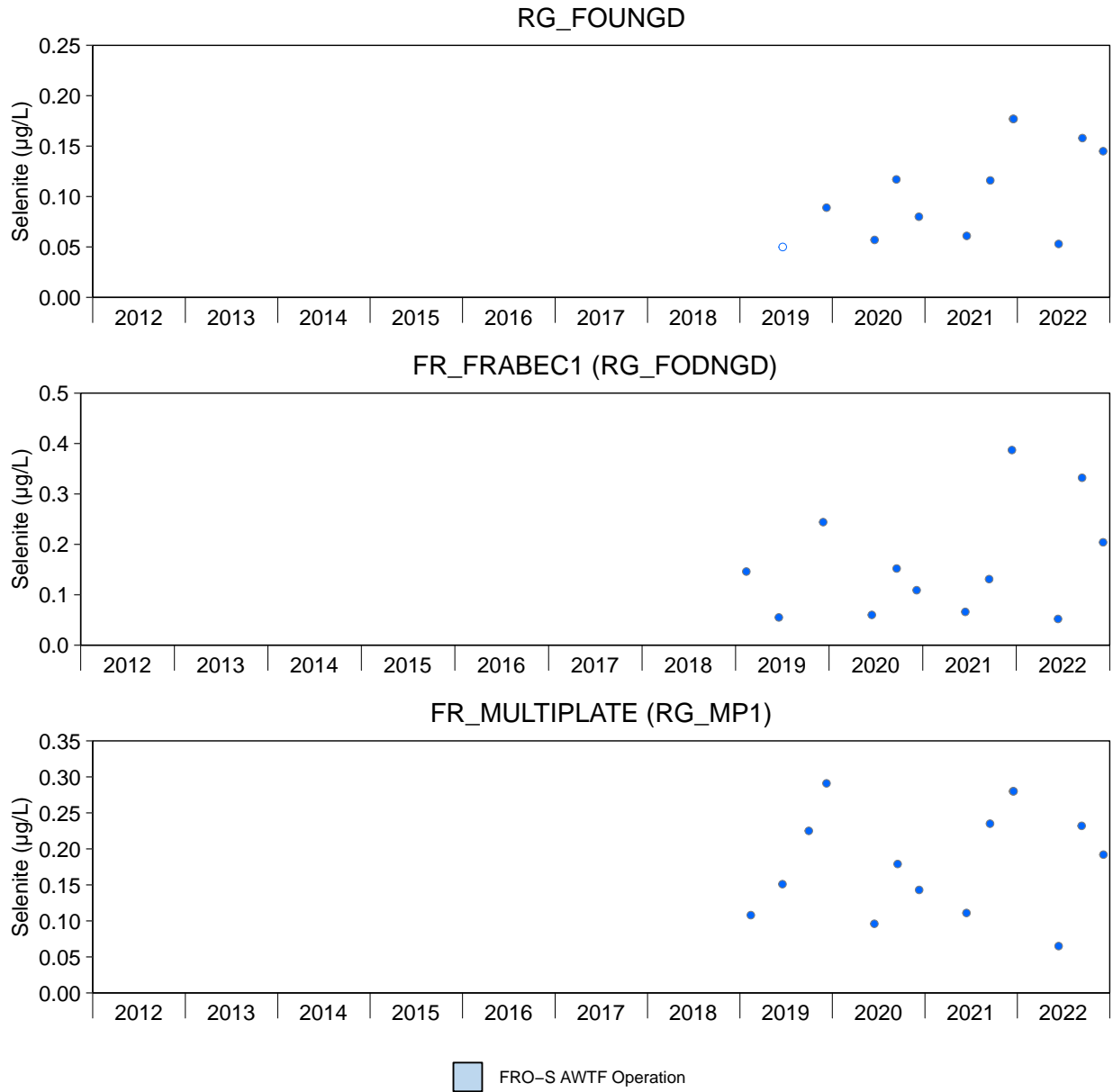


Figure D.24: Time Series Plots for Selenite Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

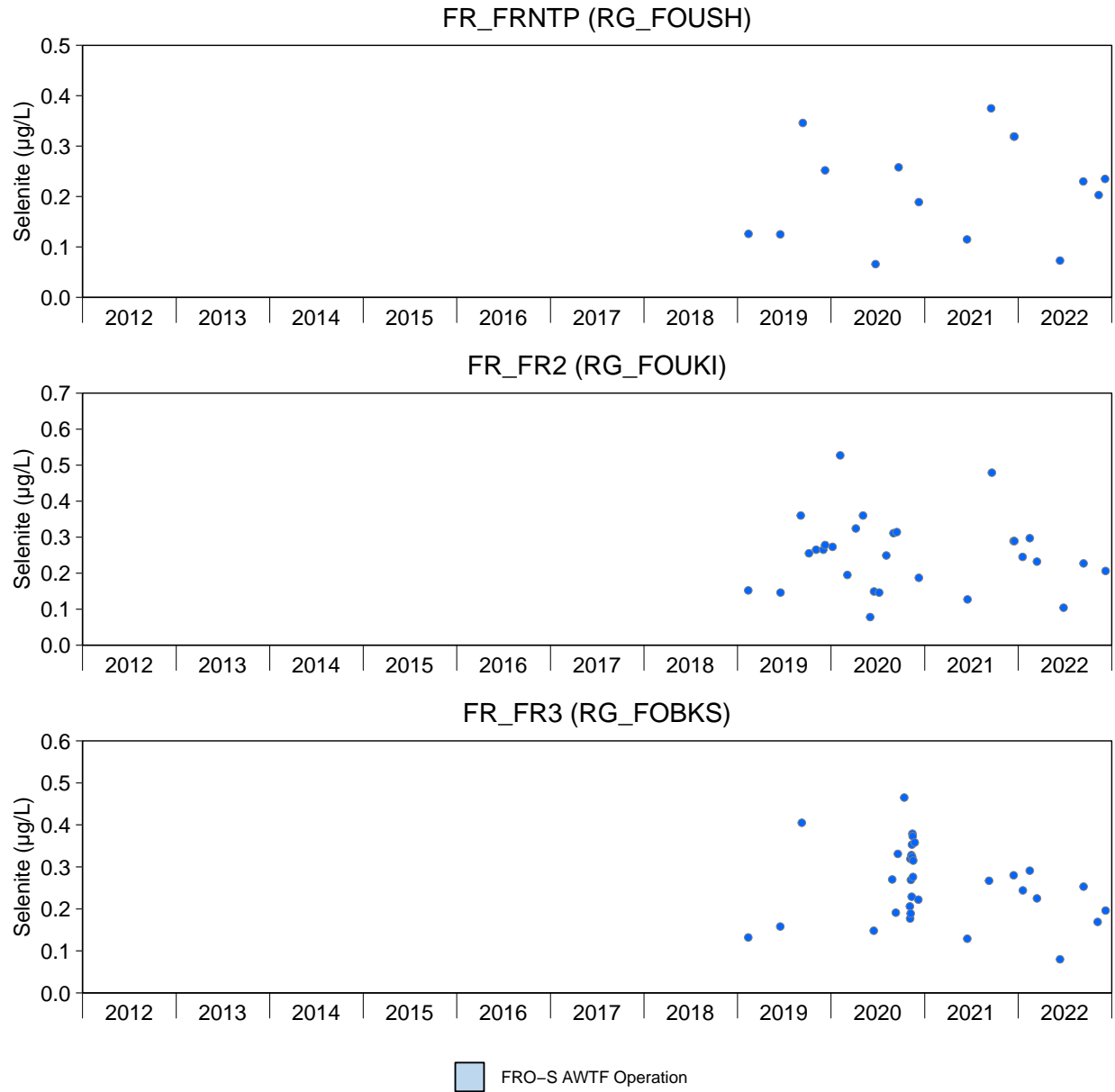


Figure D.24: Time Series Plots for Selenite Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

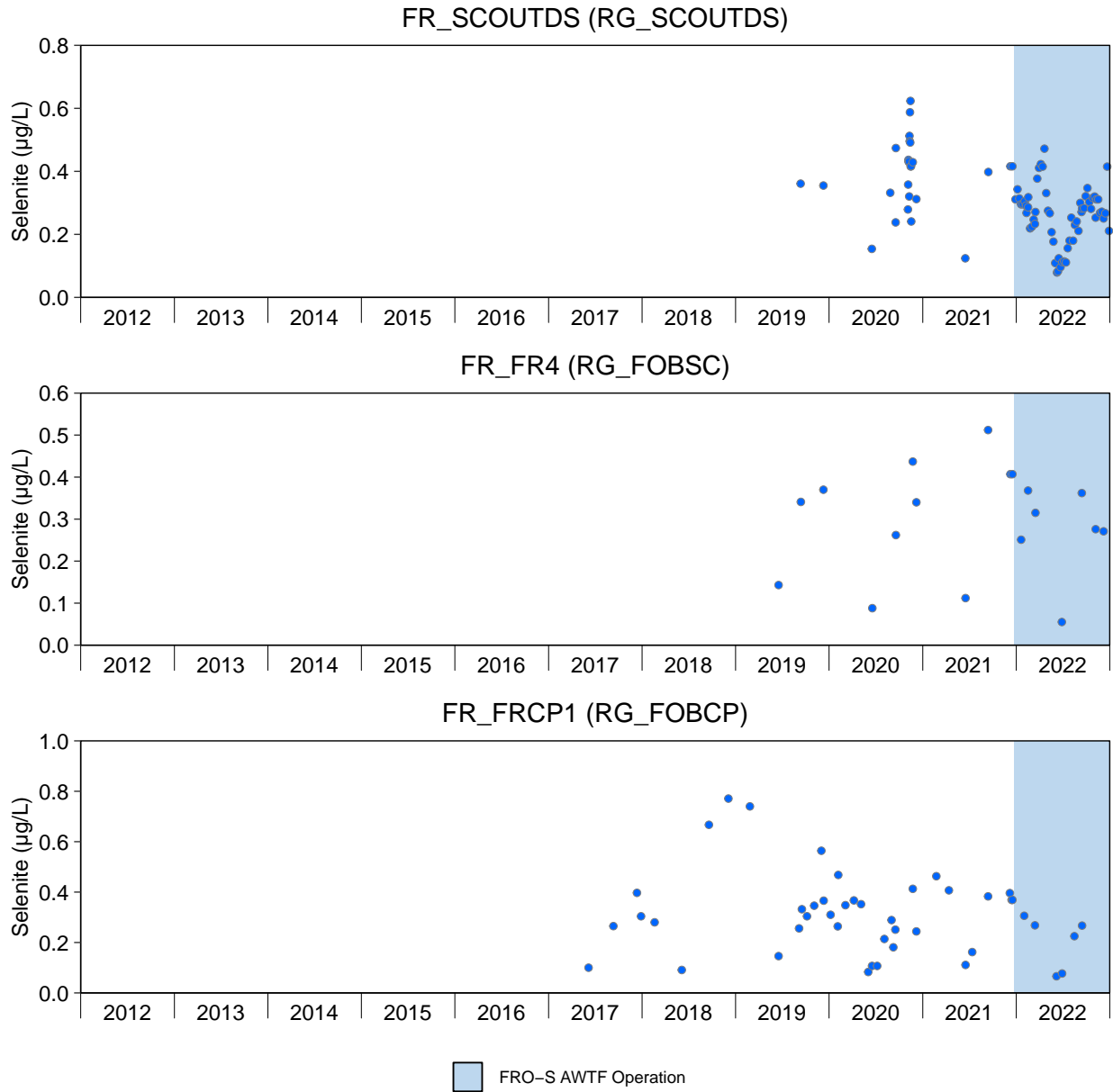


Figure D.24: Time Series Plots for Selenite Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

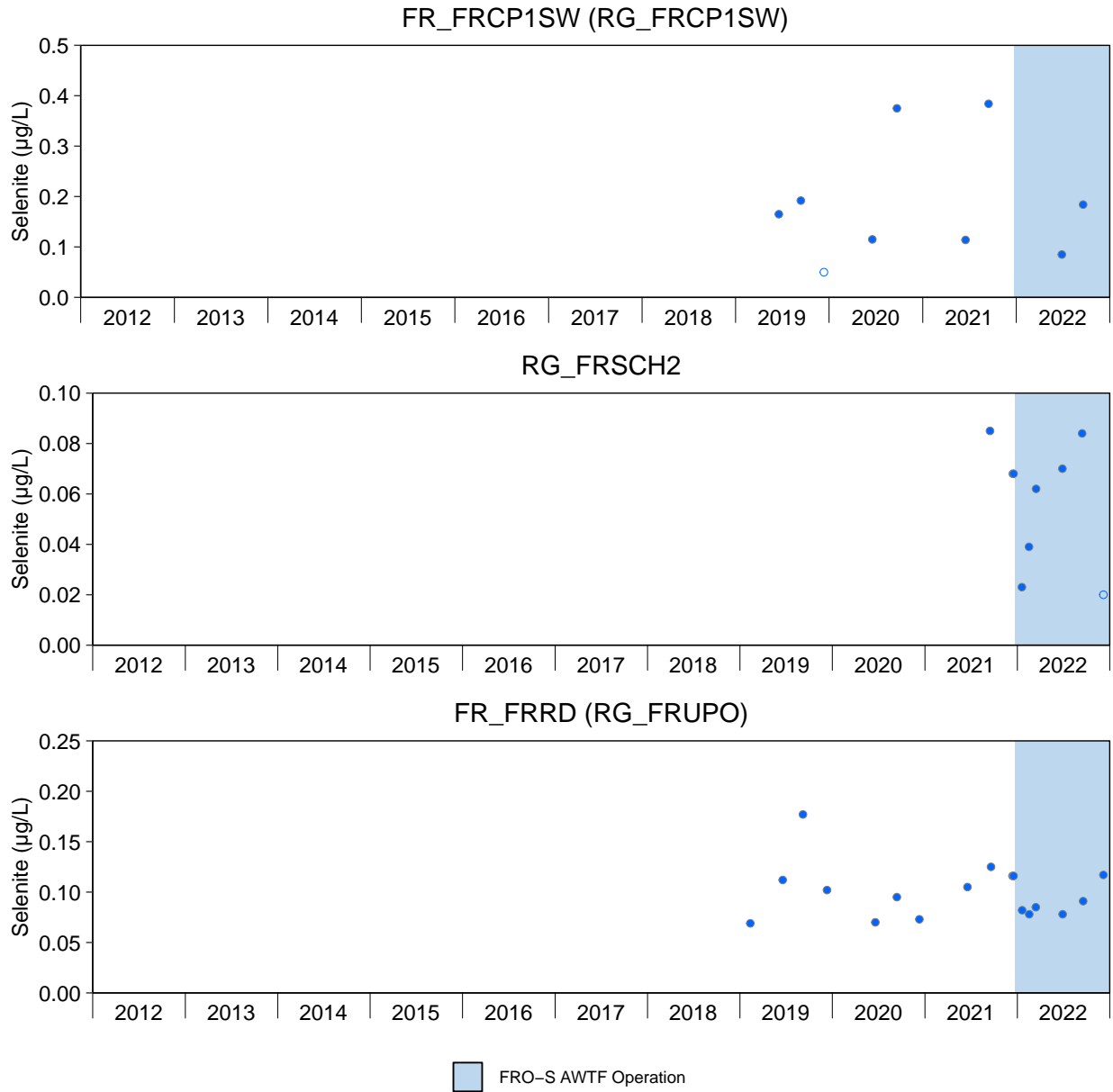


Figure D.24: Time Series Plots for Selenite Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

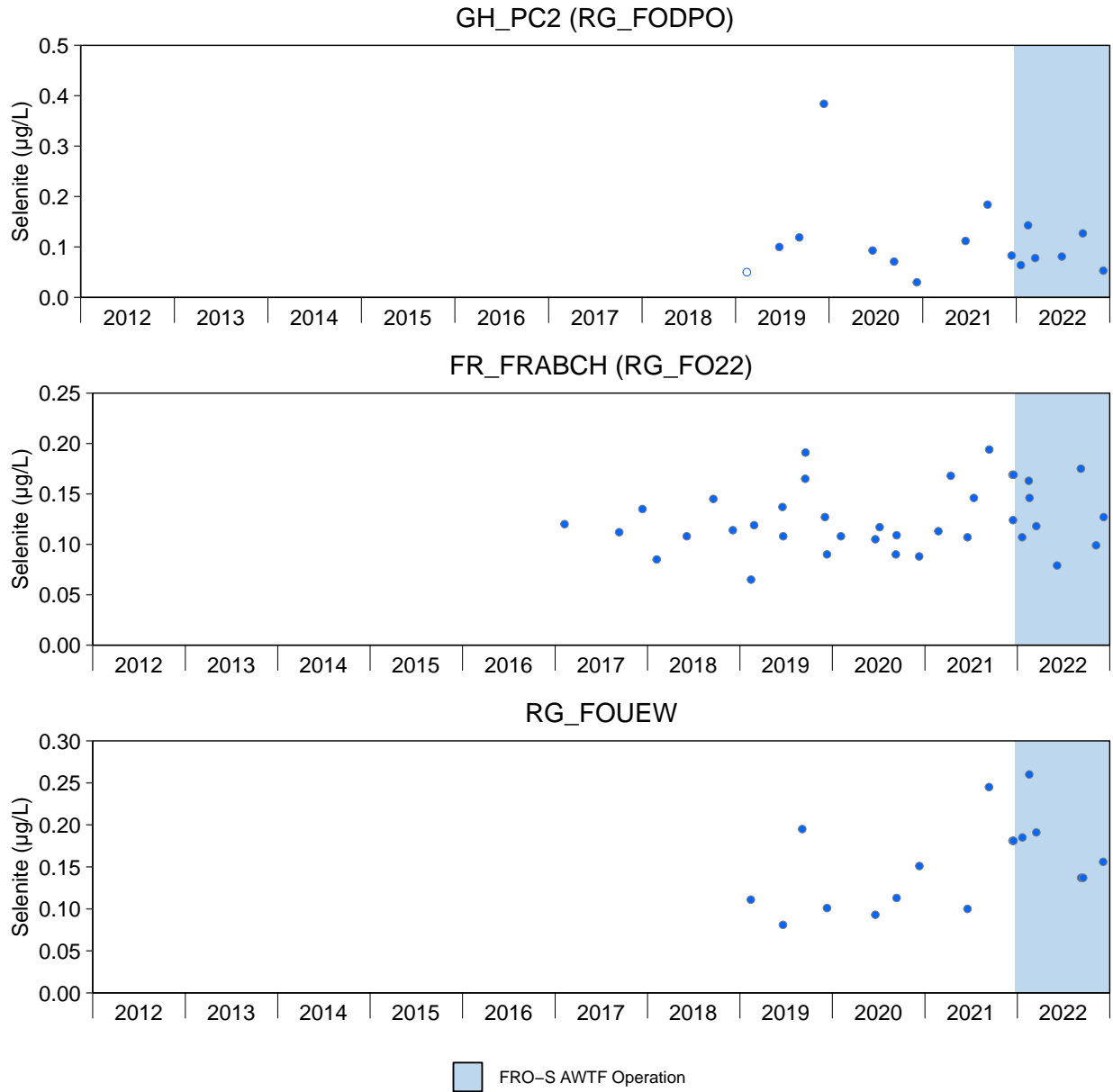


Figure D.24: Time Series Plots for Selenite Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

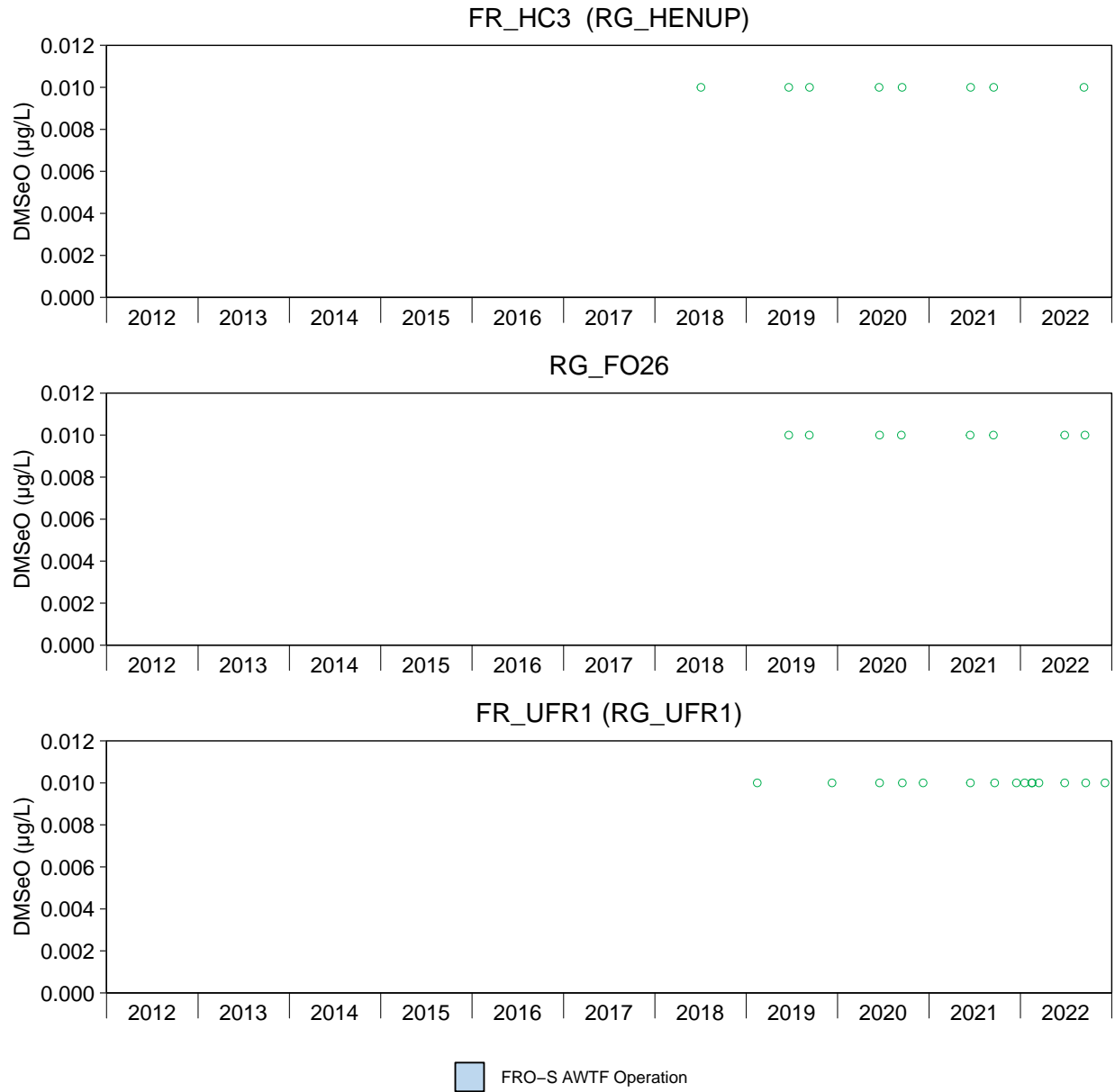


Figure D.25: Time Series Plots for Dimethylselenoxide Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

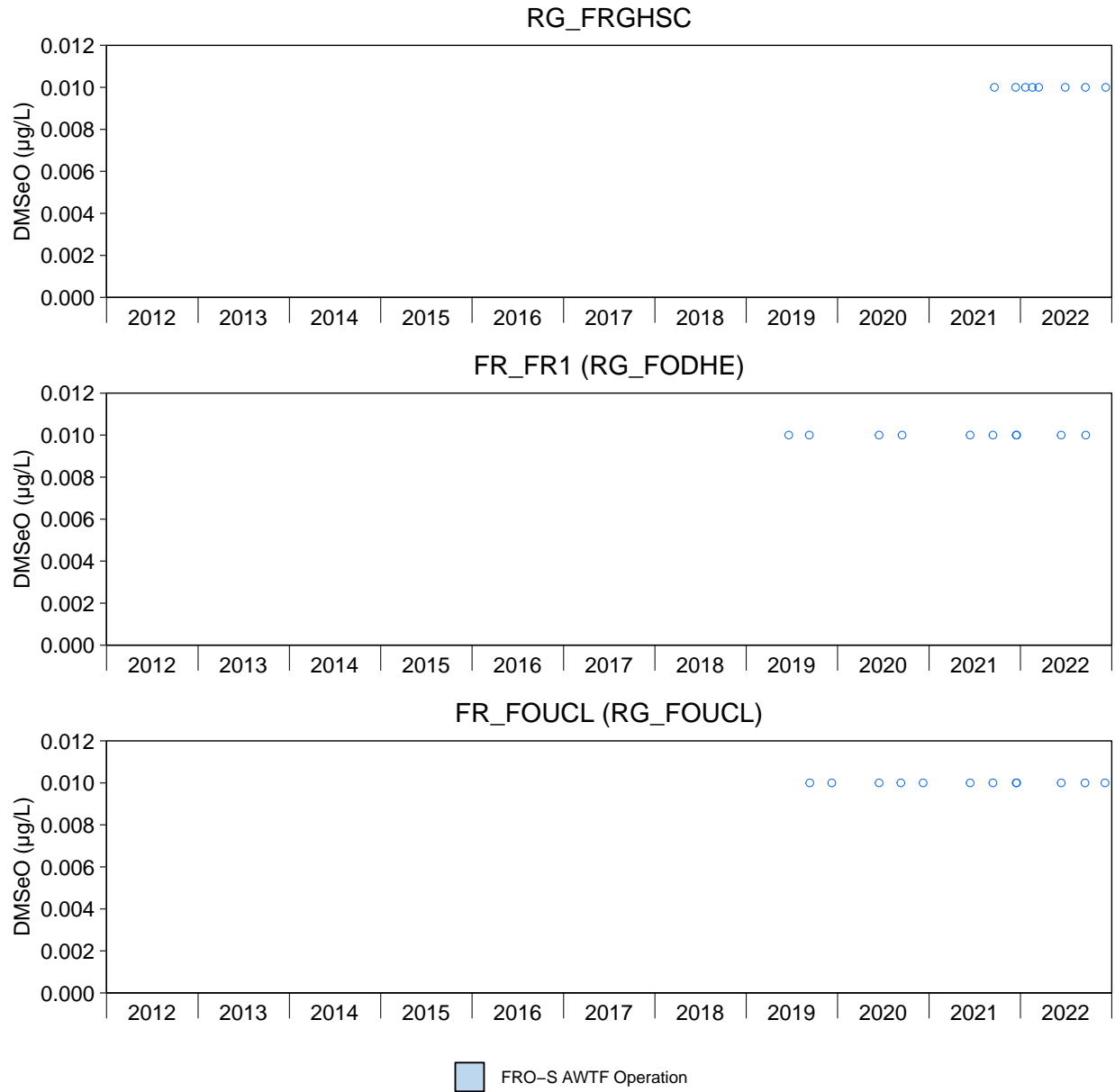


Figure D.25: Time Series Plots for Dimethylselenoxide Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

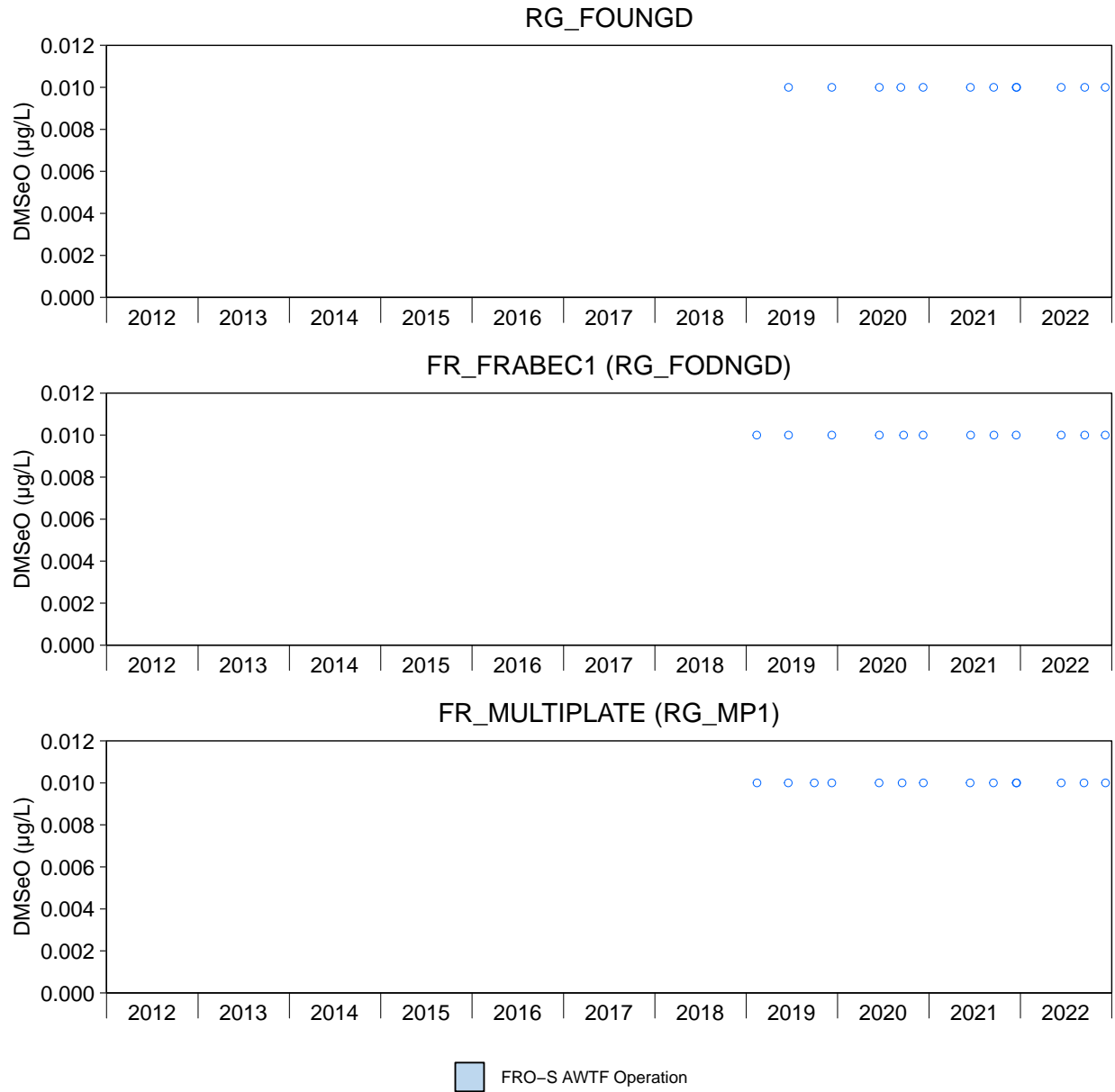


Figure D.25: Time Series Plots for Dimethylselenoxide Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

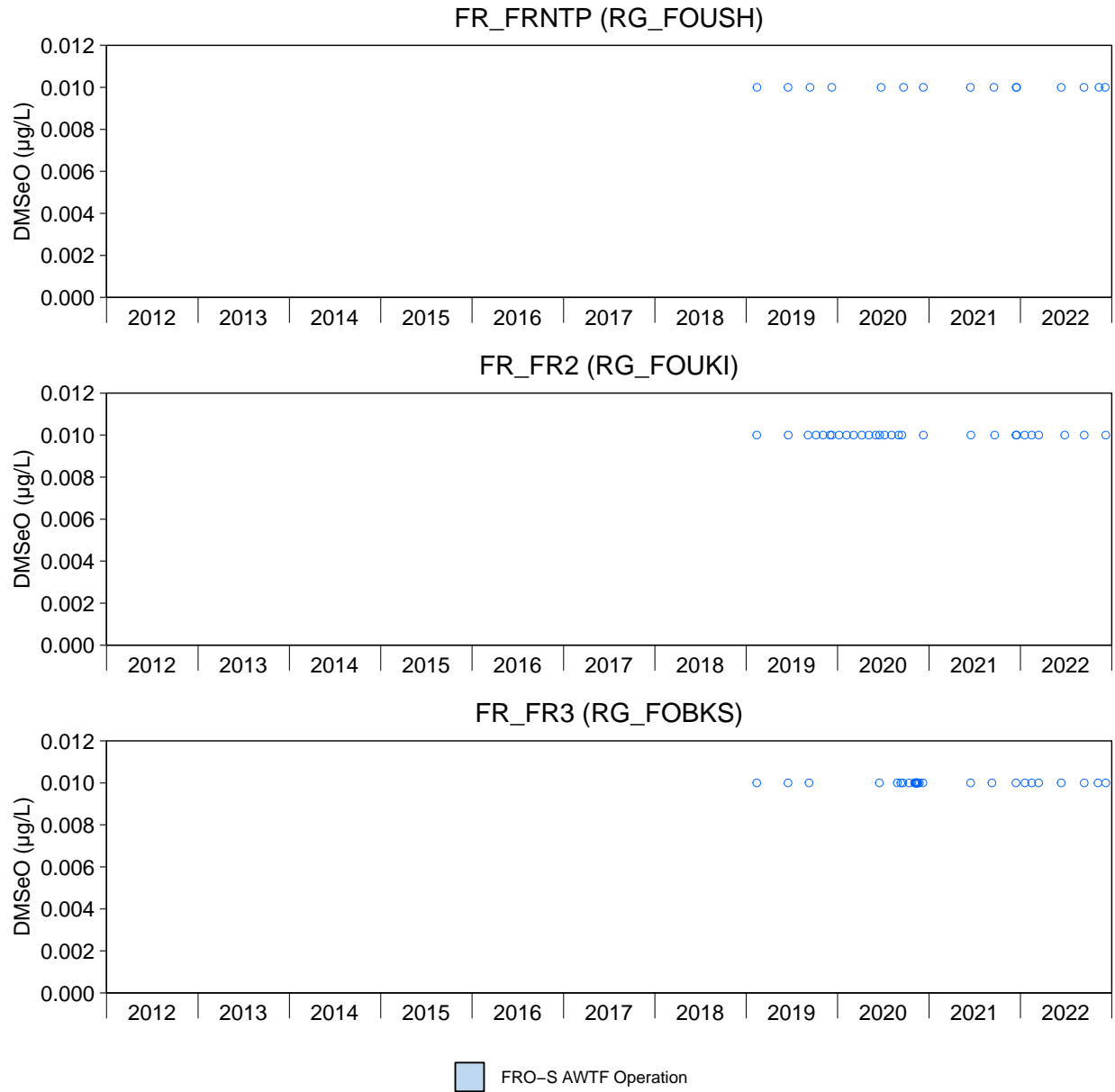


Figure D.25: Time Series Plots for Dimethylselenoxide Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

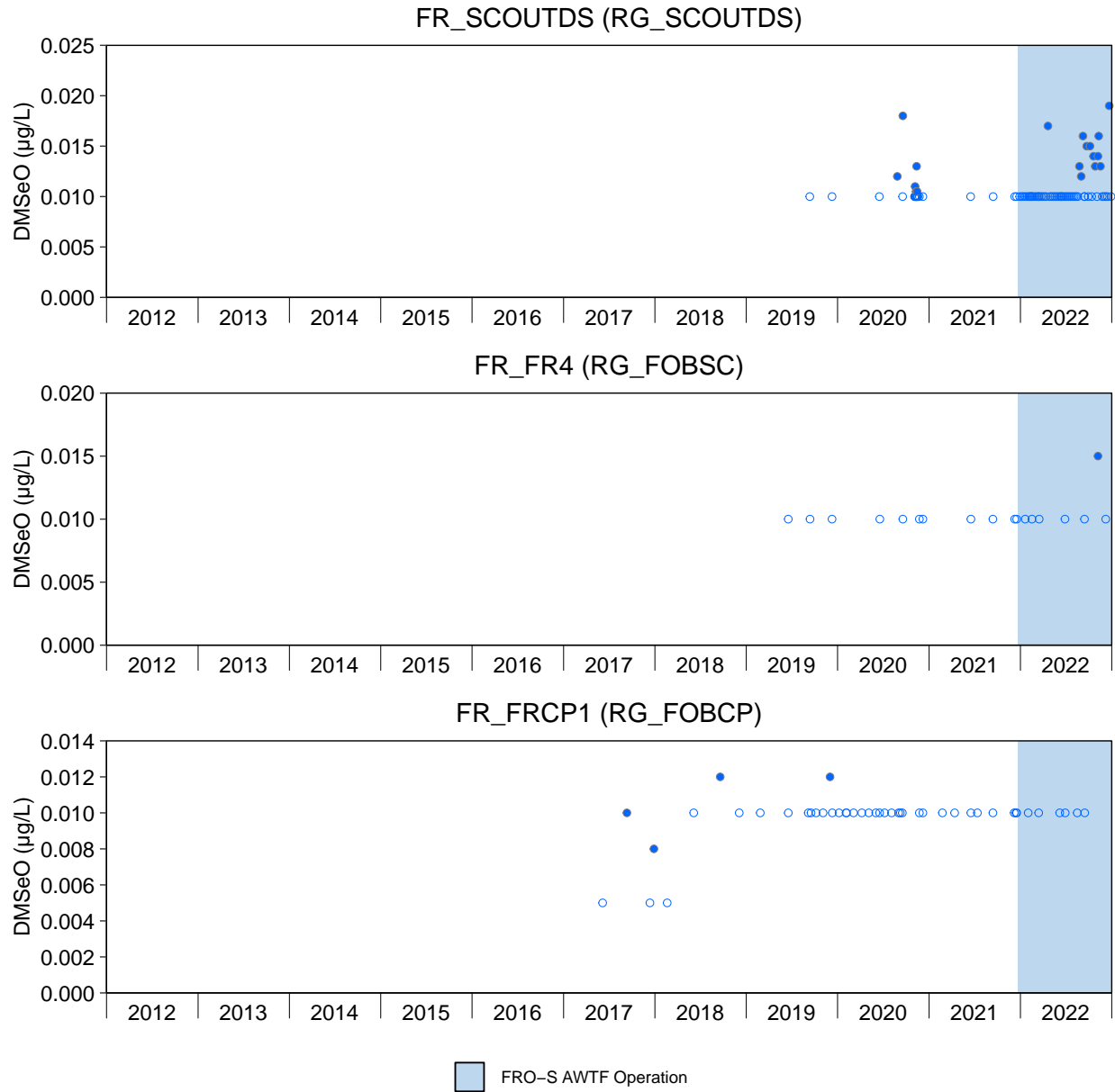


Figure D.25: Time Series Plots for Dimethylselenoxide Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

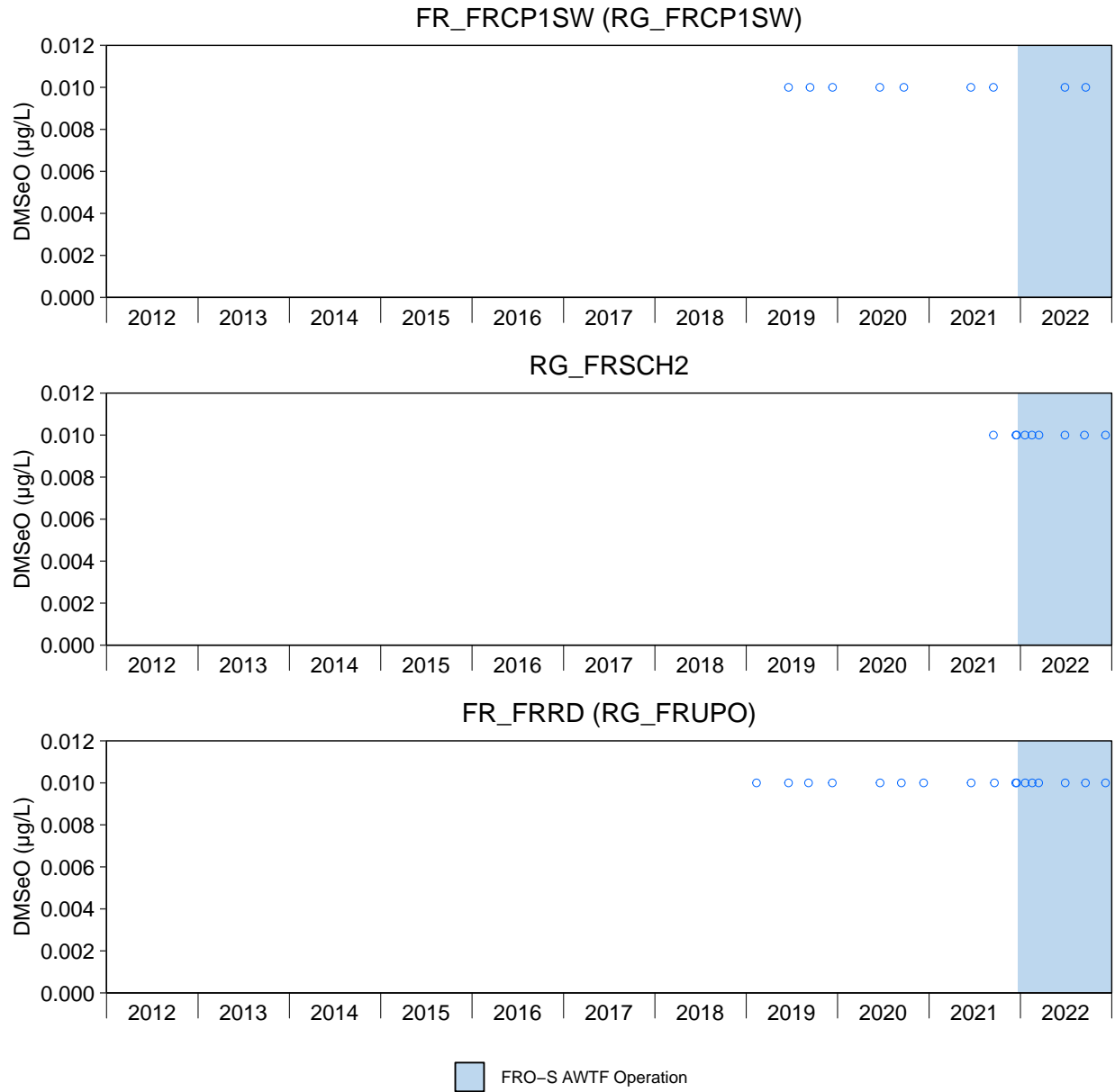


Figure D.25: Time Series Plots for Dimethylselenoxide Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

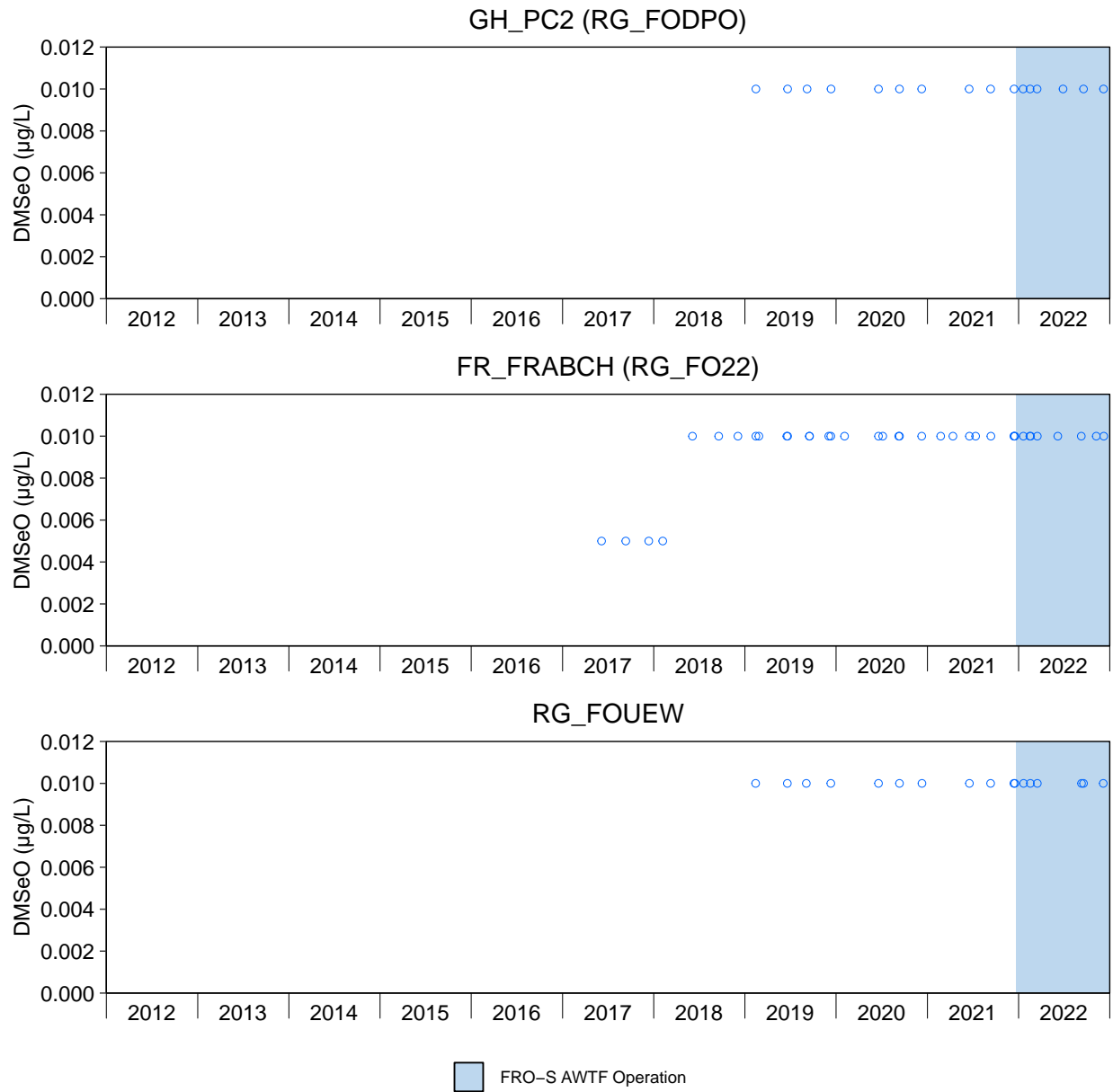


Figure D.25: Time Series Plots for Dimethylselenoxide Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

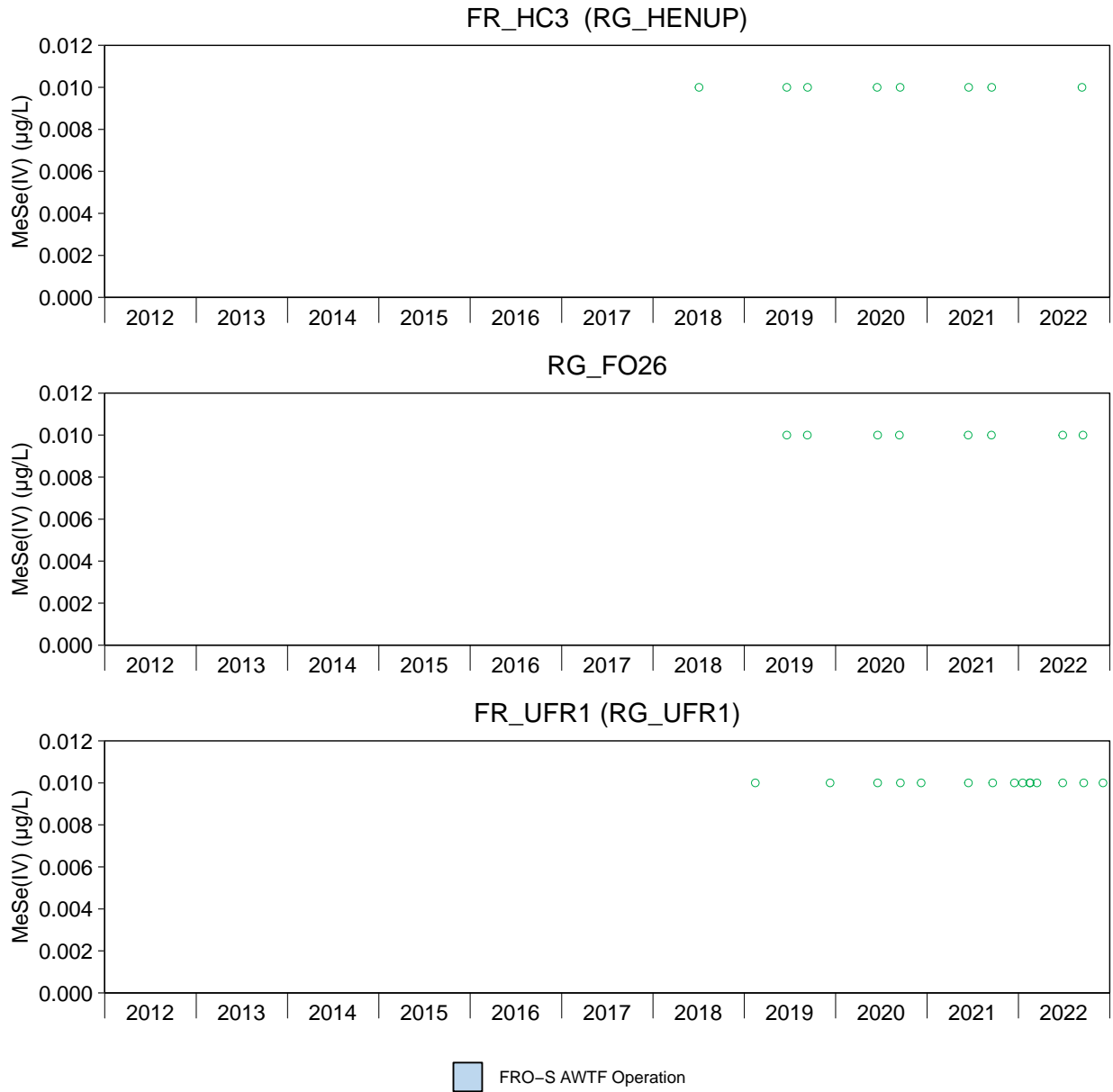


Figure D.26: Time Series Plots for Methylseleninic Acid Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

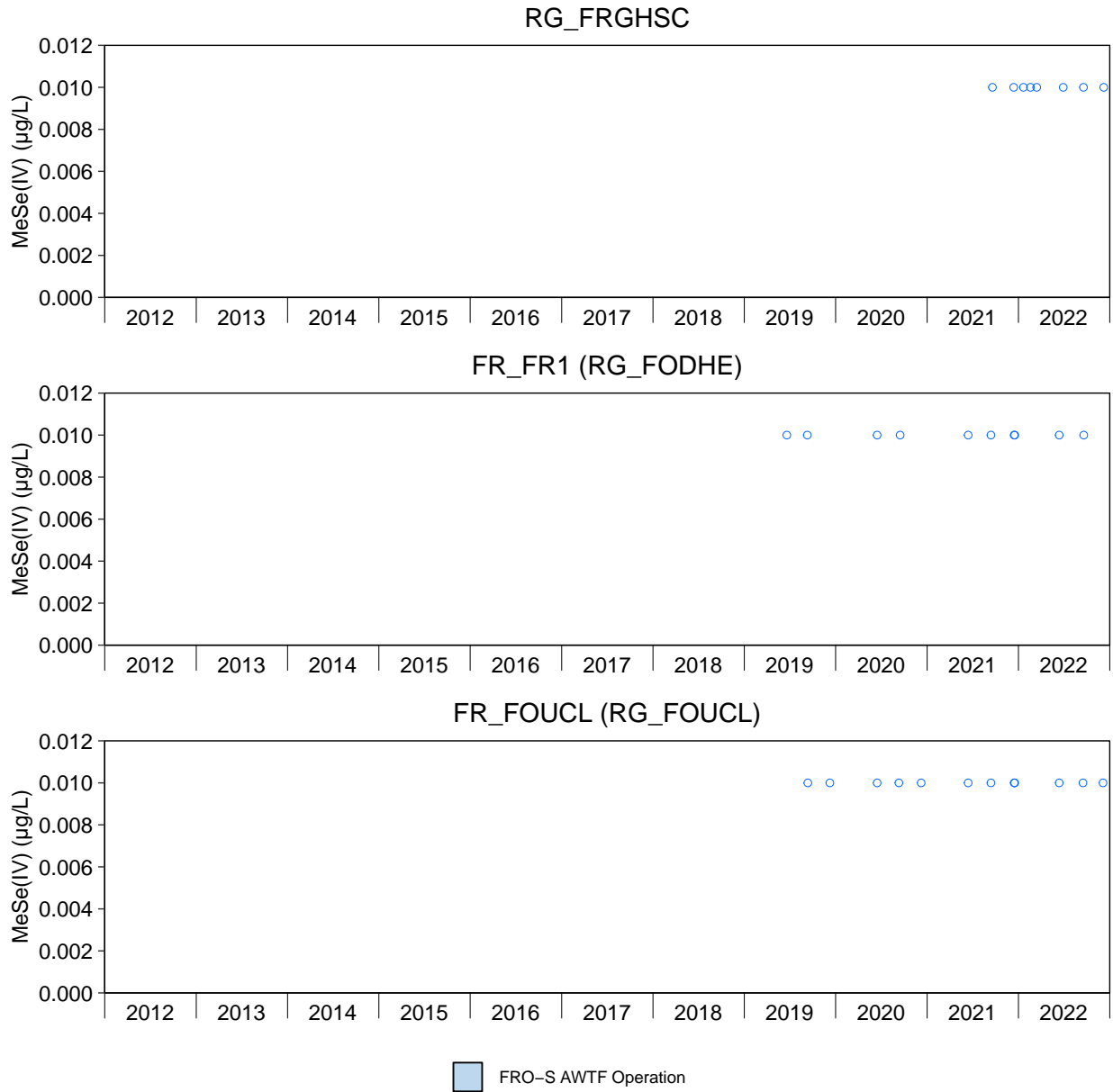


Figure D.26: Time Series Plots for Methylseleninic Acid Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

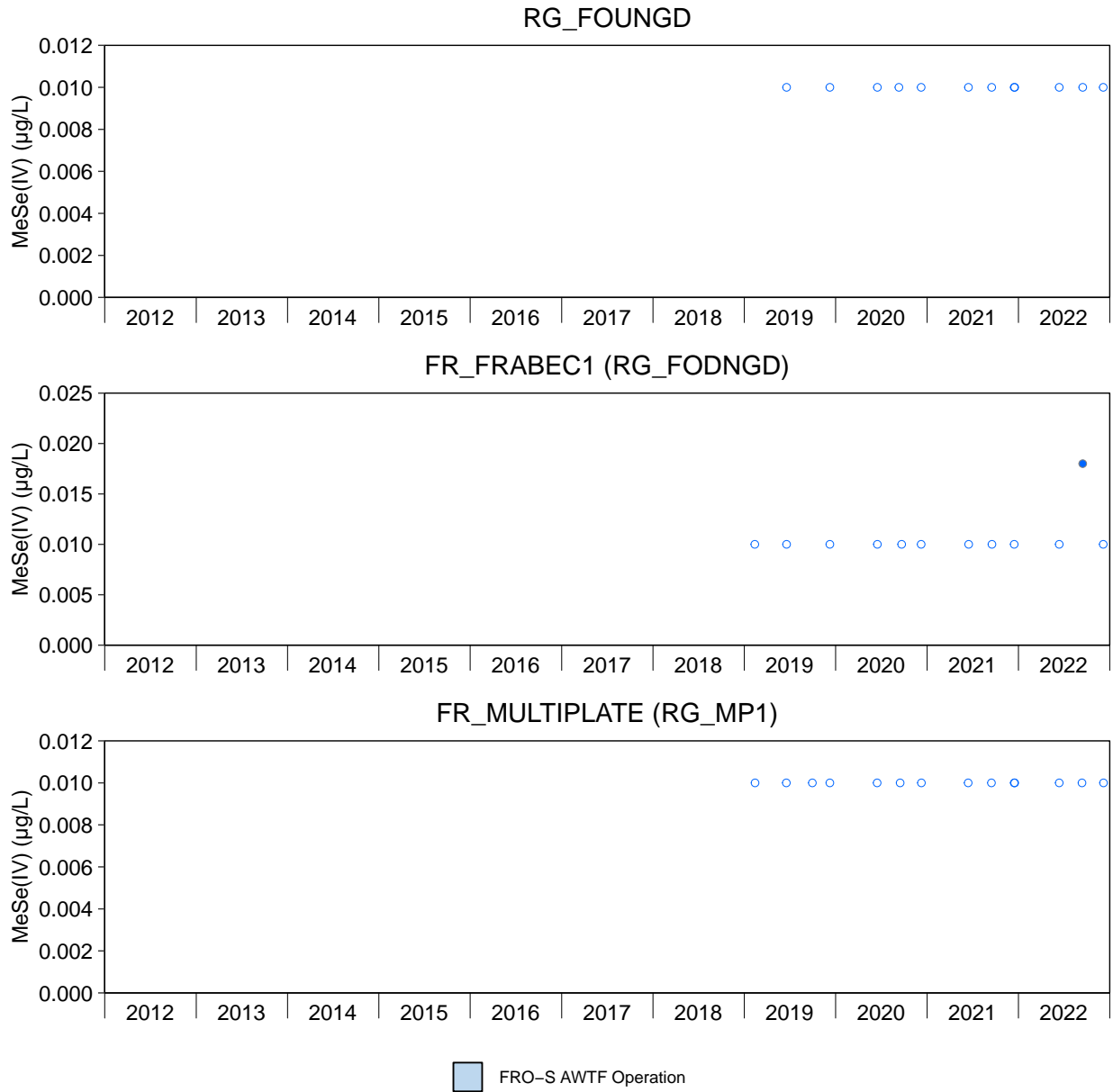


Figure D.26: Time Series Plots for Methylseleninic Acid Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

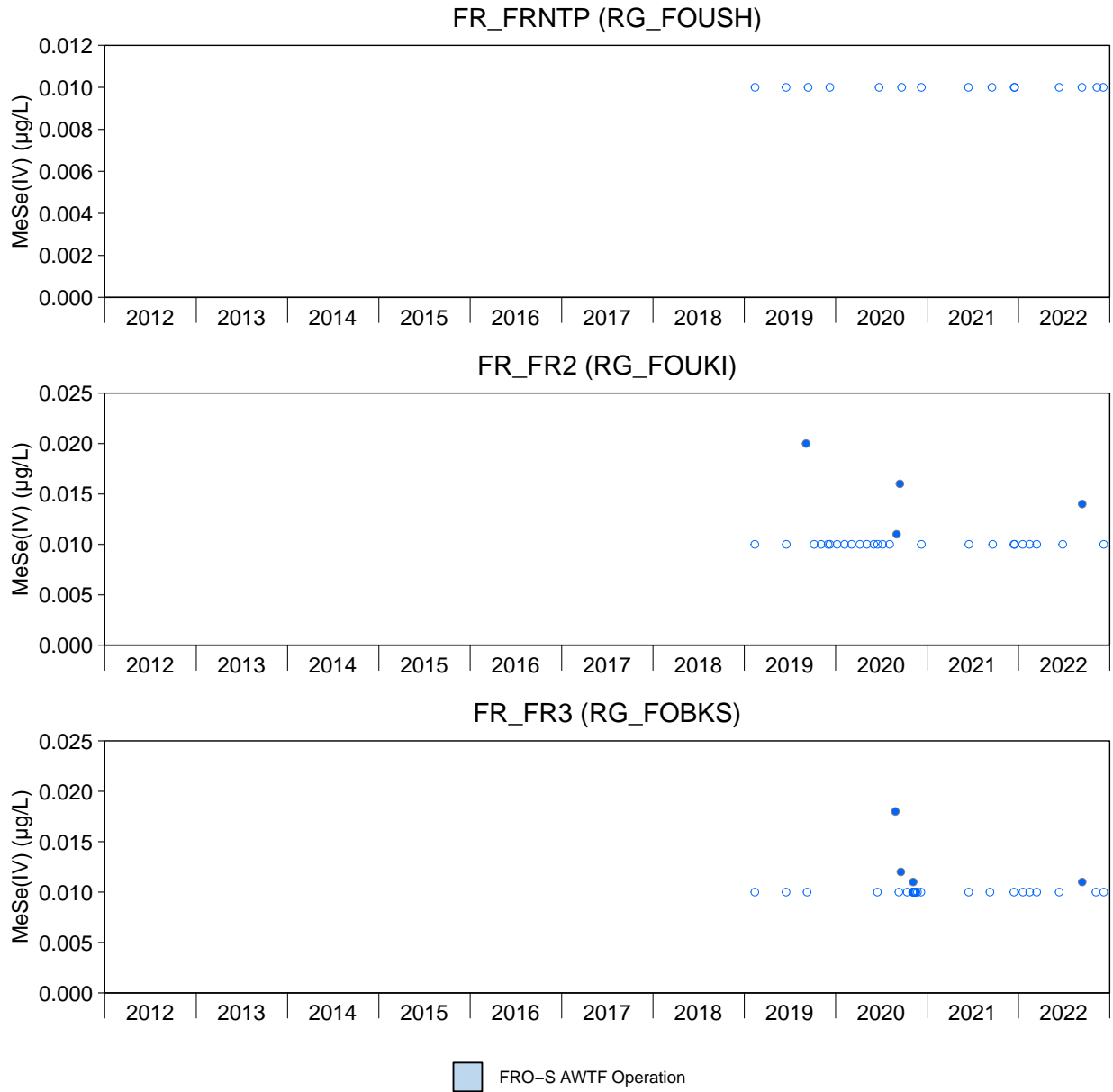


Figure D.26: Time Series Plots for Methylseleninic Acid Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

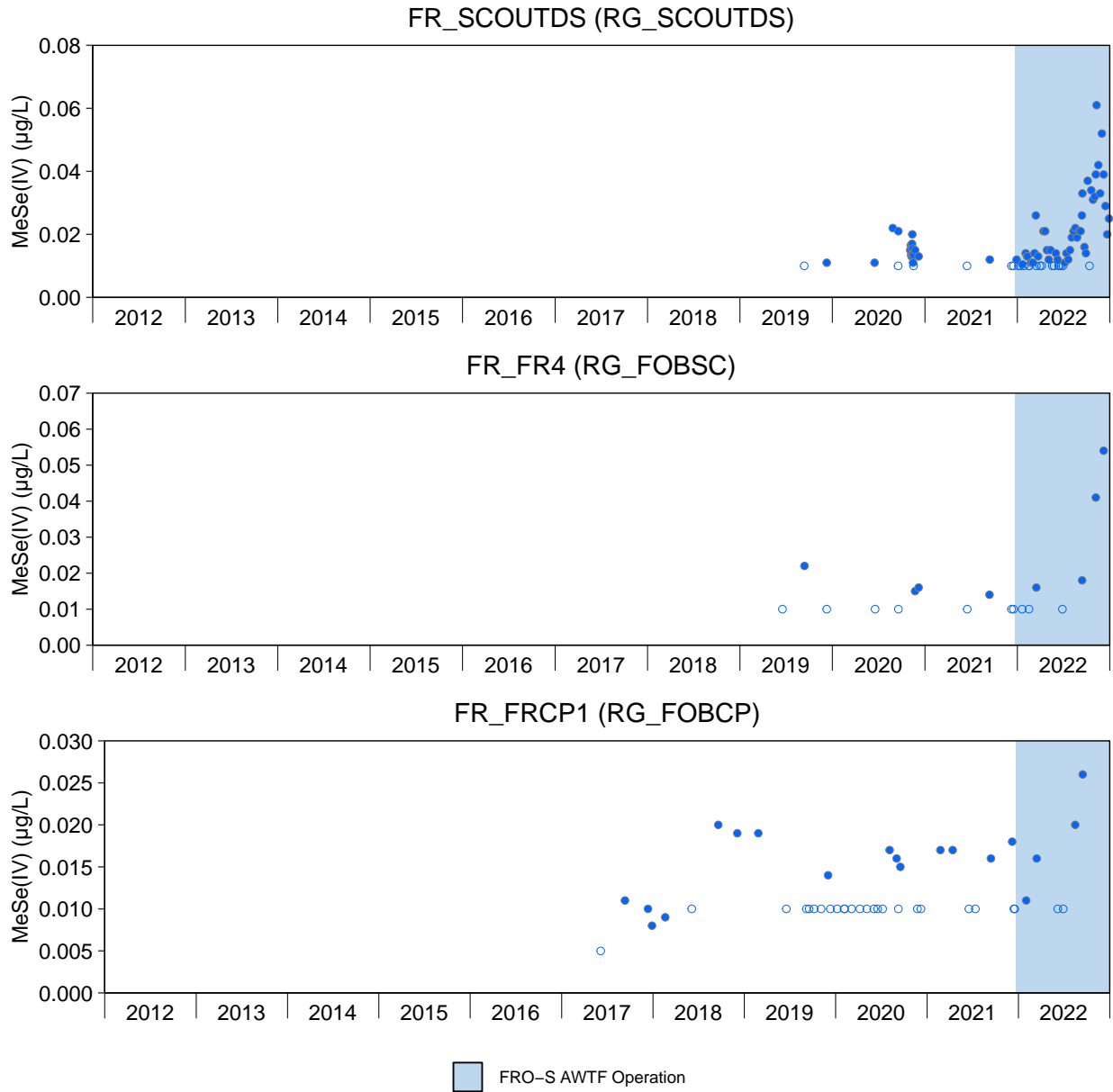


Figure D.26: Time Series Plots for Methylseleninic Acid Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

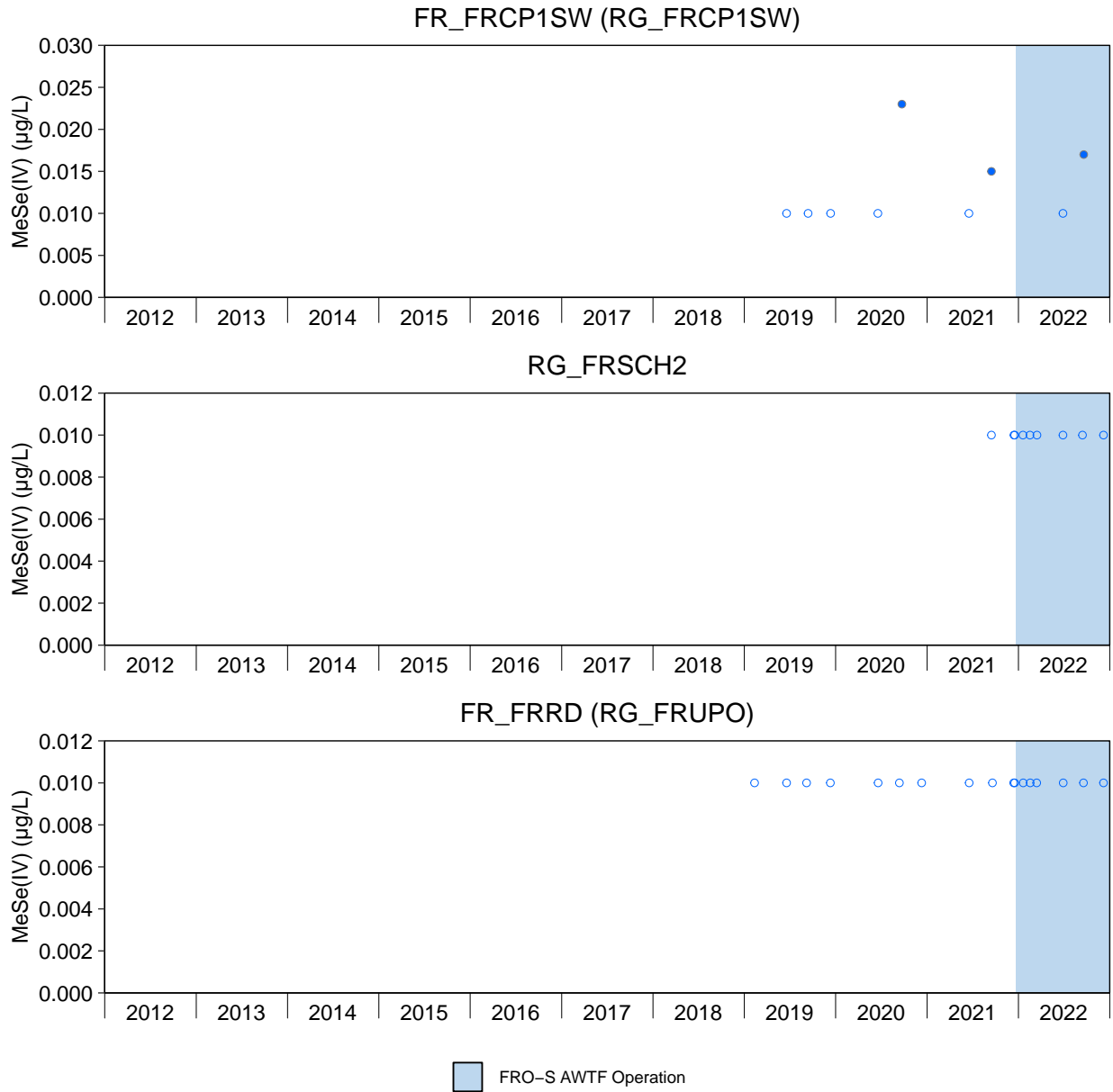


Figure D.26: Time Series Plots for Methylseleninic Acid Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

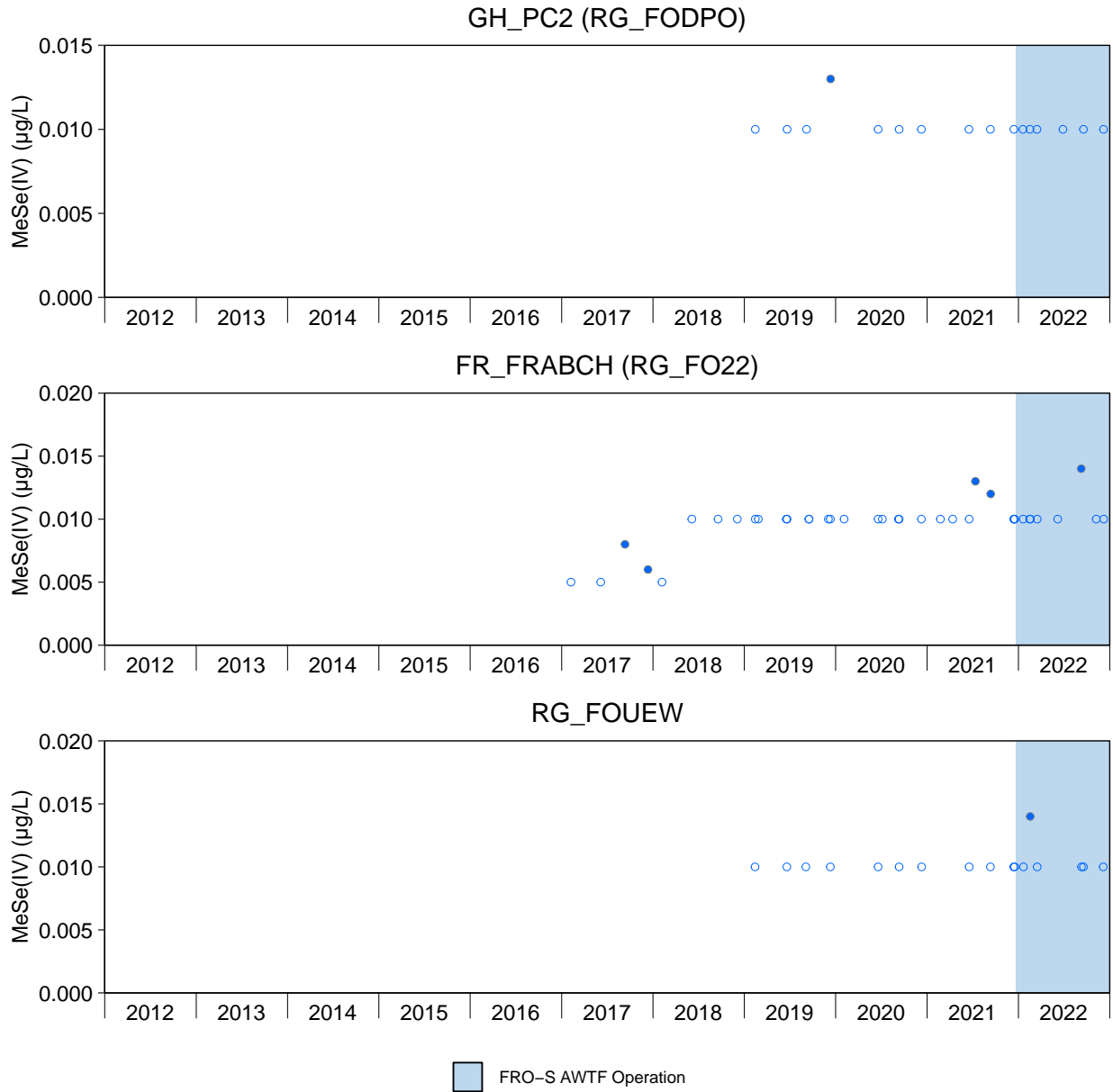


Figure D.26: Time Series Plots for Methylseleninic Acid Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

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

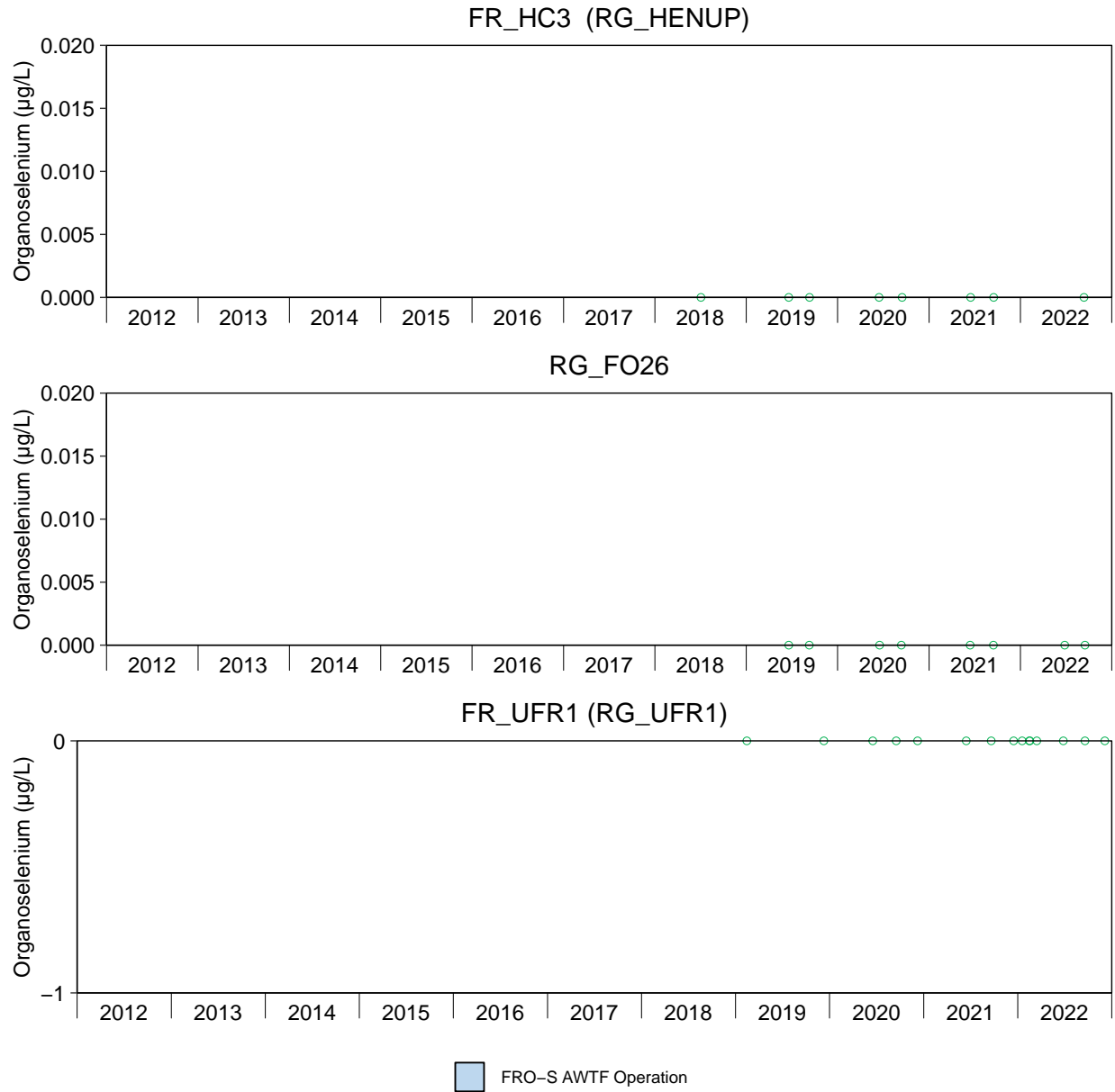


Figure D.27: Time Series Plots for Organoselenium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Organoselenium is the sum of DMSeO and MeSeIV with values at the LRL substituted with 0 in the sum. Summed values including a LRL value were plotted with an open symbol. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

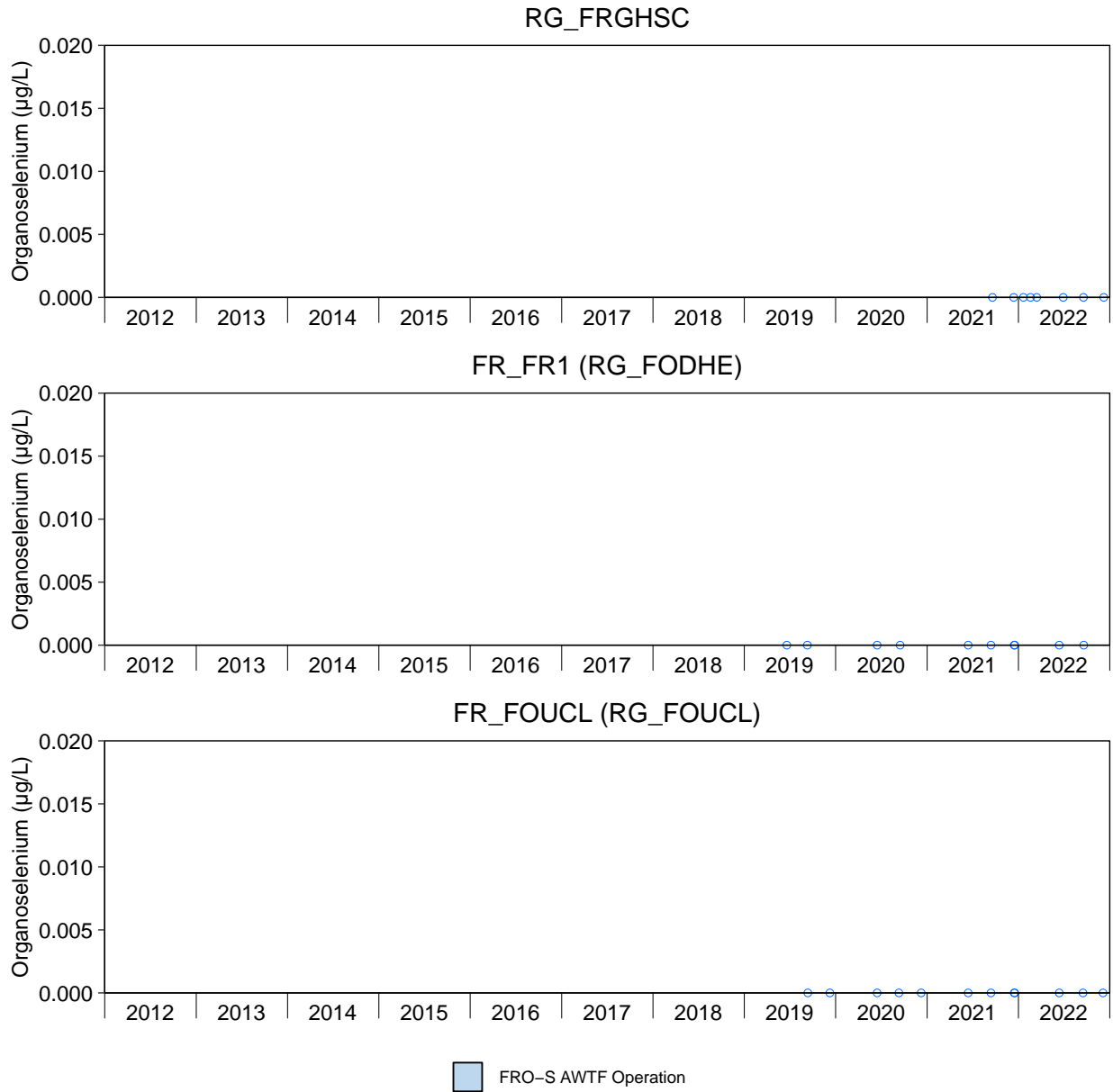


Figure D.27: Time Series Plots for Organoselenium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Organoselenium is the sum of DMSeO and MeSeIV with values at the LRL substituted with 0 in the sum. Summed values including a LRL value were plotted with an open symbol. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

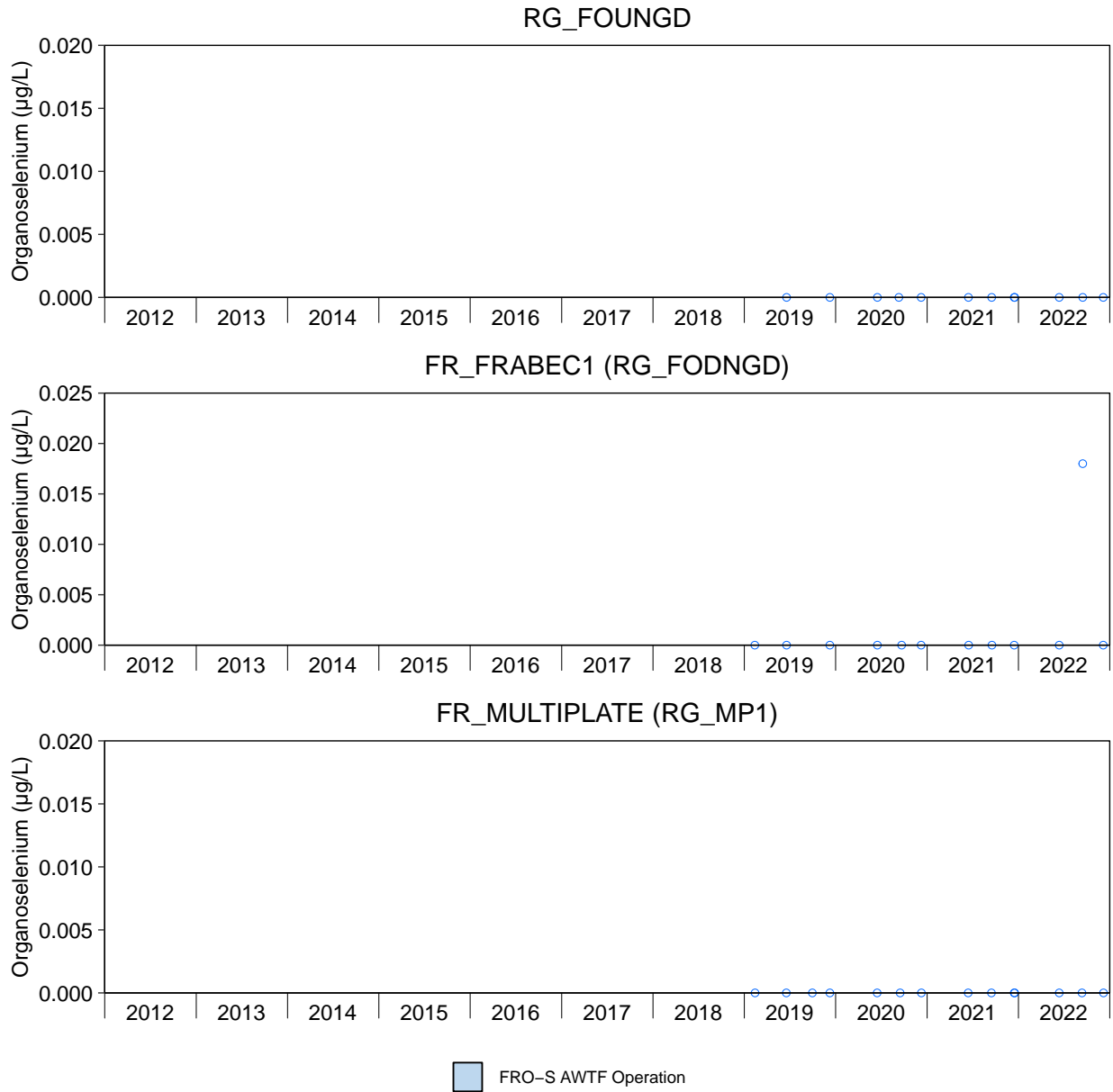


Figure D.27: Time Series Plots for Organoselenium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Organoselenium is the sum of DMSeO and MeSeIV with values at the LRL substituted with 0 in the sum. Summed values including a LRL value were plotted with an open symbol. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

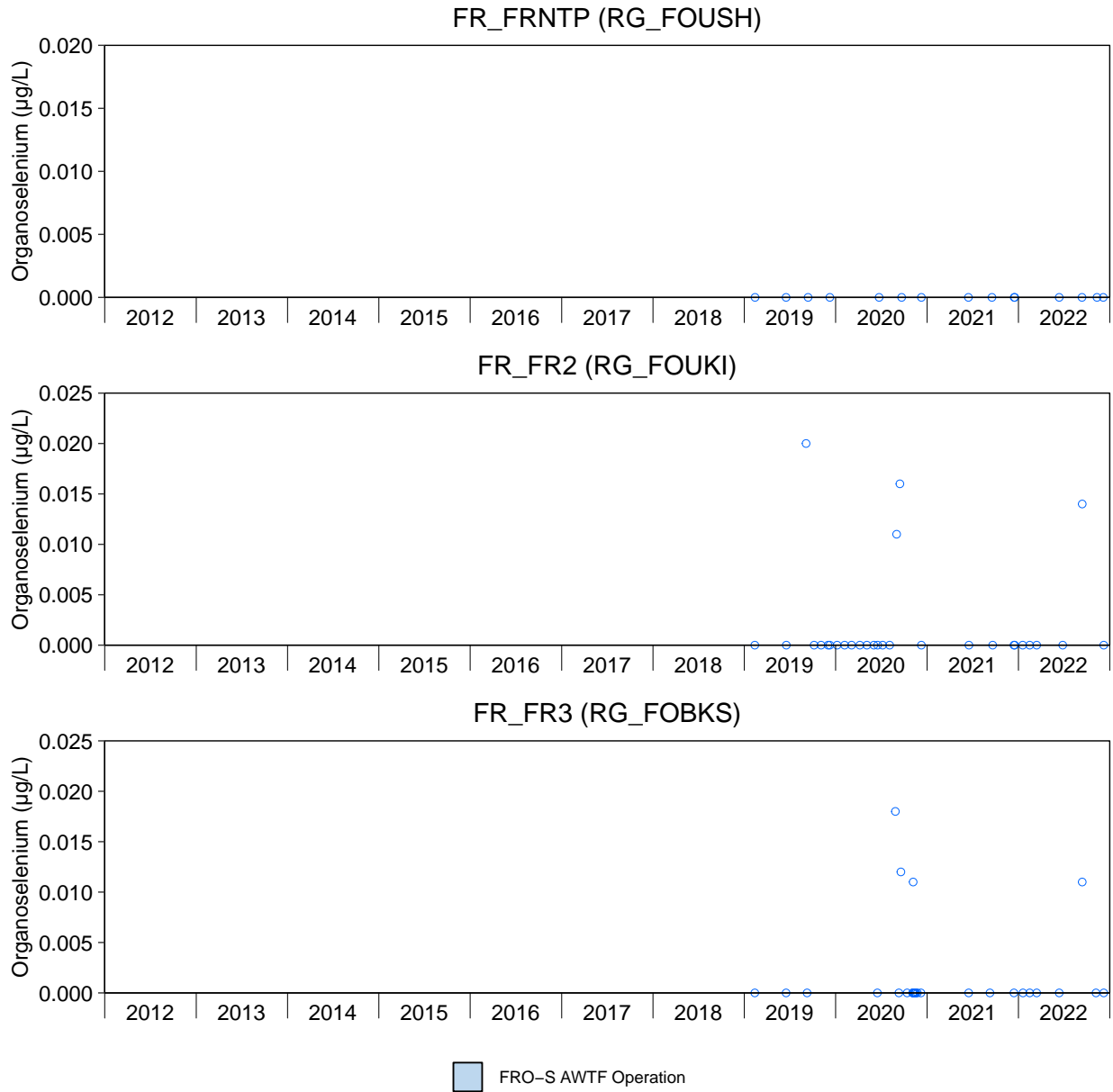


Figure D.27: Time Series Plots for Organoselenium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Organoselenium is the sum of DMSeO and MeSeIV with values at the LRL substituted with 0 in the sum. Summed values including a LRL value were plotted with an open symbol. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

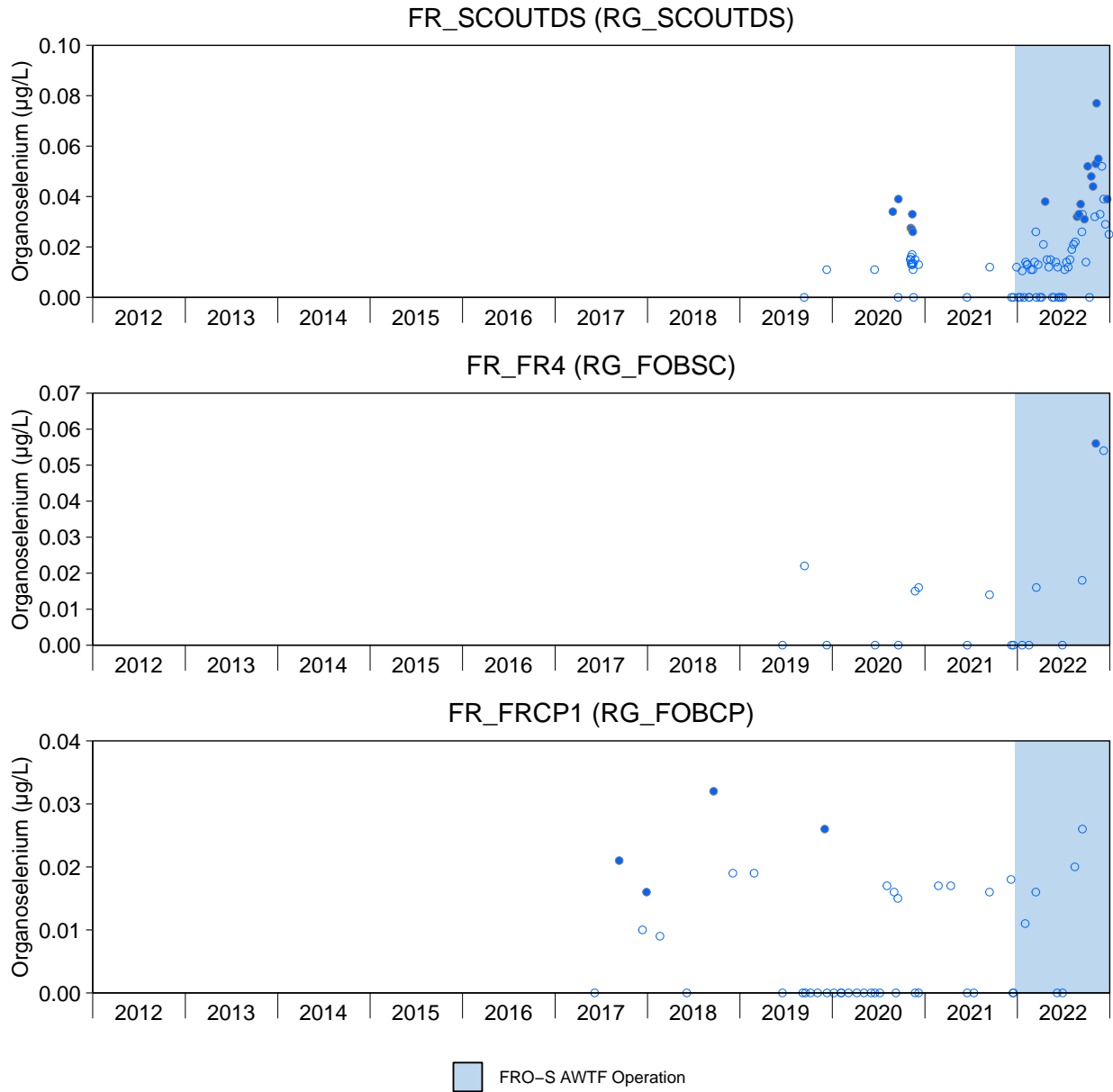


Figure D.27: Time Series Plots for Organoselenium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Organoselenium is the sum of DMSeO and MeSeIV with values at the LRL substituted with 0 in the sum. Summed values including a LRL value were plotted with an open symbol. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

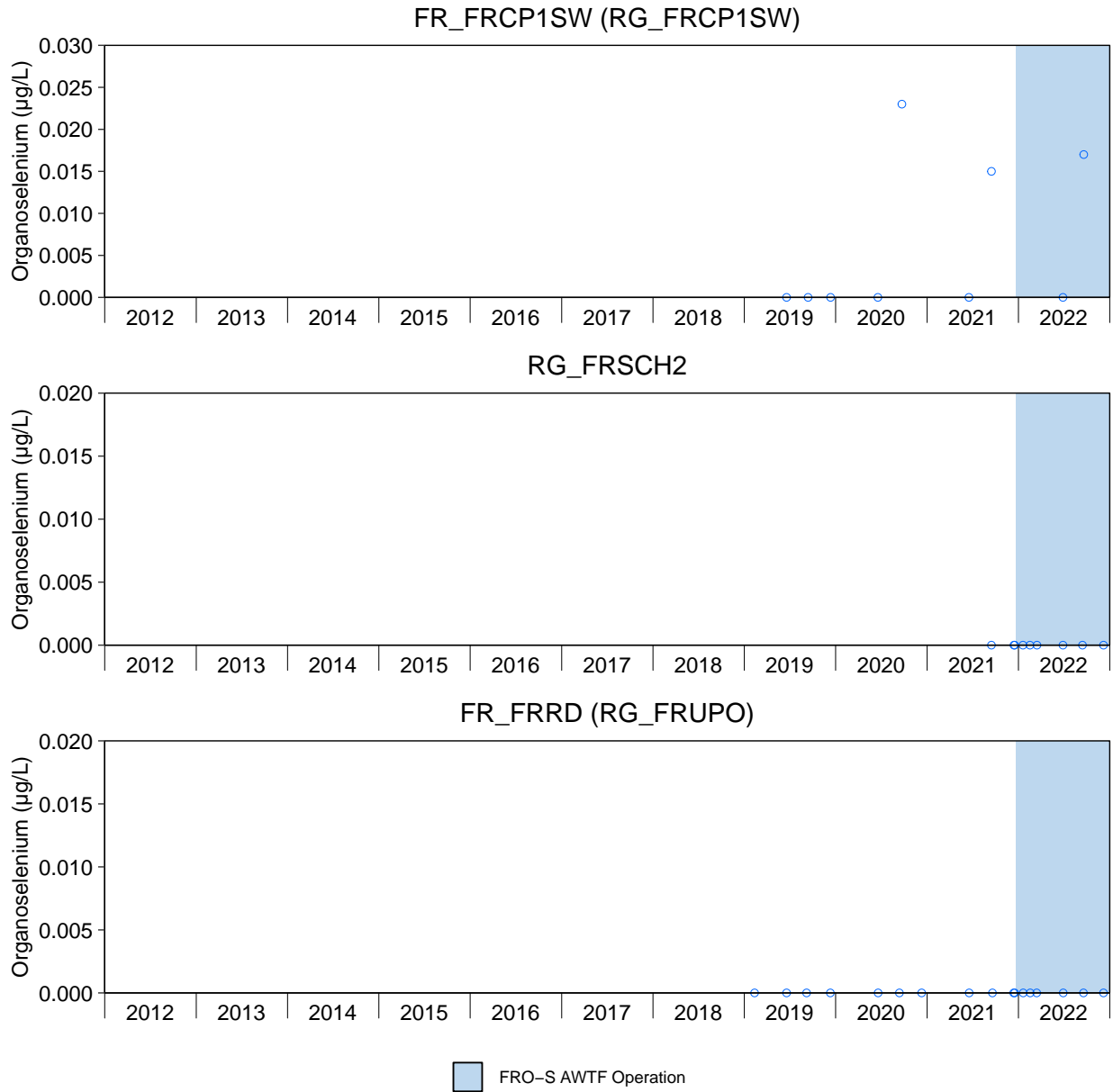


Figure D.27: Time Series Plots for Organoselenium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Organoselenium is the sum of DMSeO and MeSeIV with values at the LRL substituted with 0 in the sum. Summed values including a LRL value were plotted with an open symbol. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

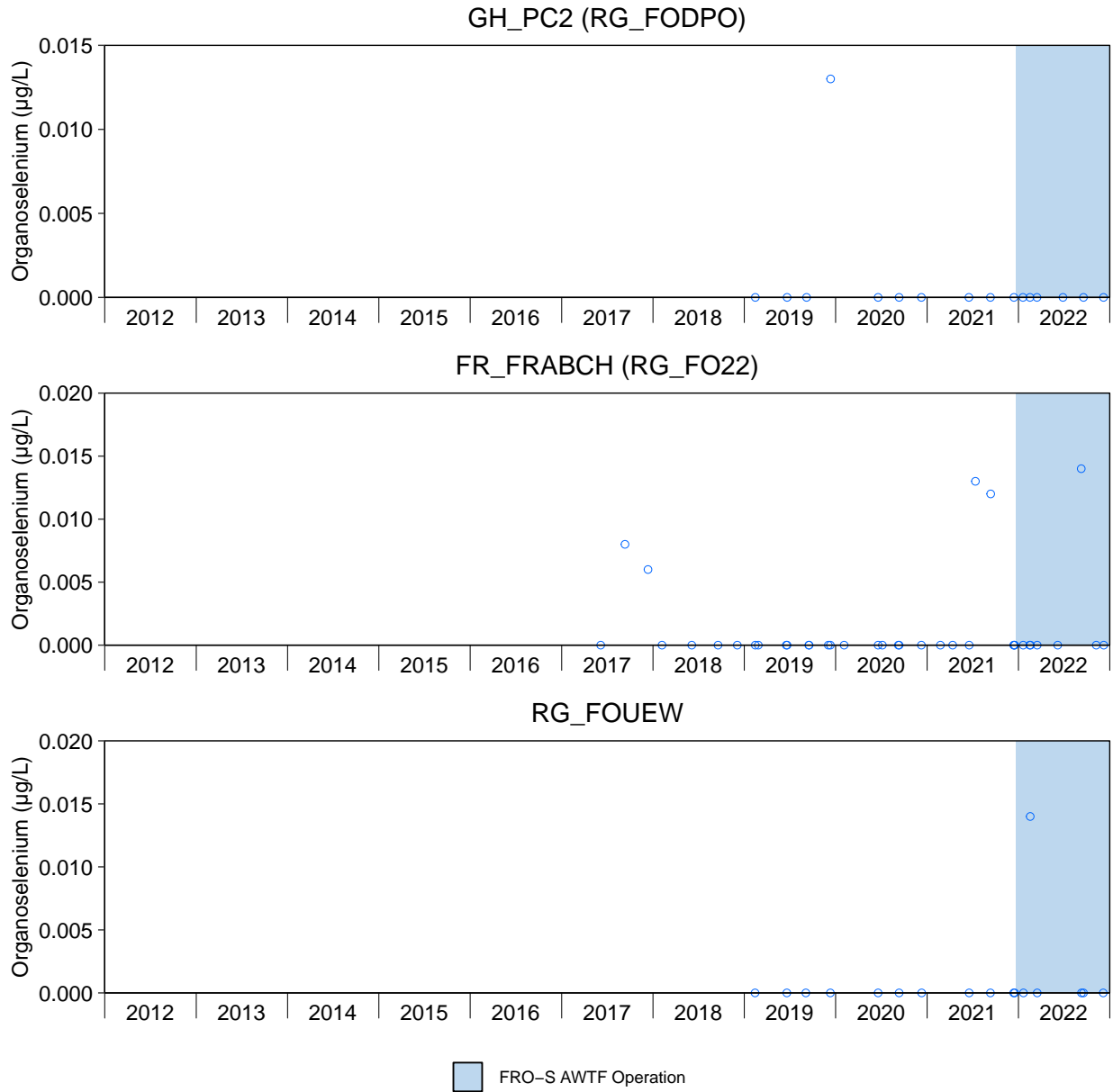


Figure D.27: Time Series Plots for Organoselenium Concentrations from FRO LAEMP Sampling Areas, 2012 to 2022

Notes: Green data points are used for reference sites and blue data points are used for mine-exposed sites. Organoselenium is the sum of DMSeO and MeSeIV with values at the LRL substituted with 0 in the sum. Summed values including a LRL value were plotted with an open symbol. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and plotted together with the biological monitoring area depicted in parenthesis.

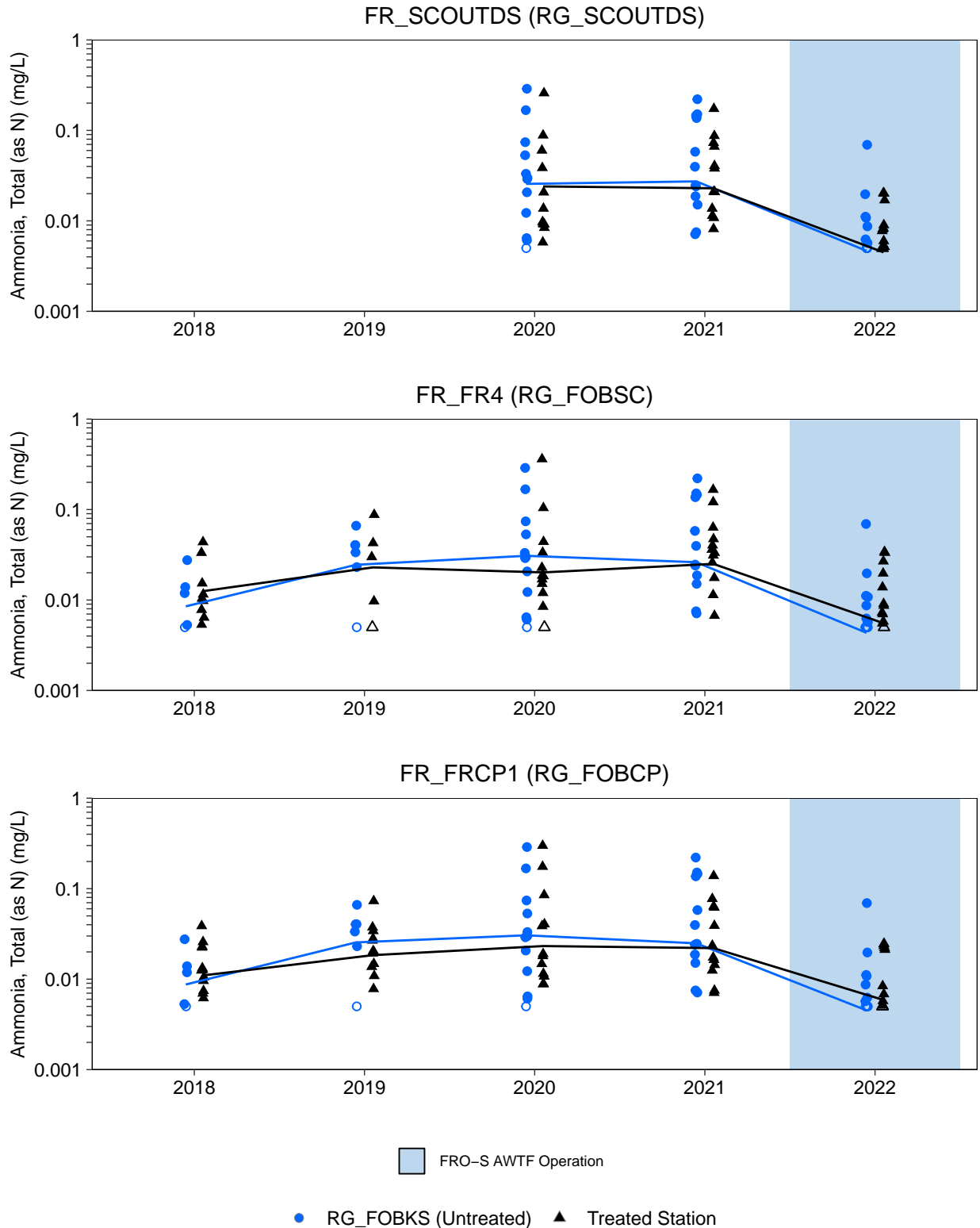


Figure D.28: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

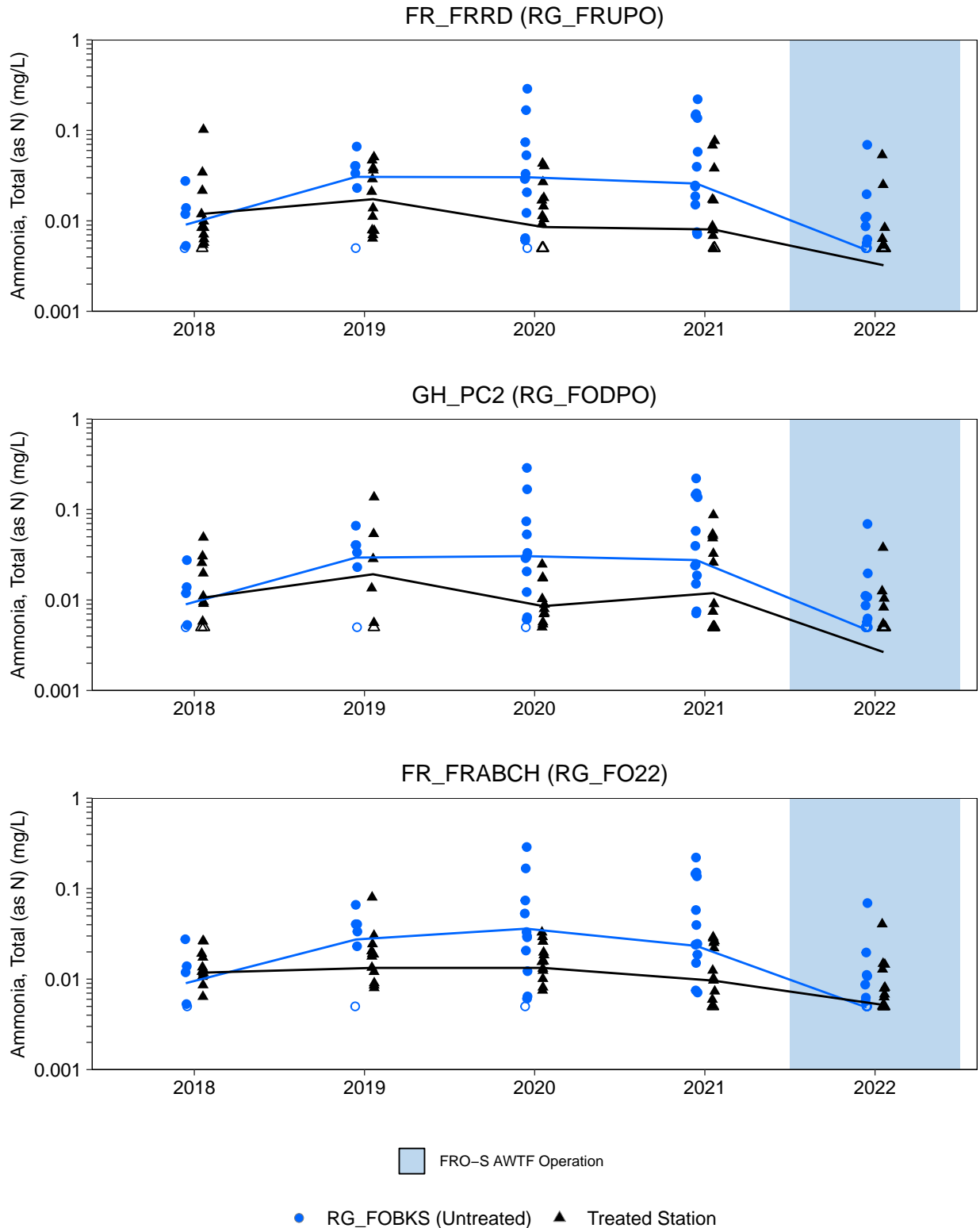


Figure D.28: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUDS was immediately downstream of the outfall.

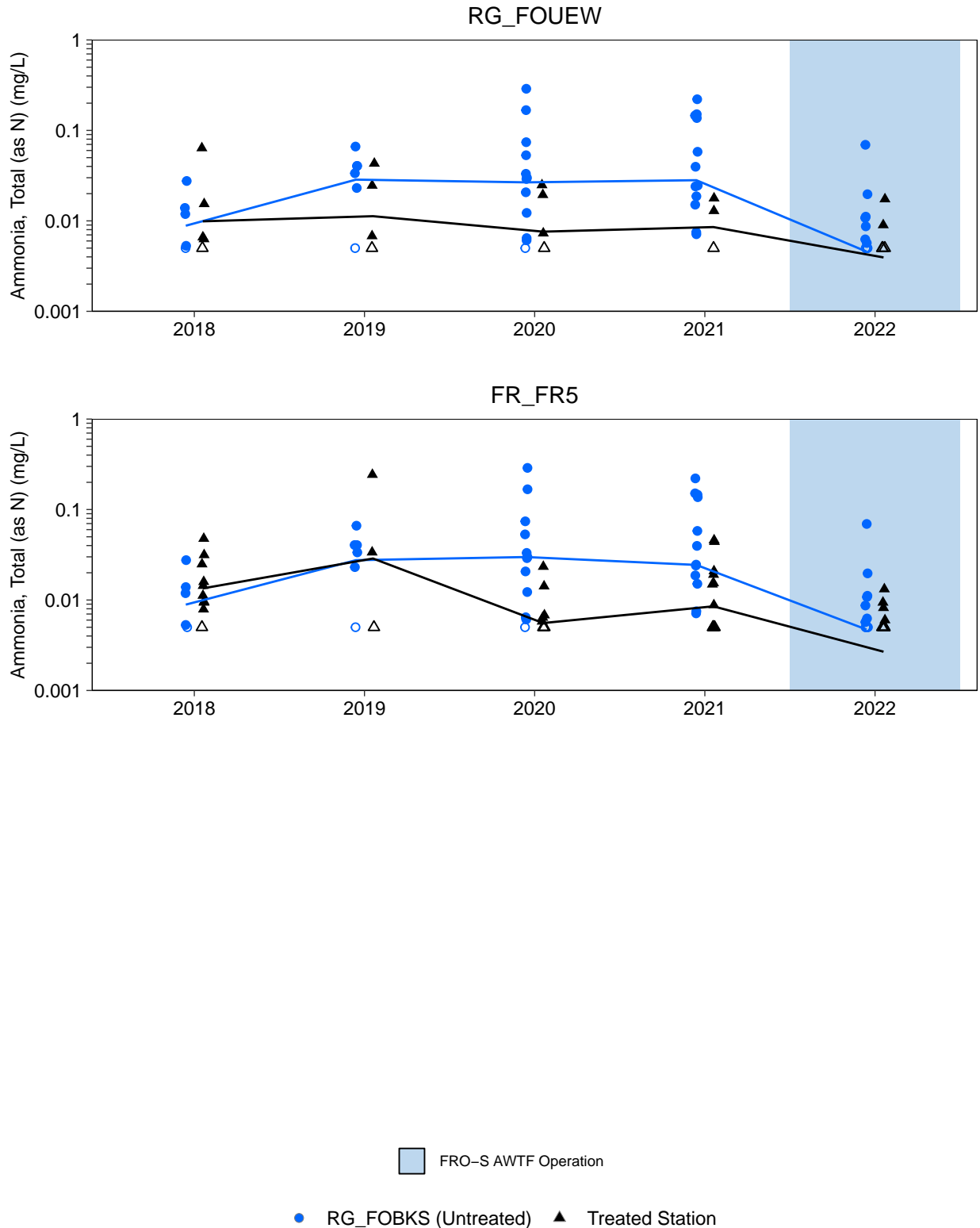


Figure D.28: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

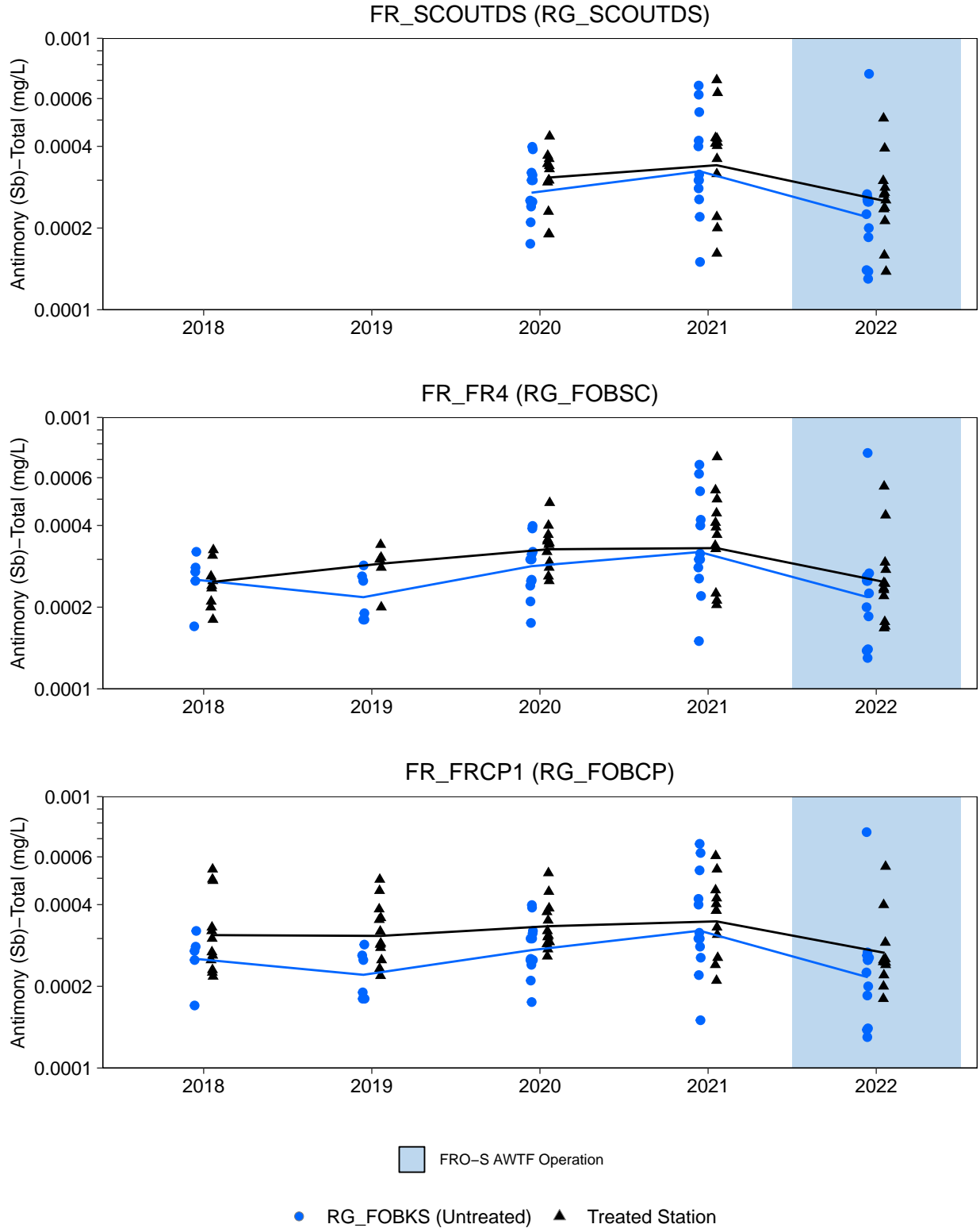


Figure D.29: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

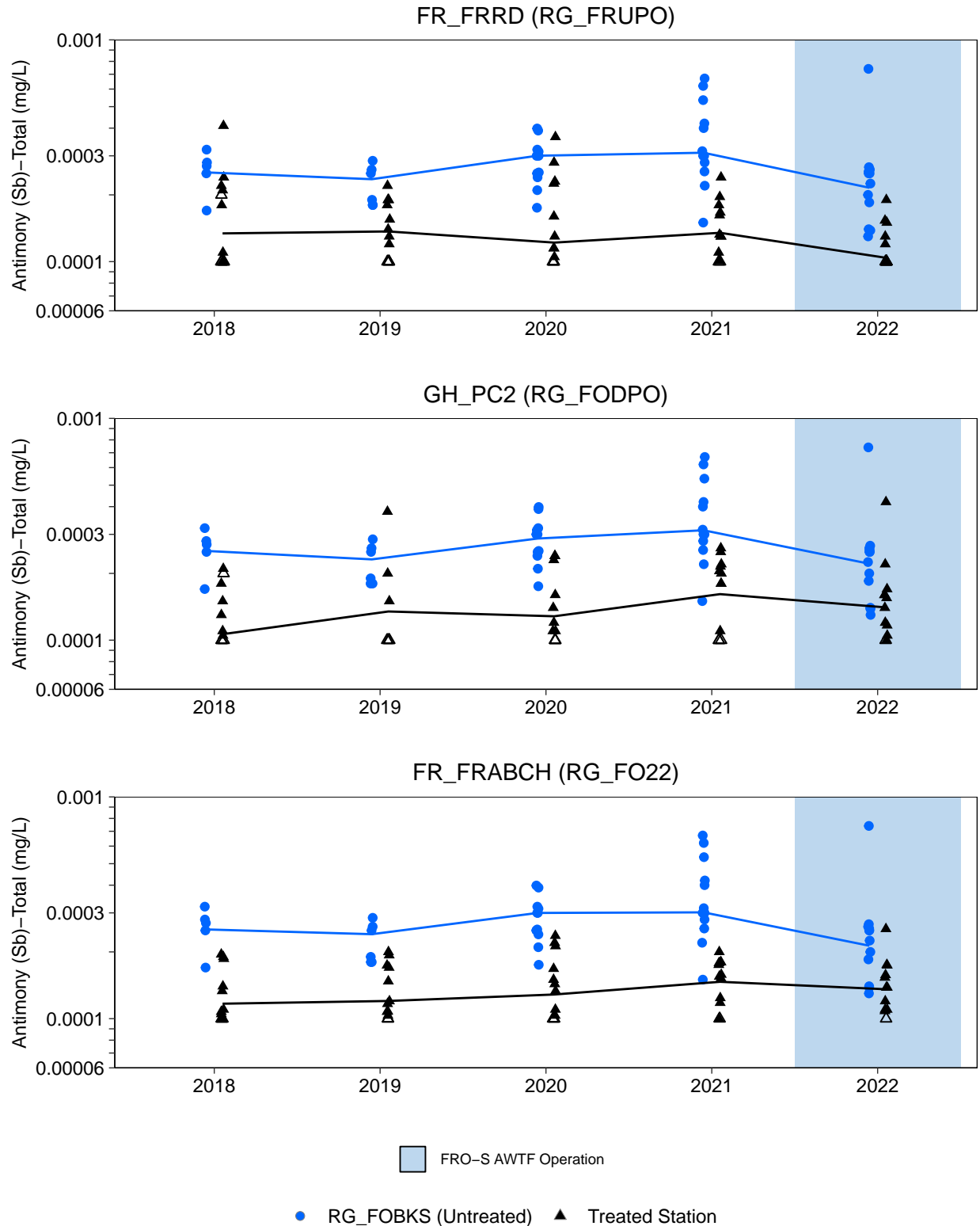


Figure D.29: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

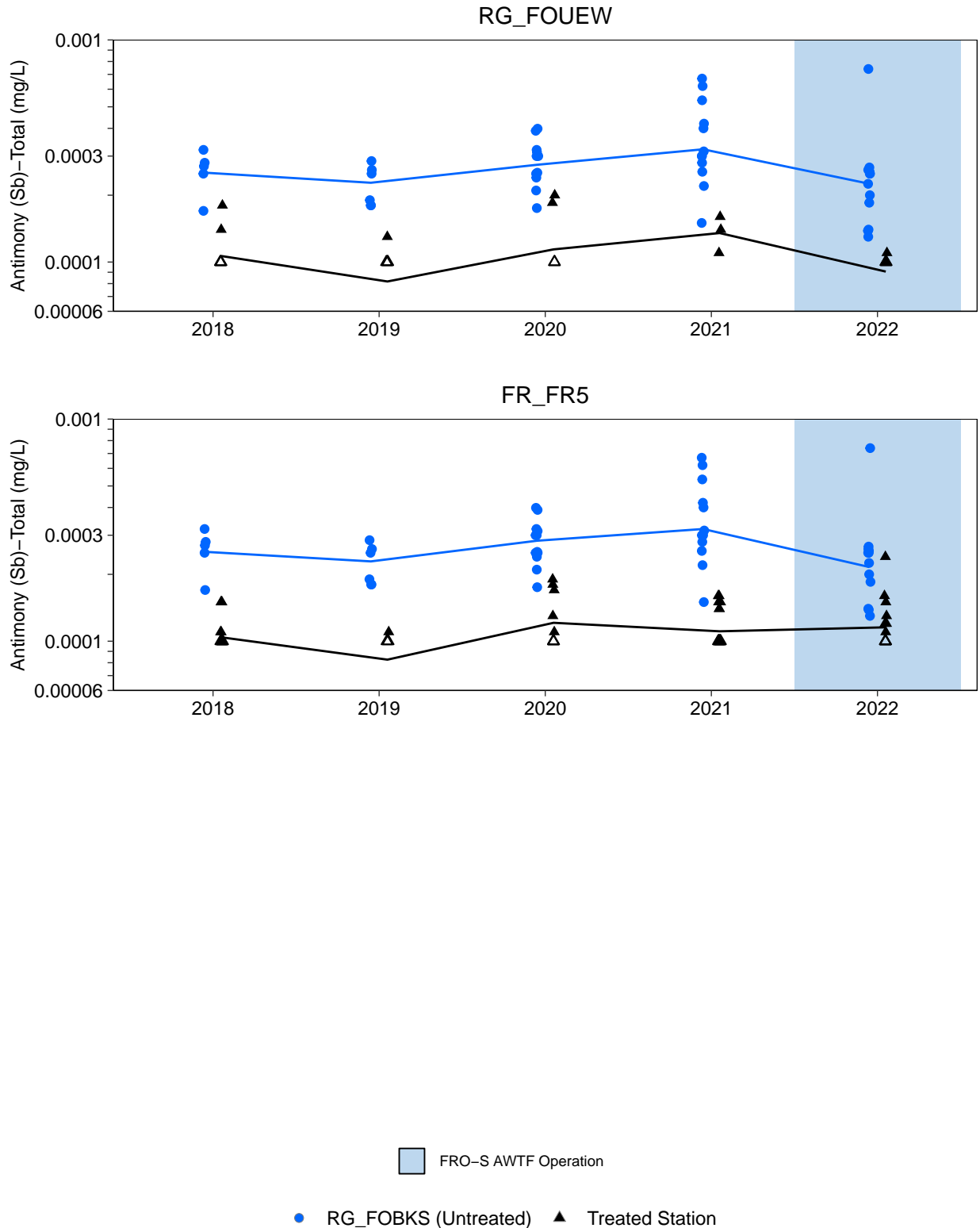


Figure D.29: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

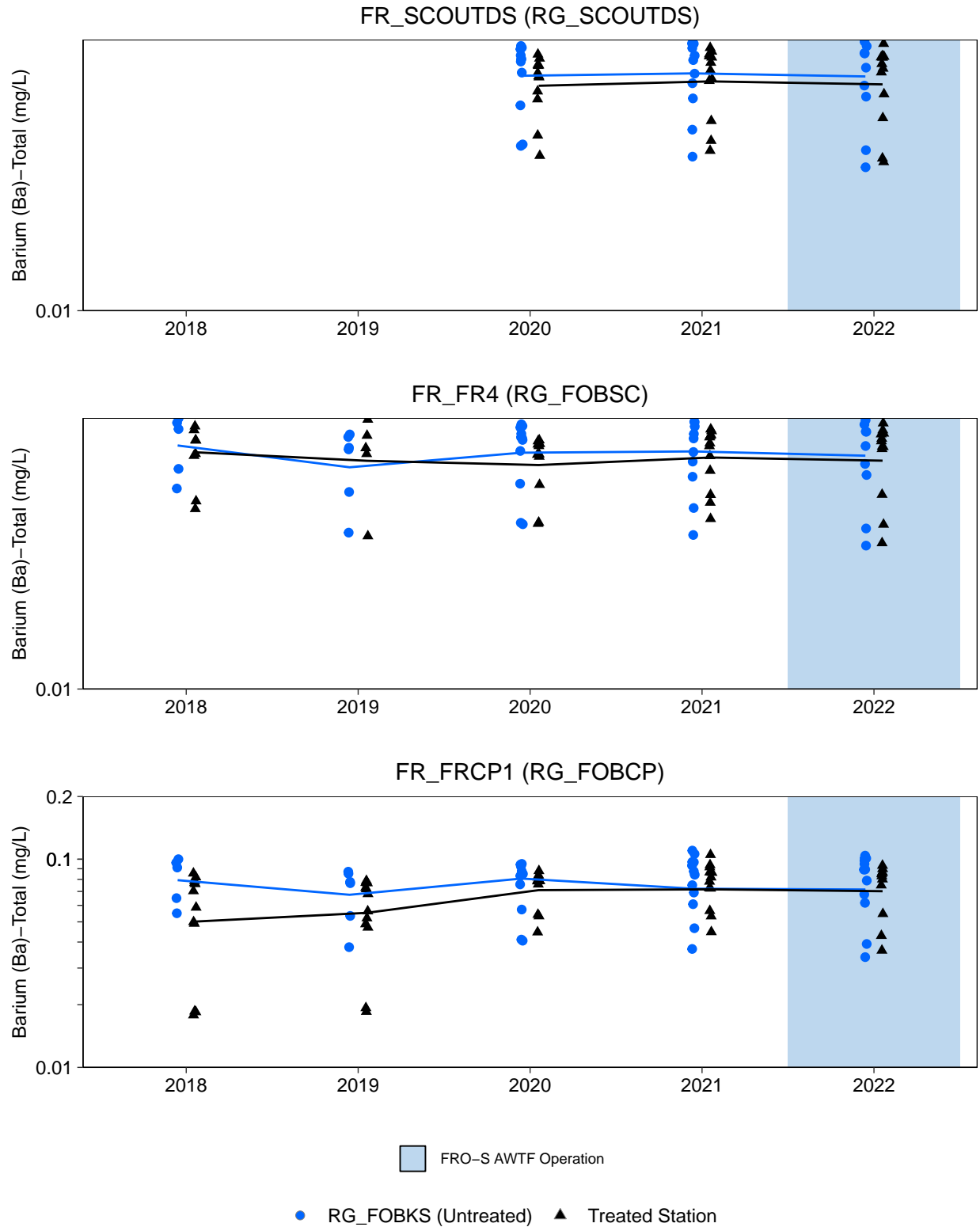


Figure D.30: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

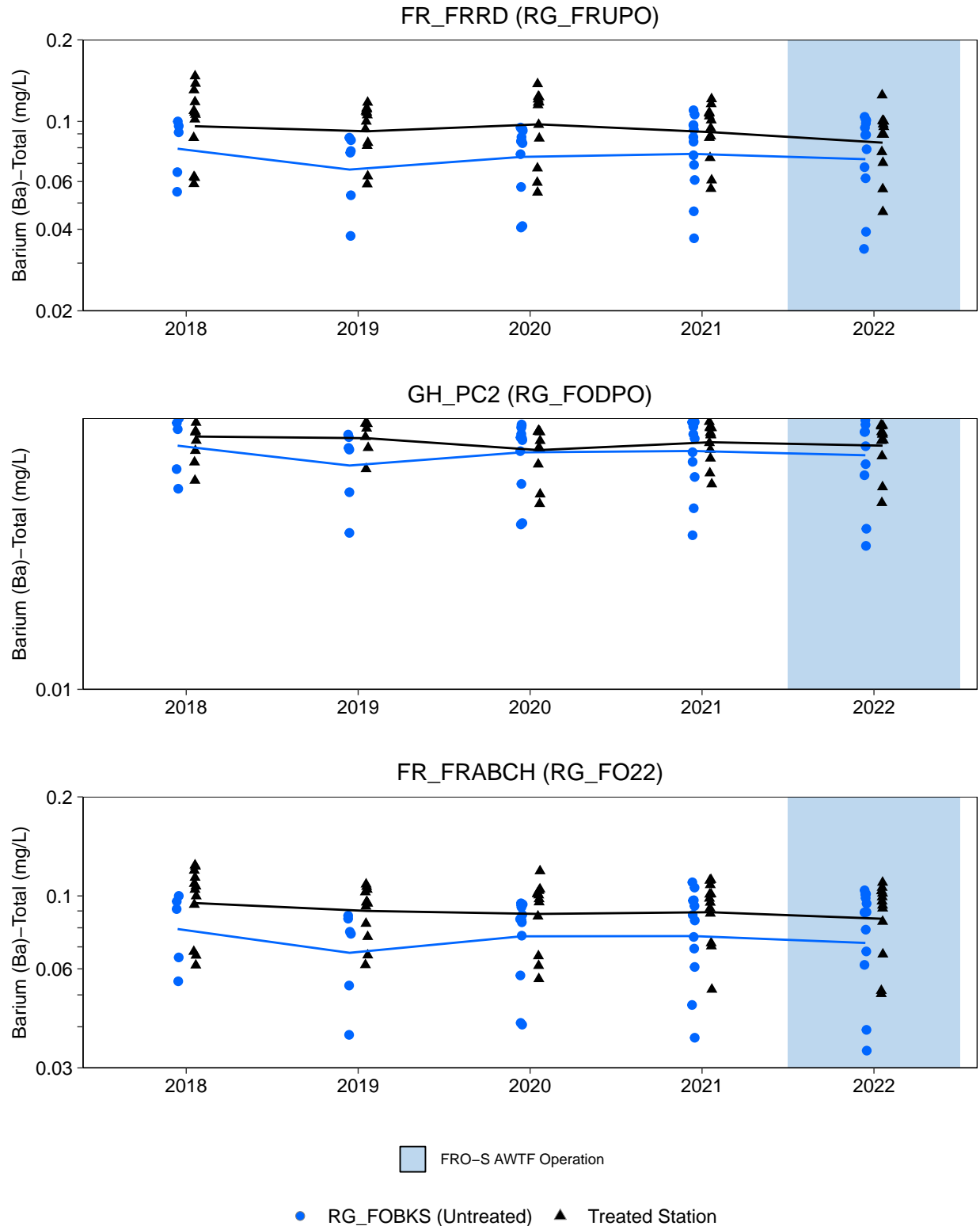


Figure D.30: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

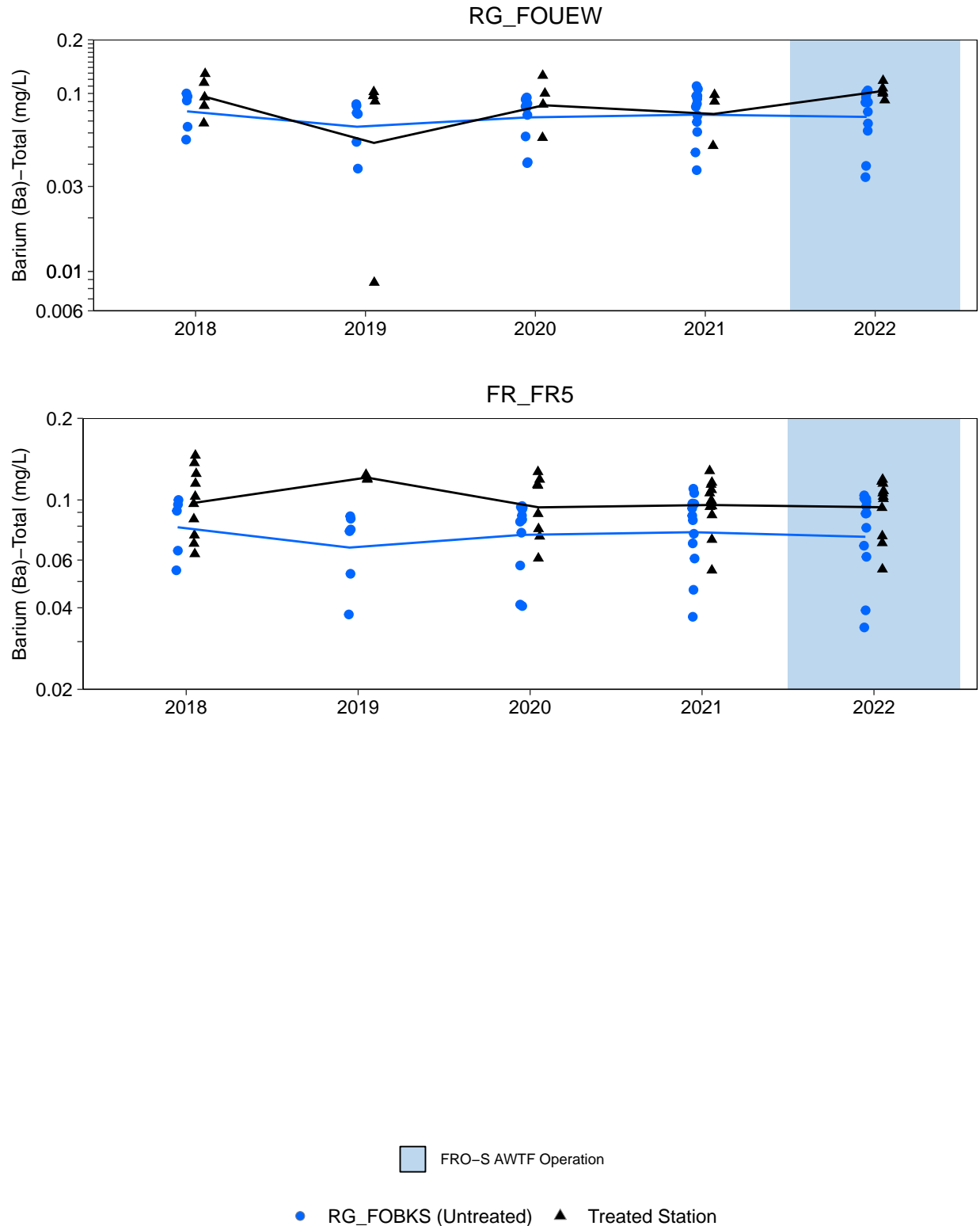


Figure D.30: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

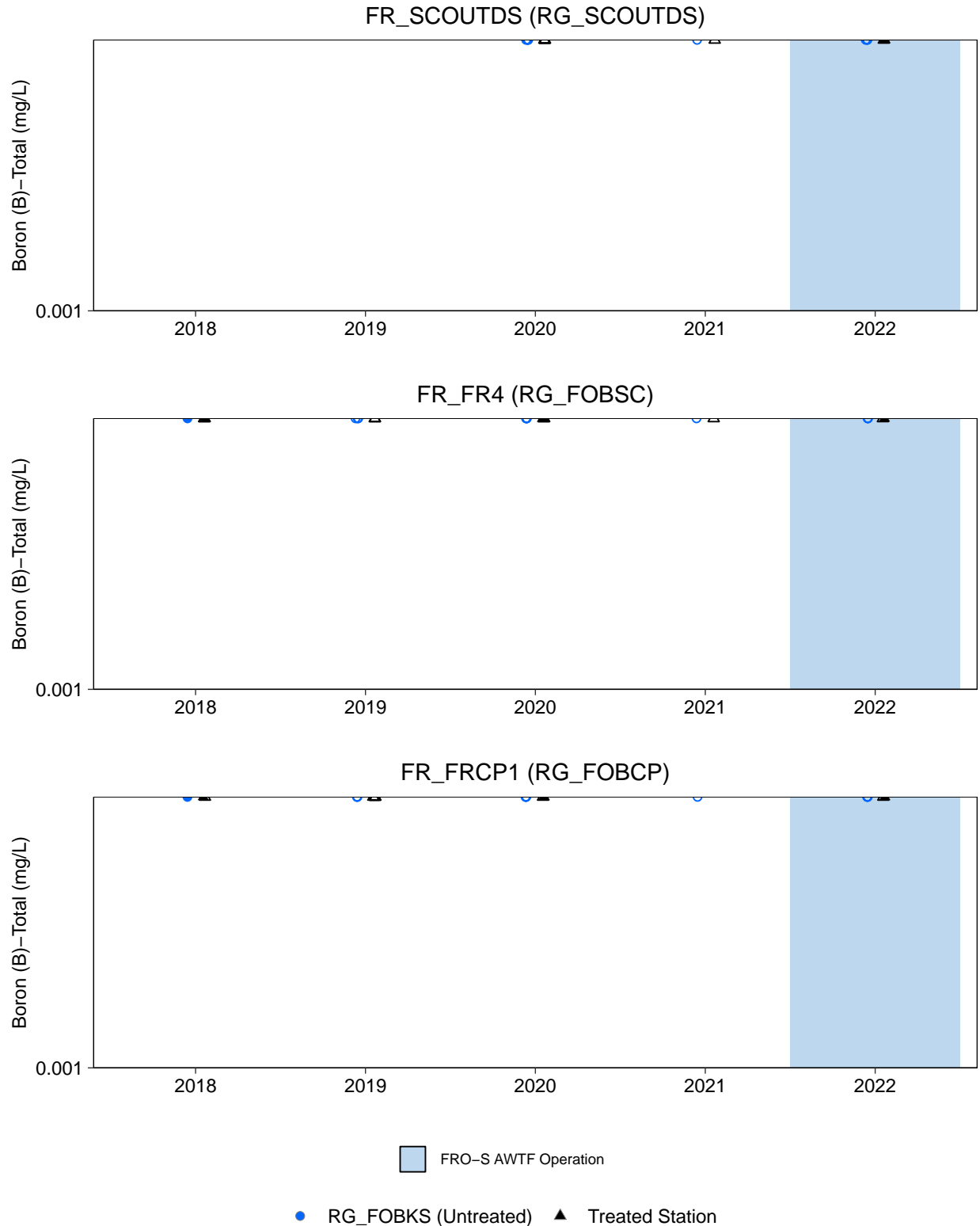


Figure D.31: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

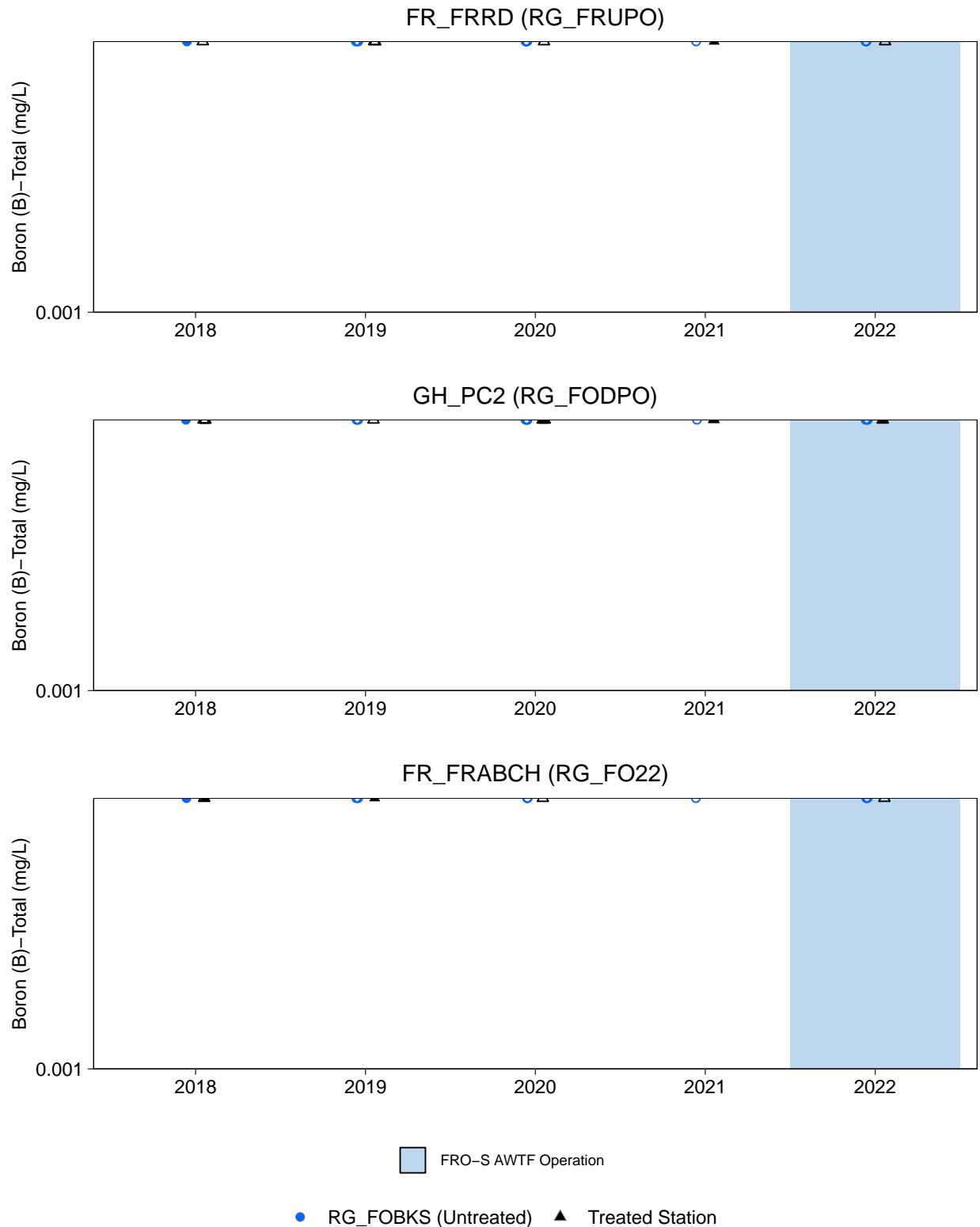


Figure D.31: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

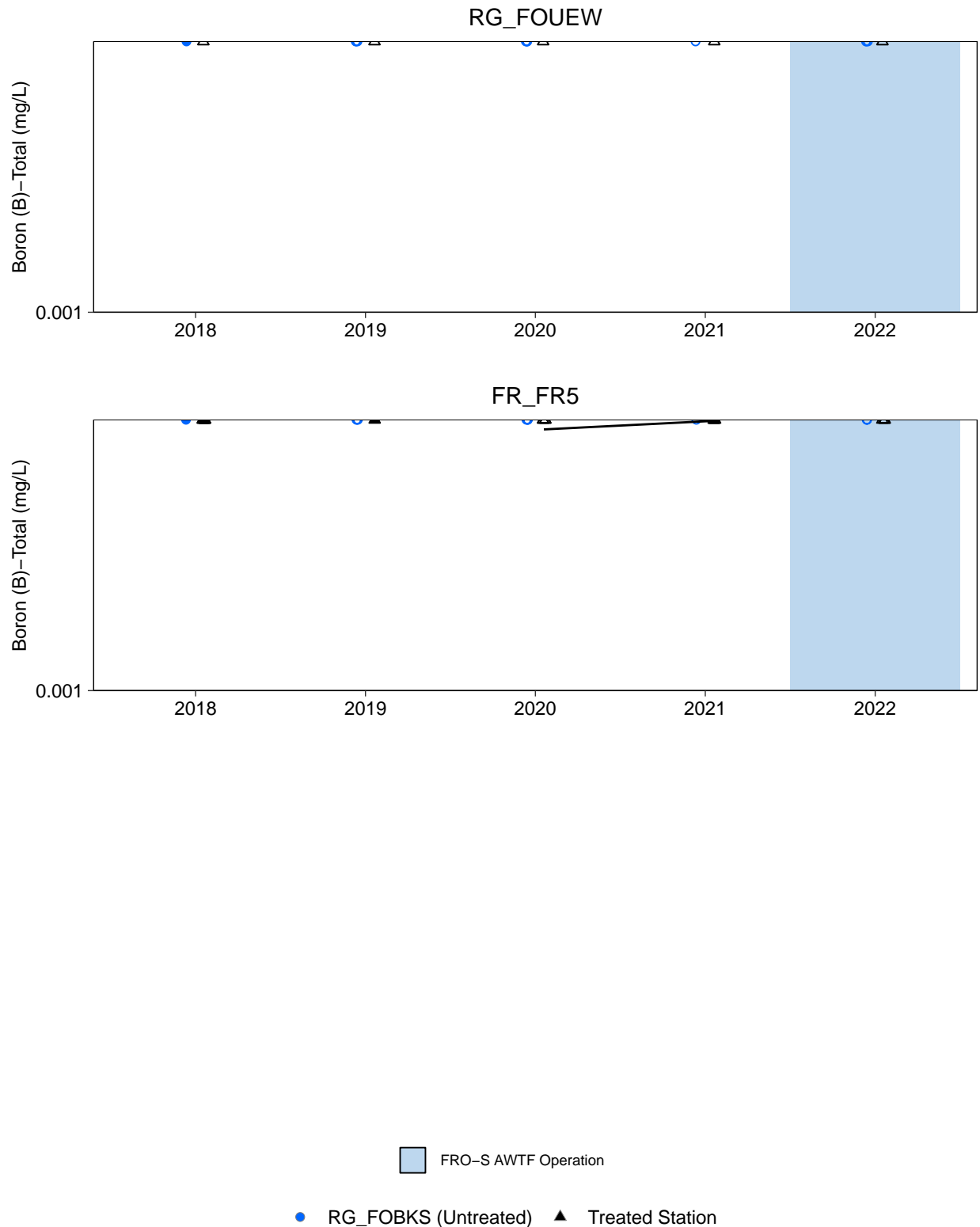


Figure D.31: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

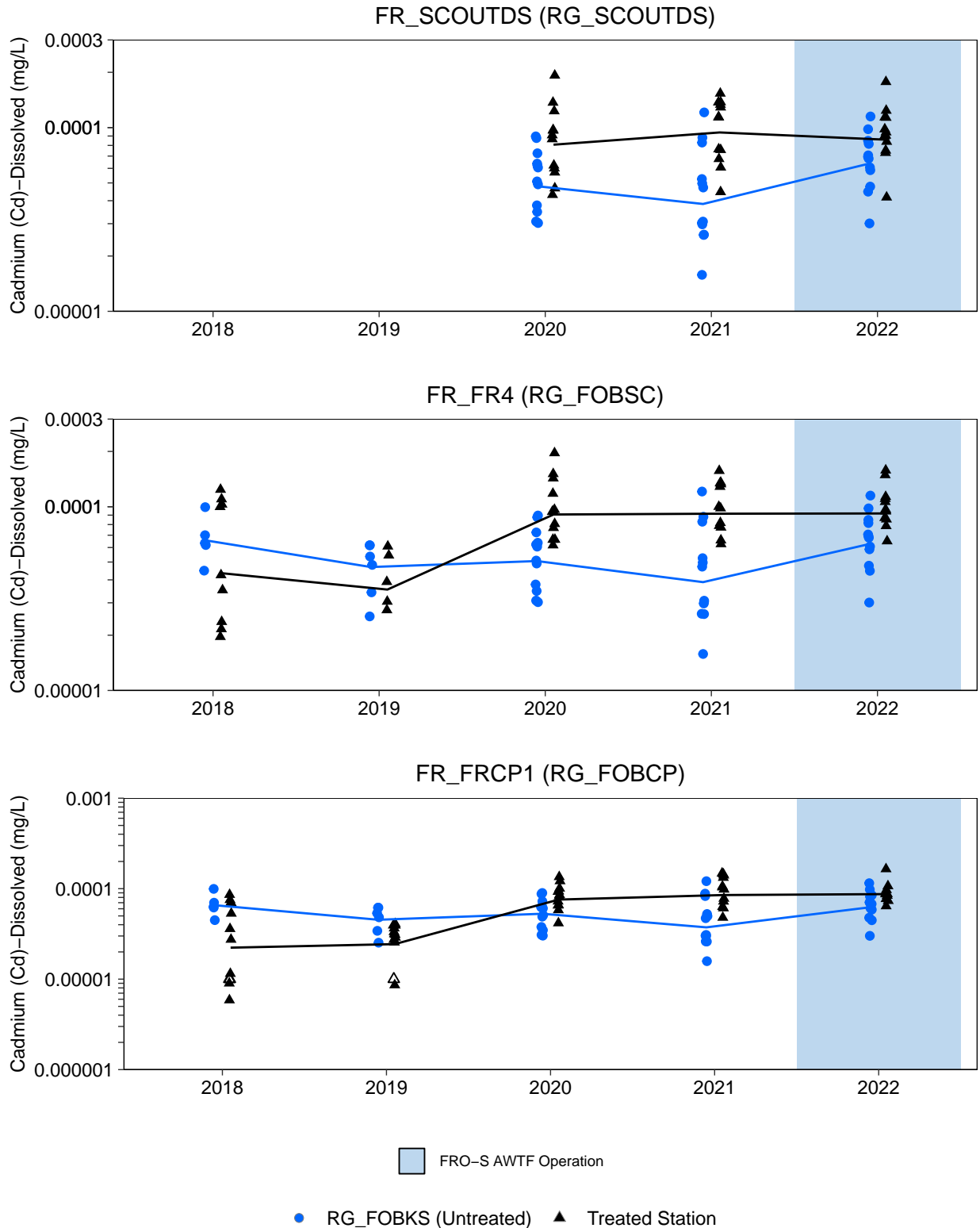


Figure D.32: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

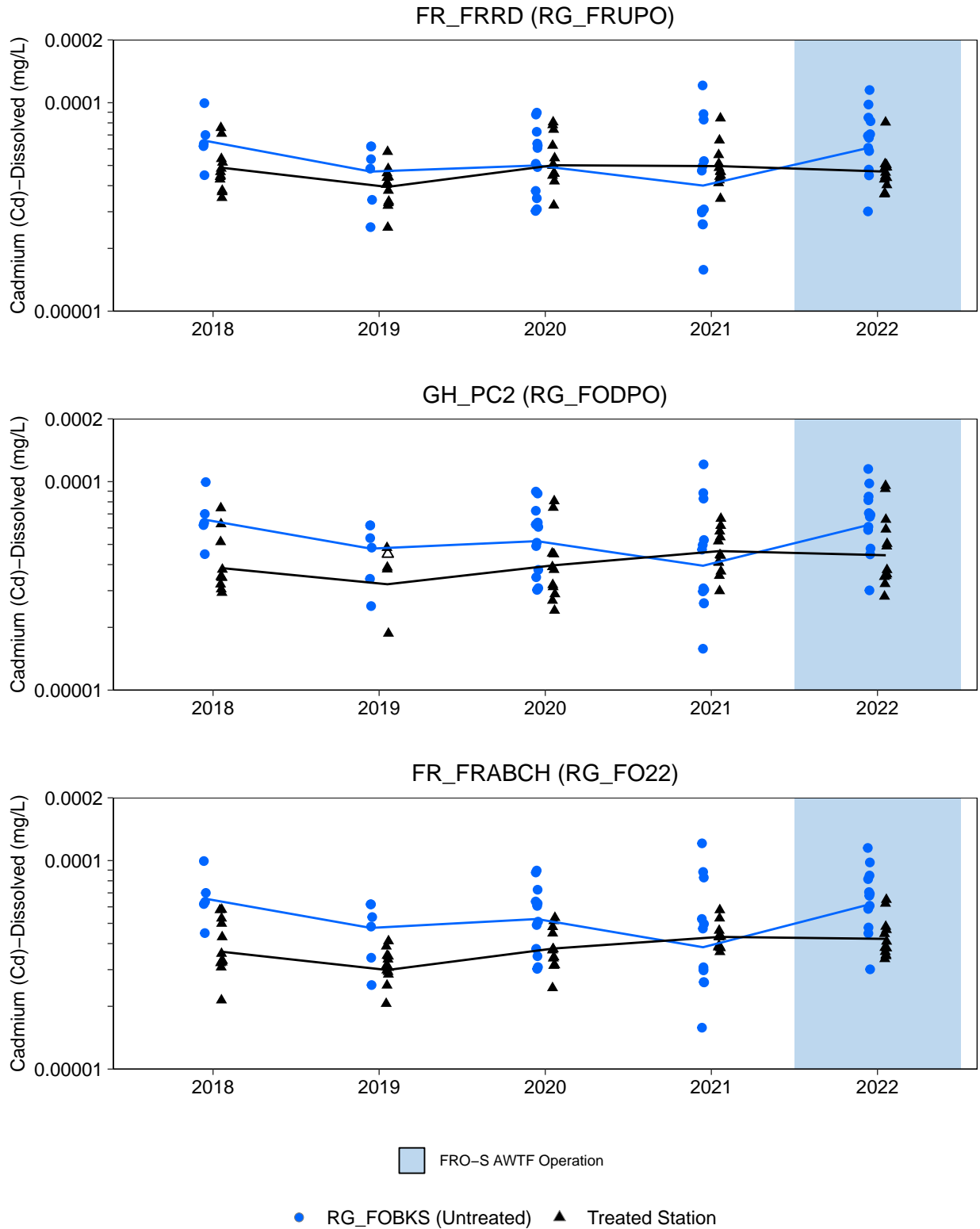


Figure D.32: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

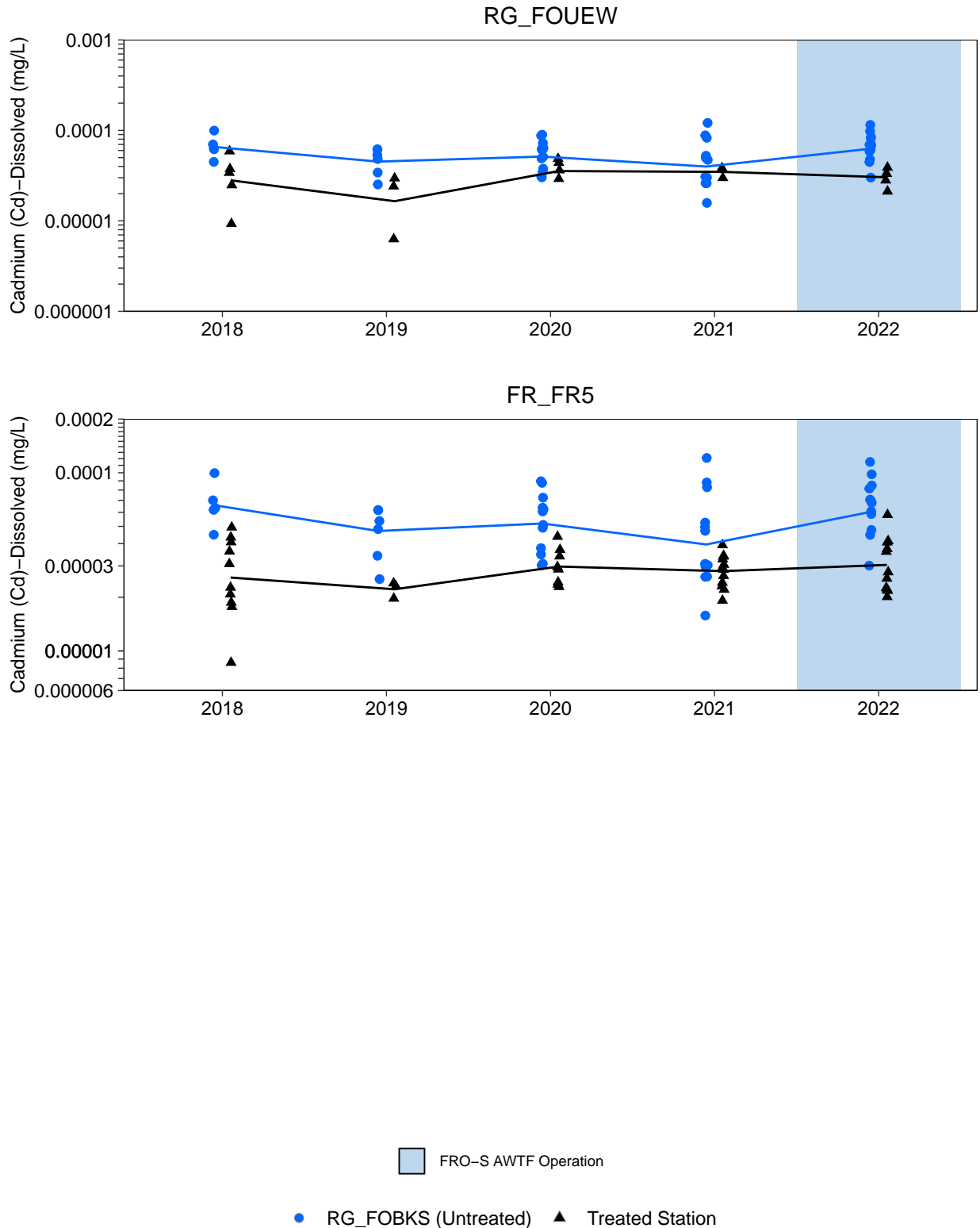


Figure D.32: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

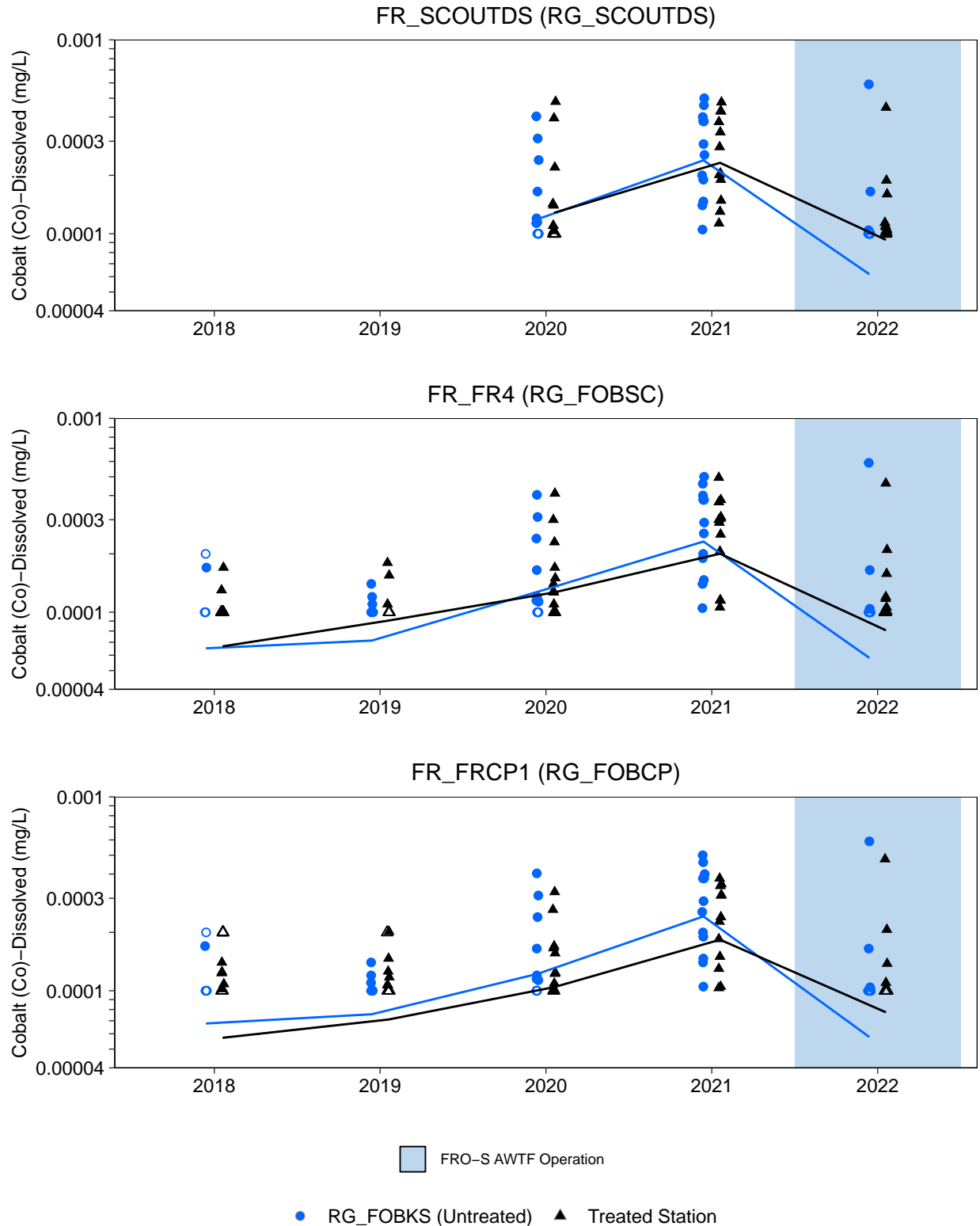


Figure D.33: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

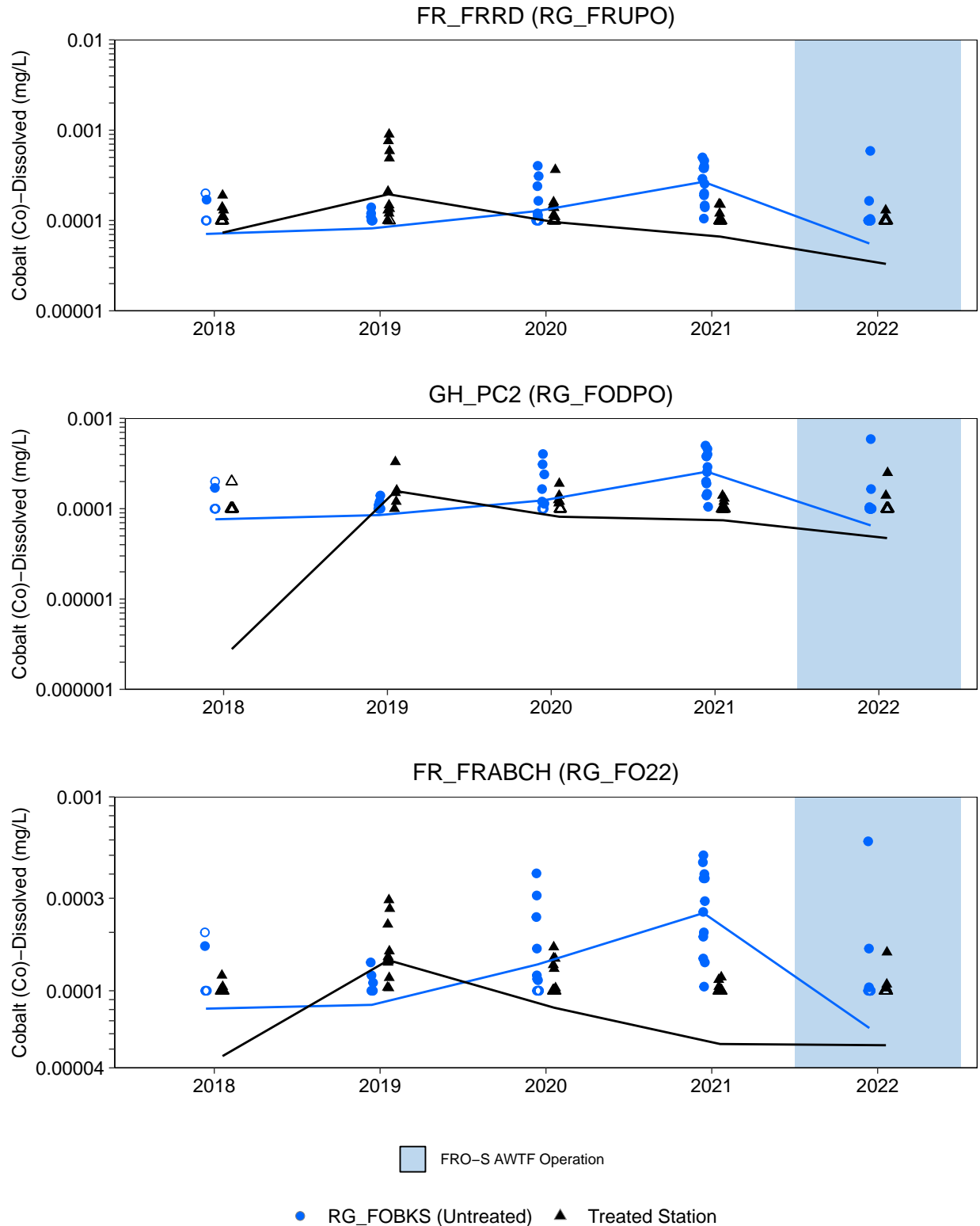


Figure D.33: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

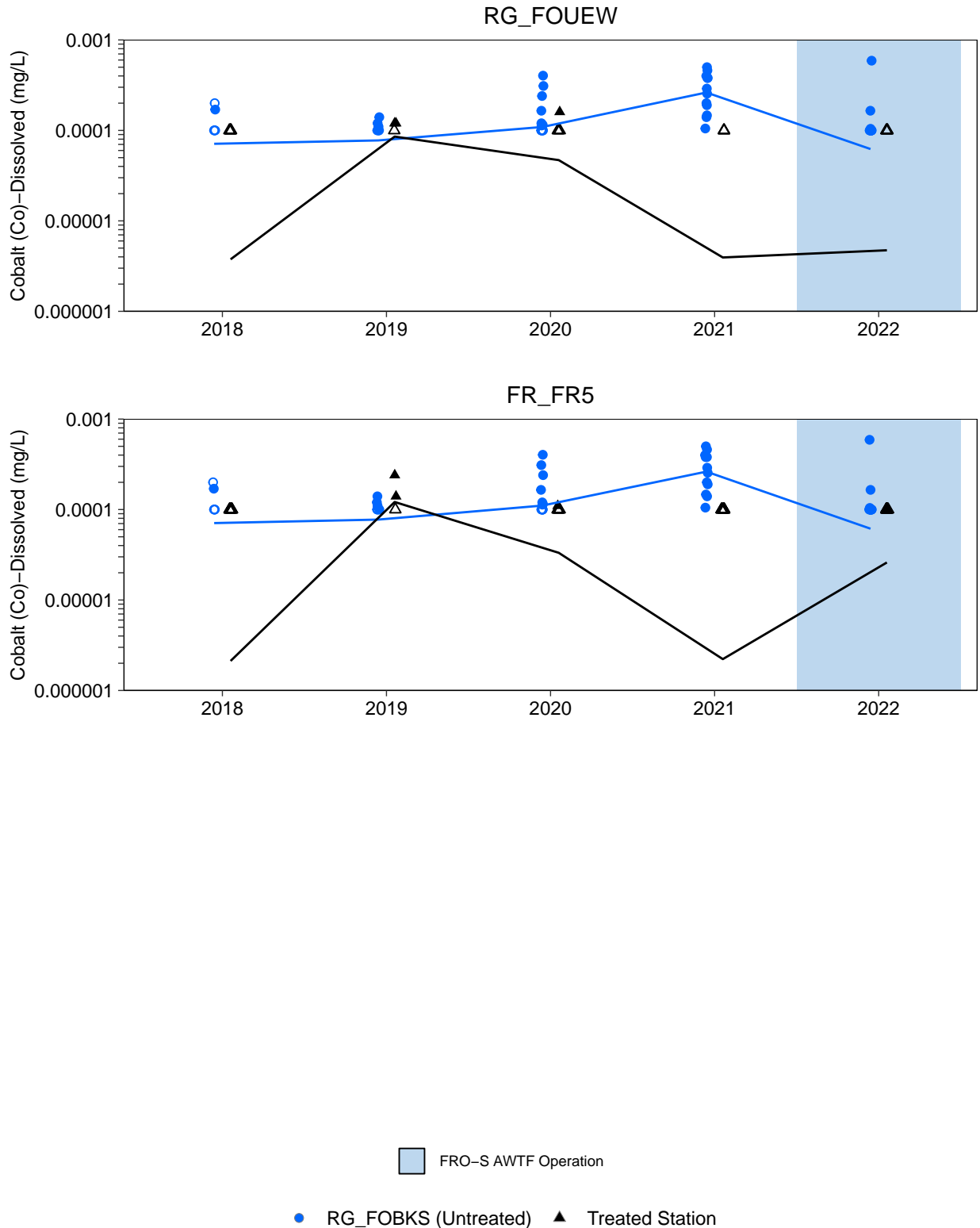


Figure D.33: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

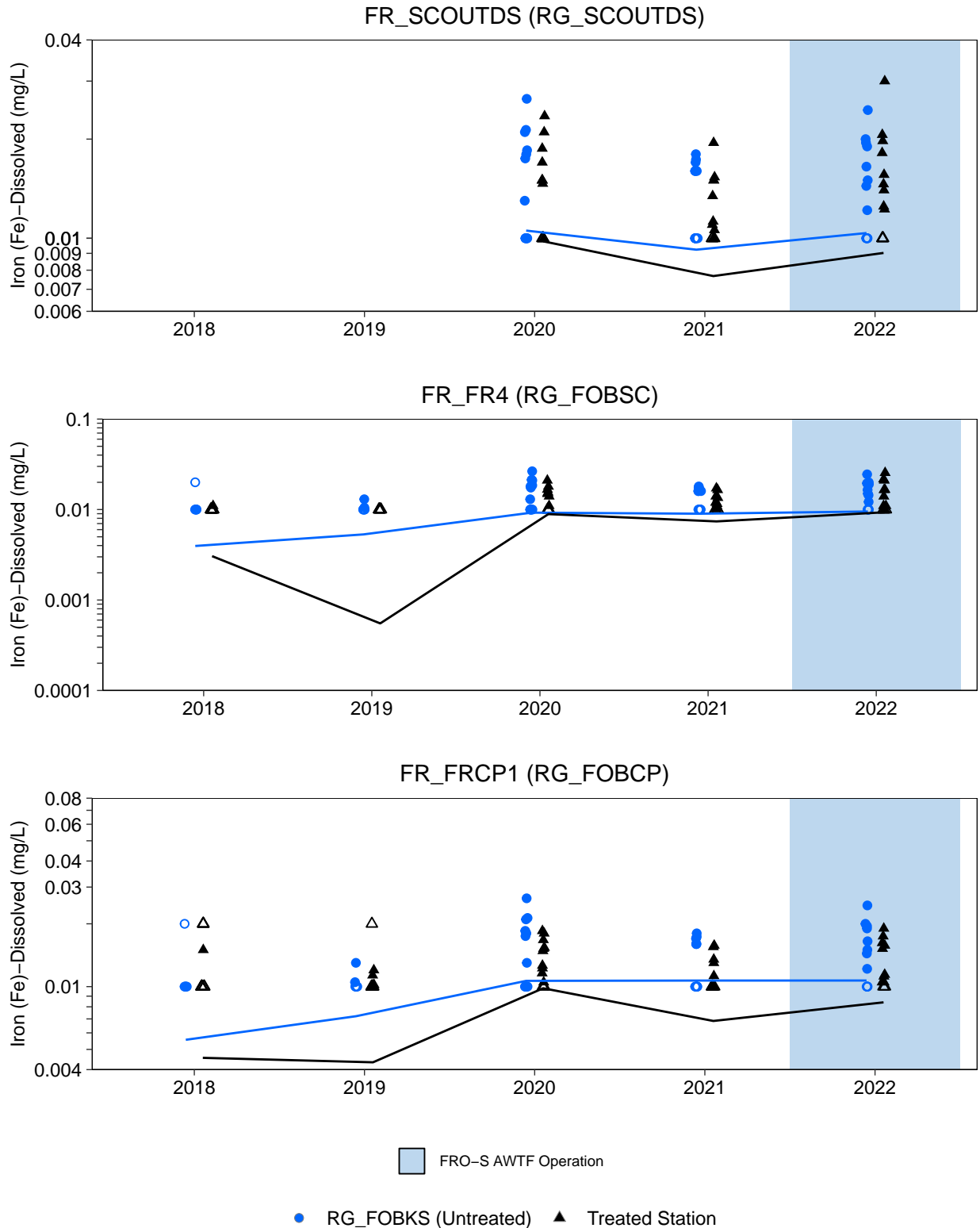


Figure D.34: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

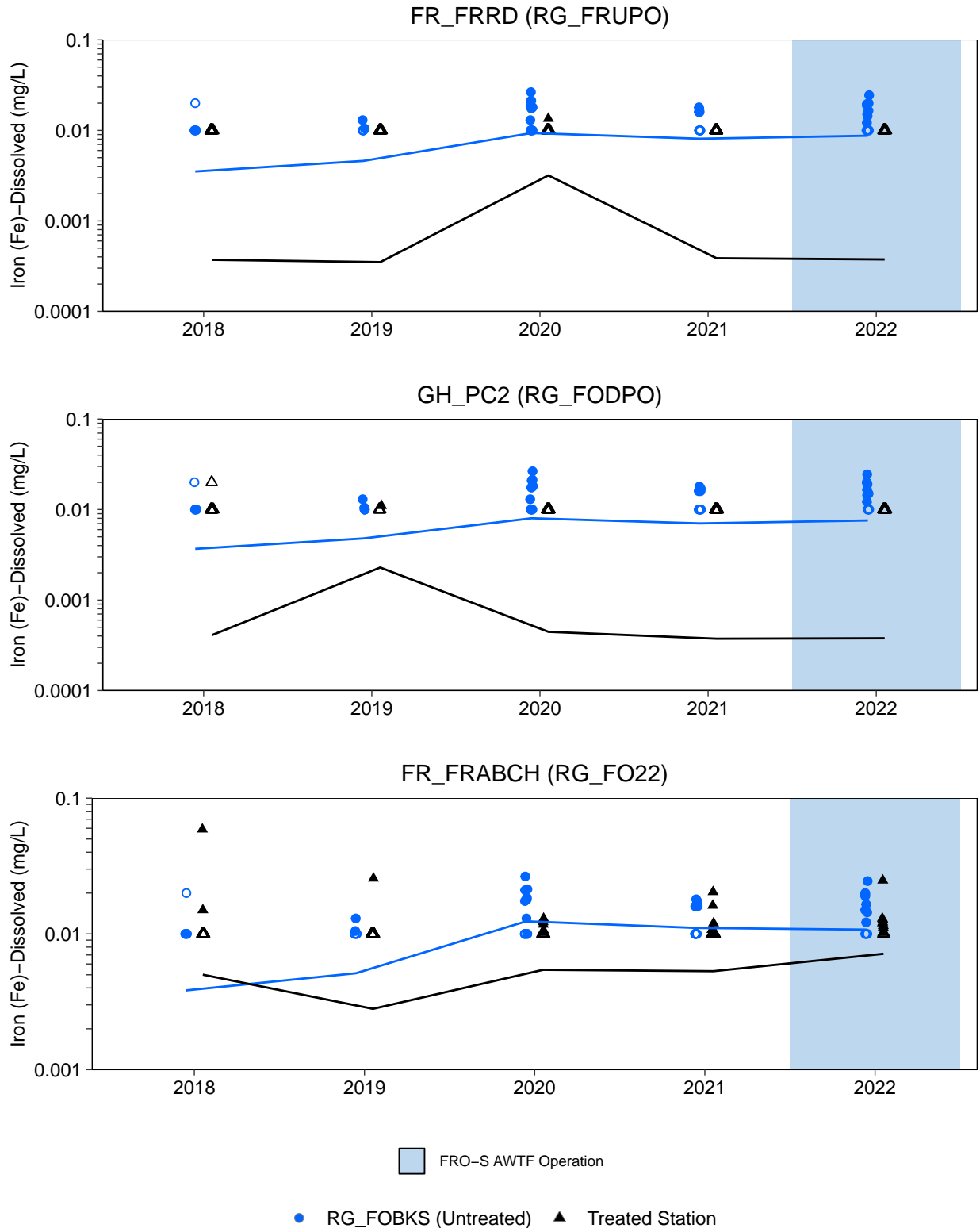


Figure D.34: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

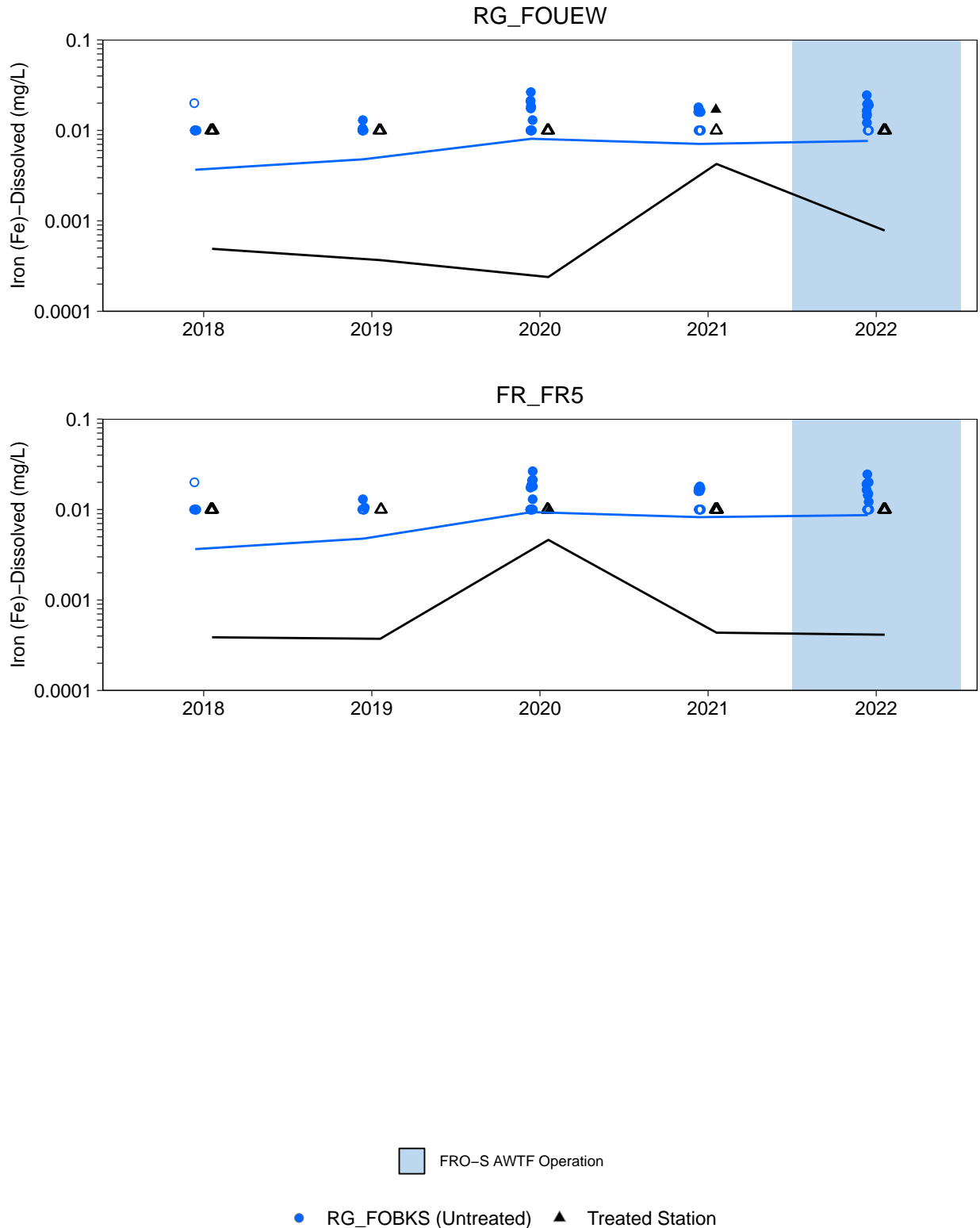


Figure D.34: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

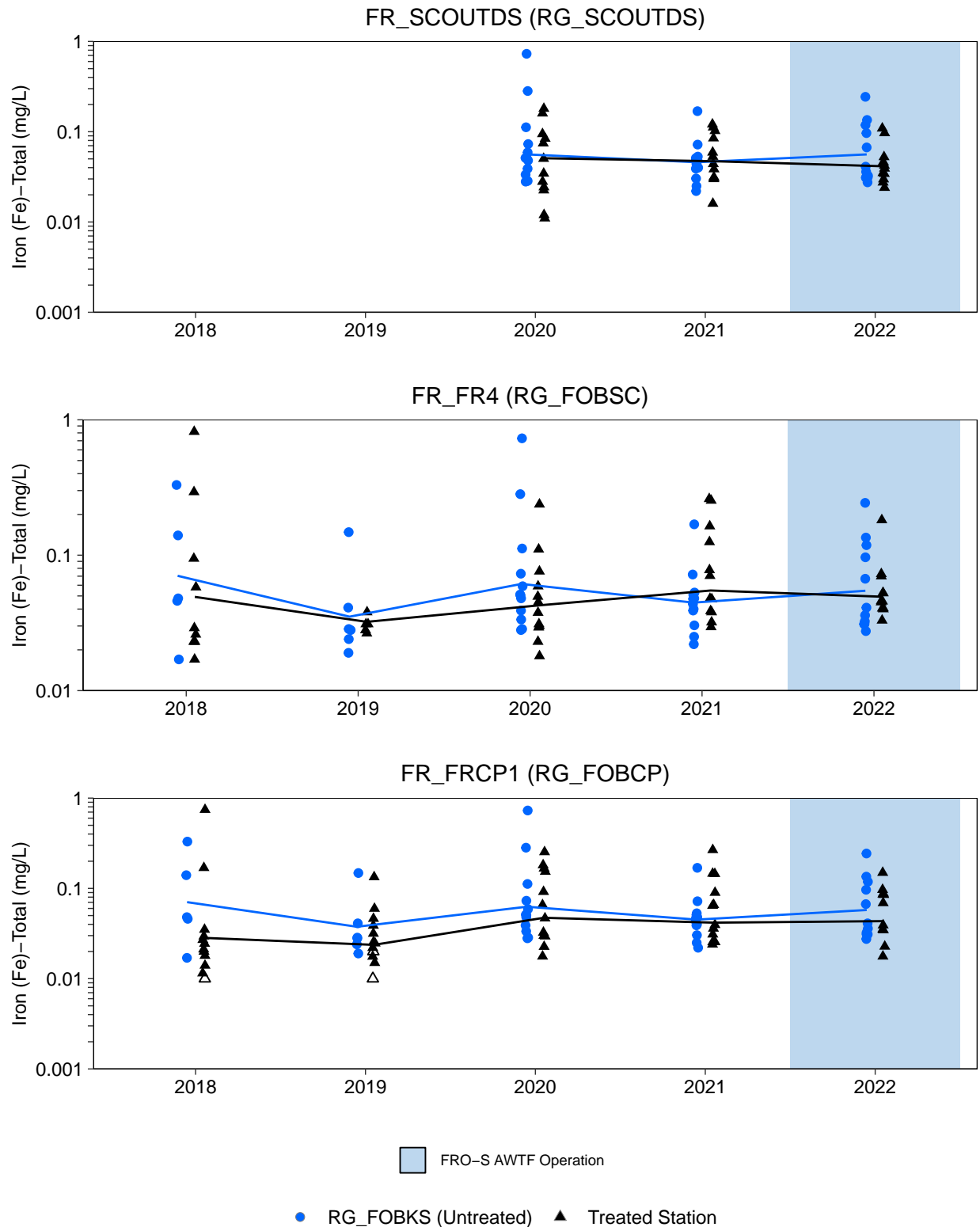


Figure D.35: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

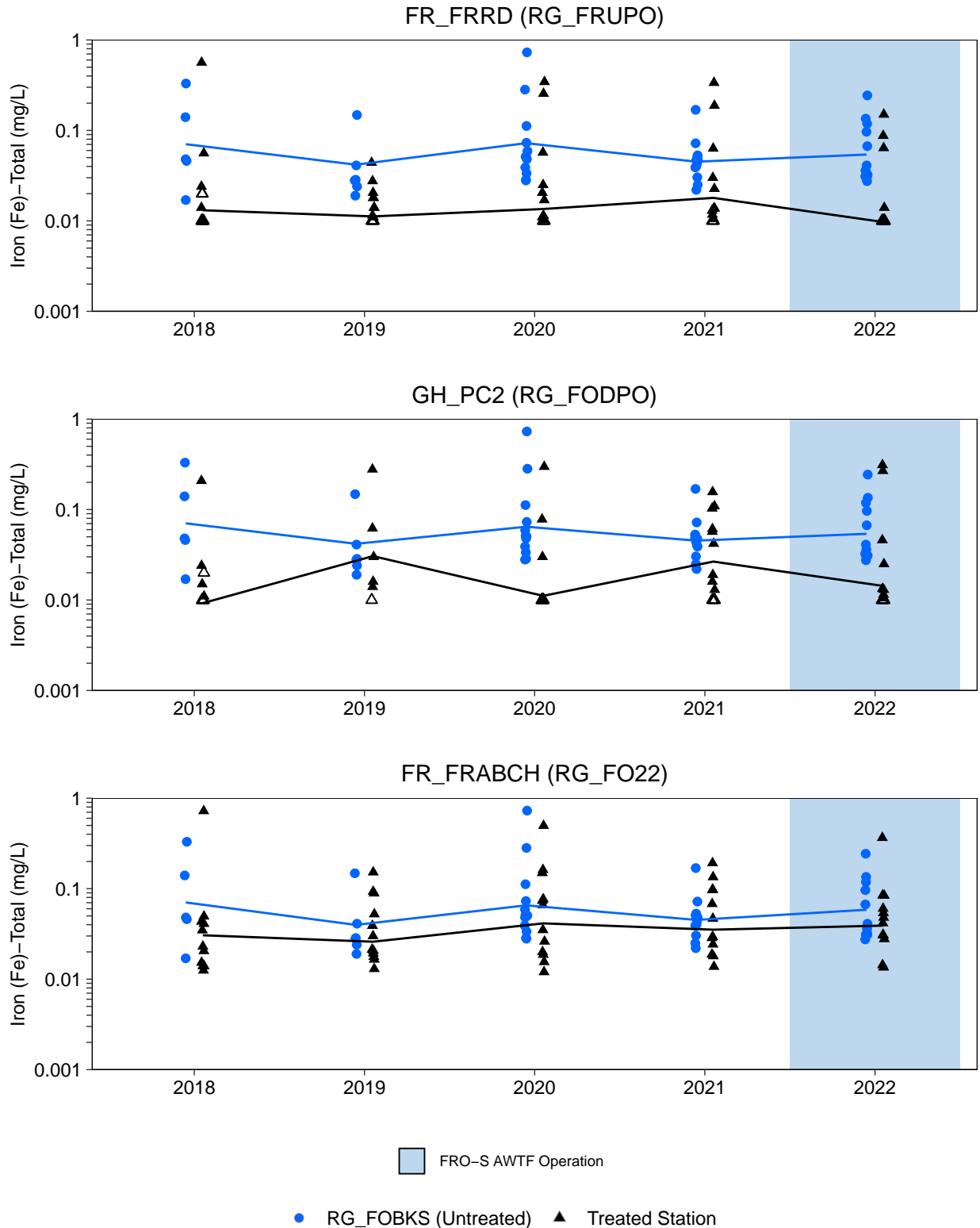


Figure D.35: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

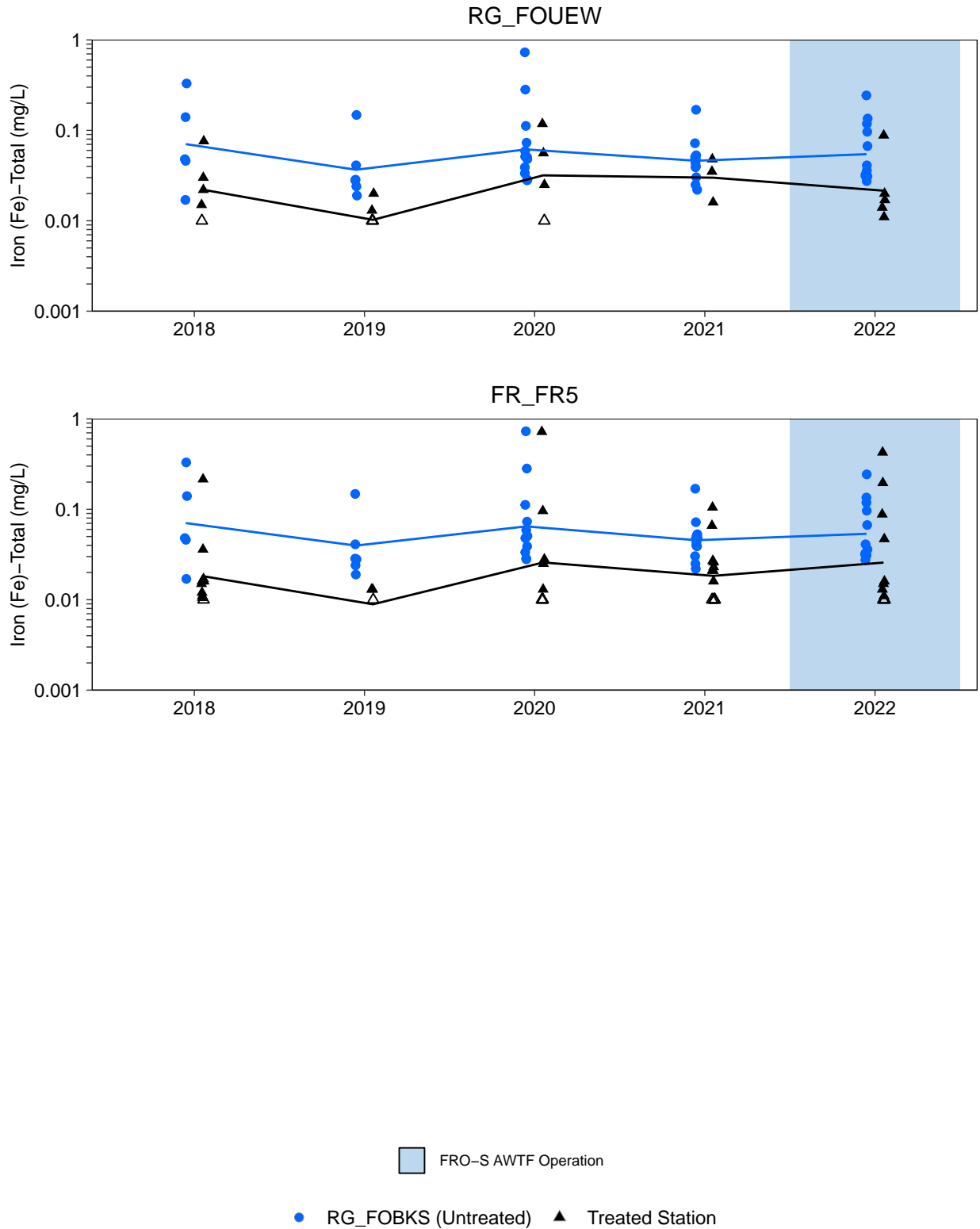


Figure D.35: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

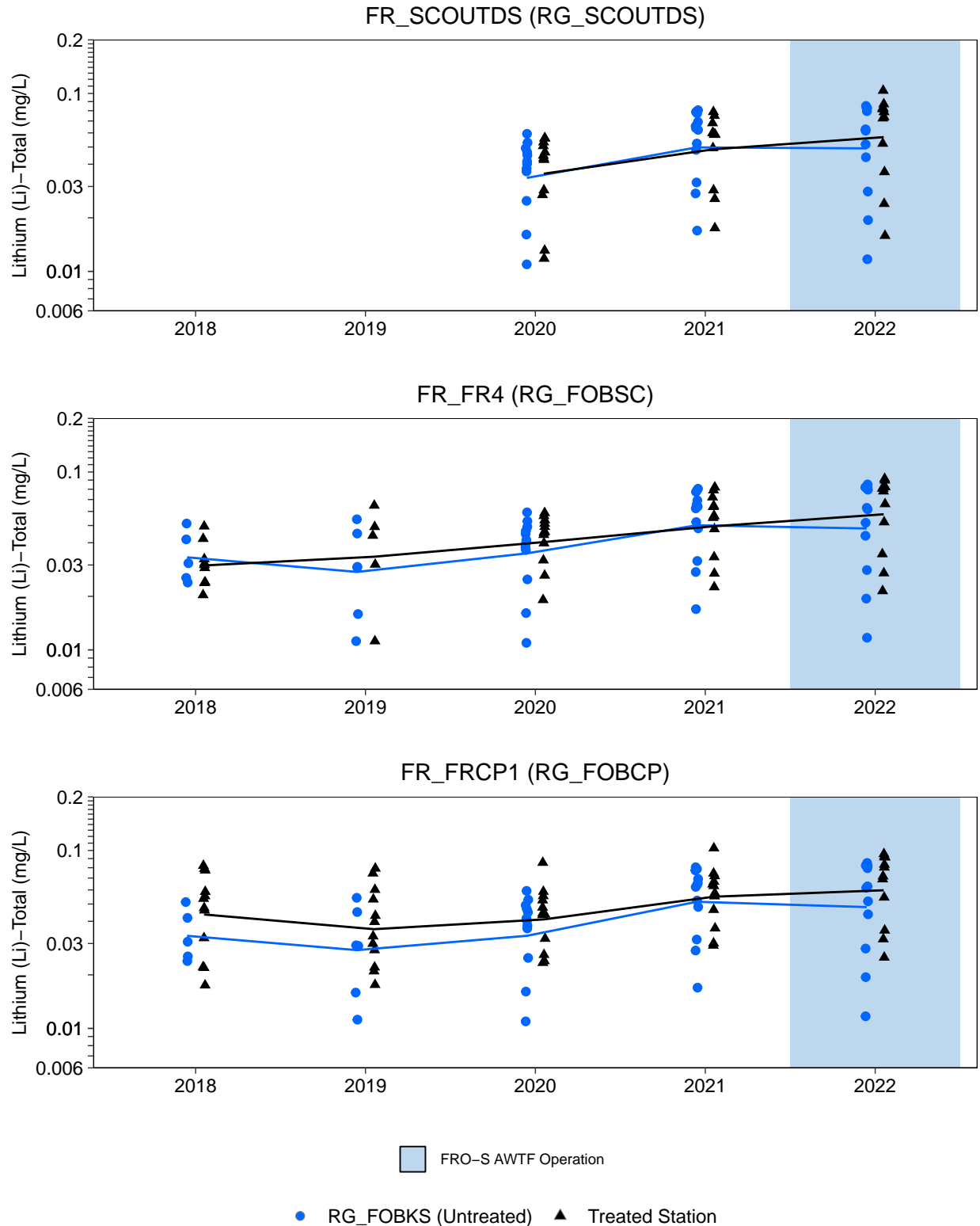


Figure D.36: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

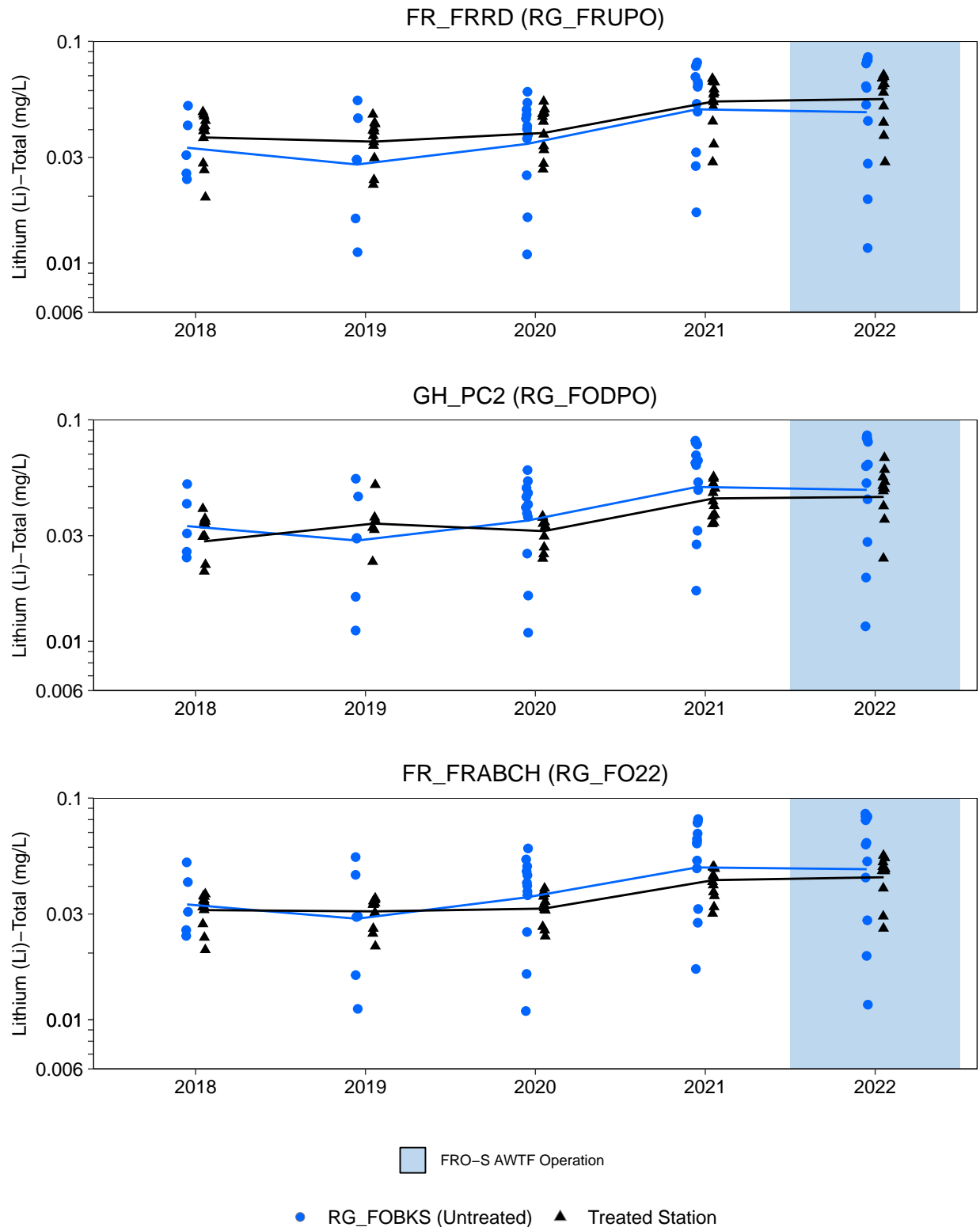


Figure D.36: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

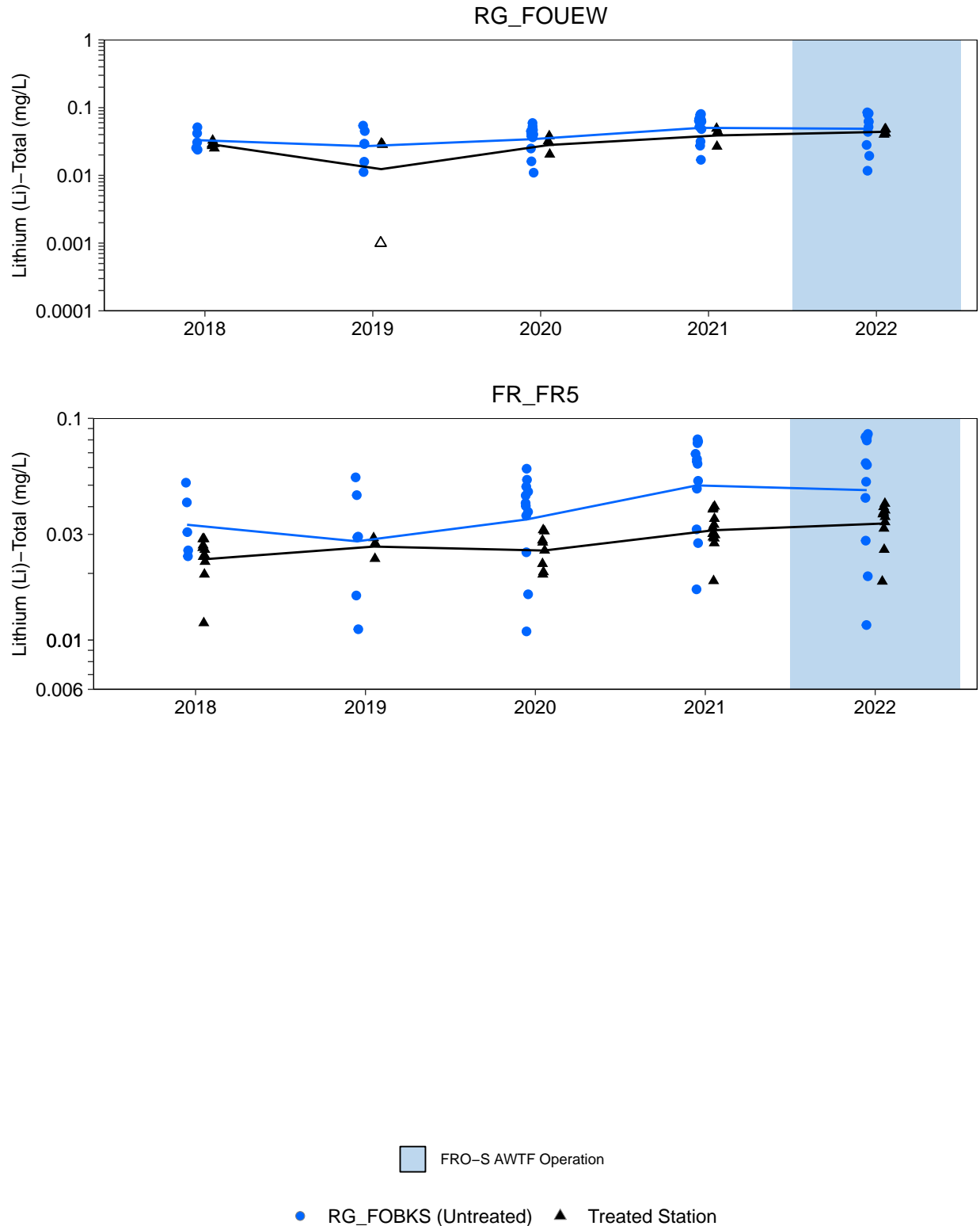


Figure D.36: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

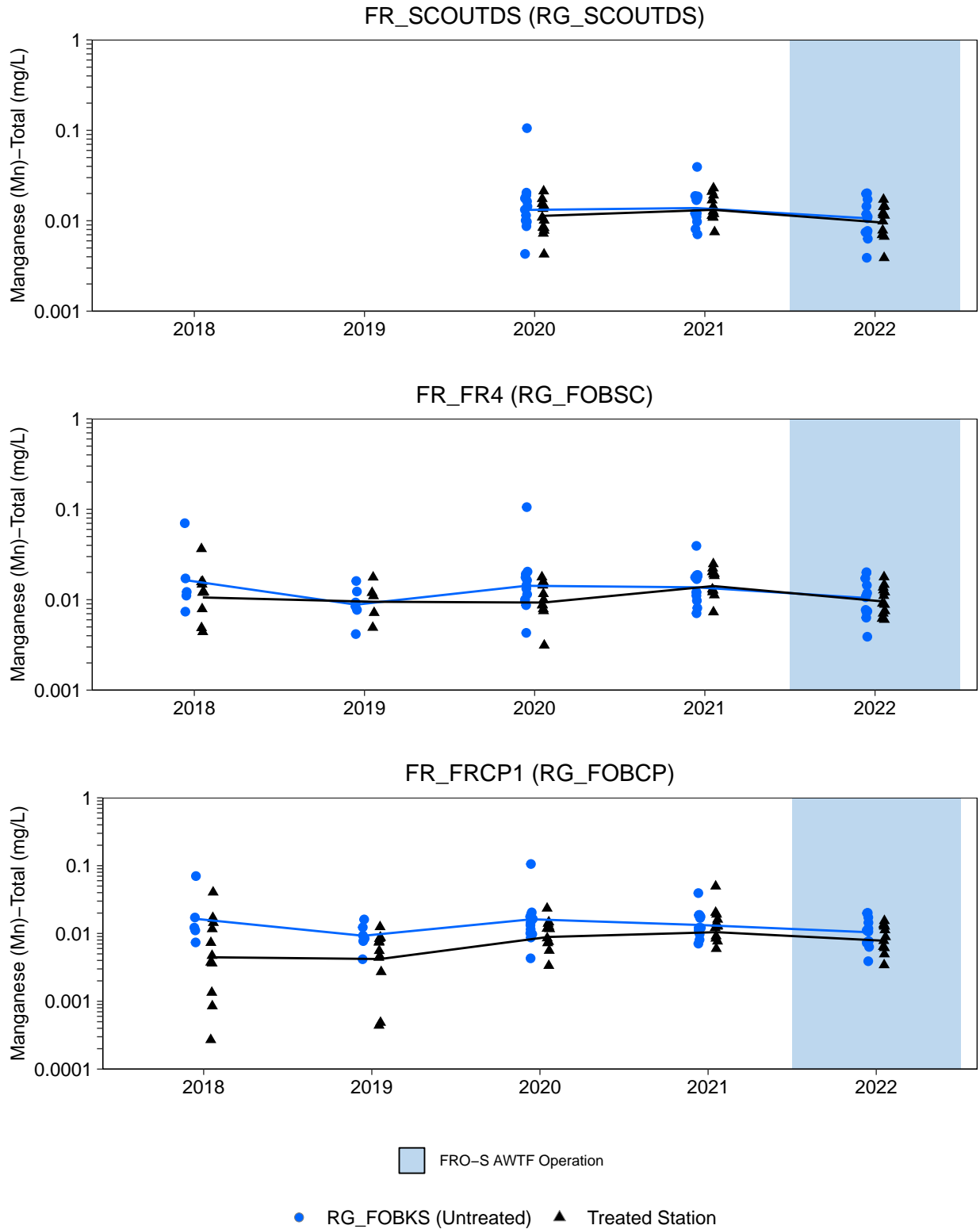


Figure D.37: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

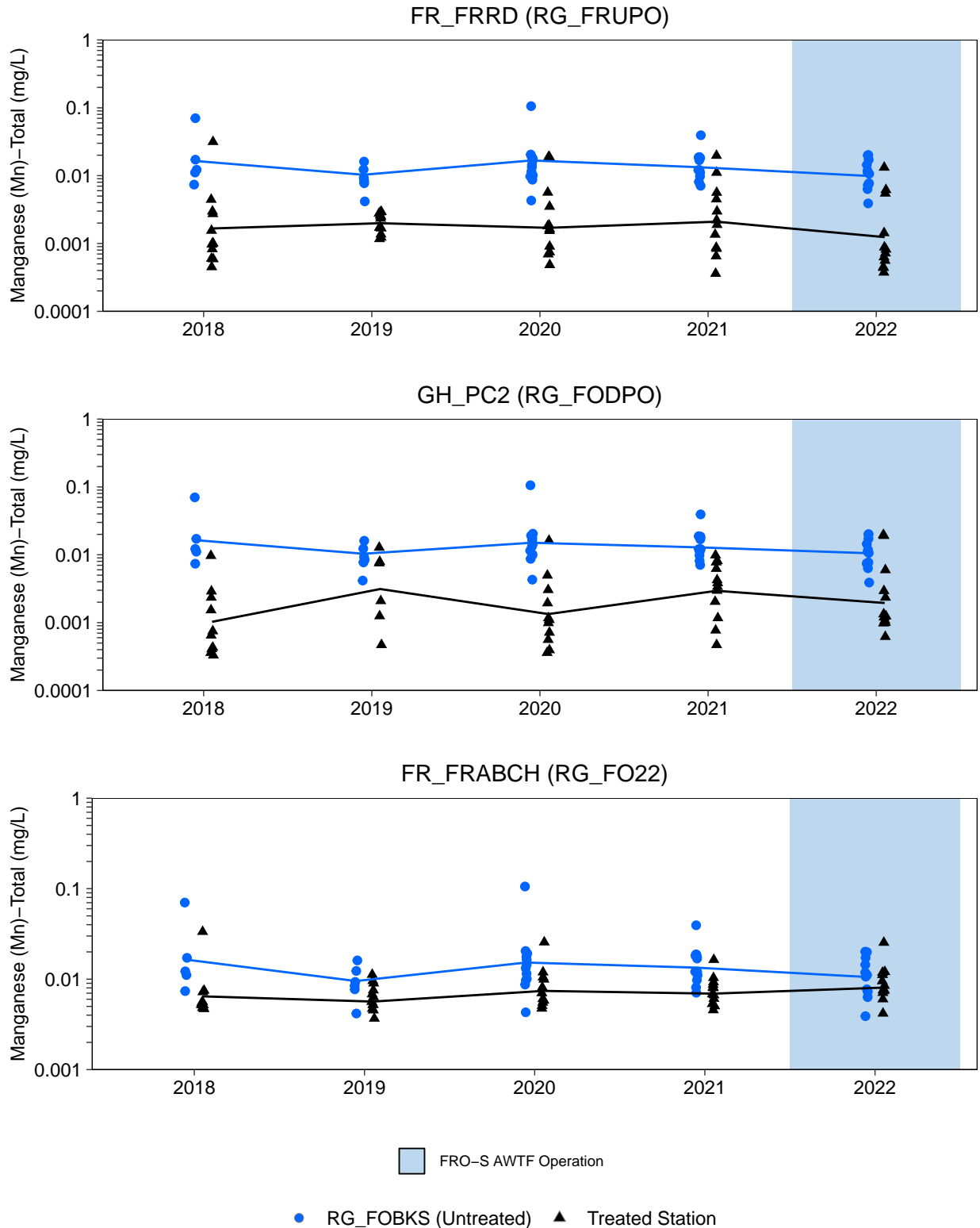


Figure D.37: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUDS was immediately downstream of the outfall.

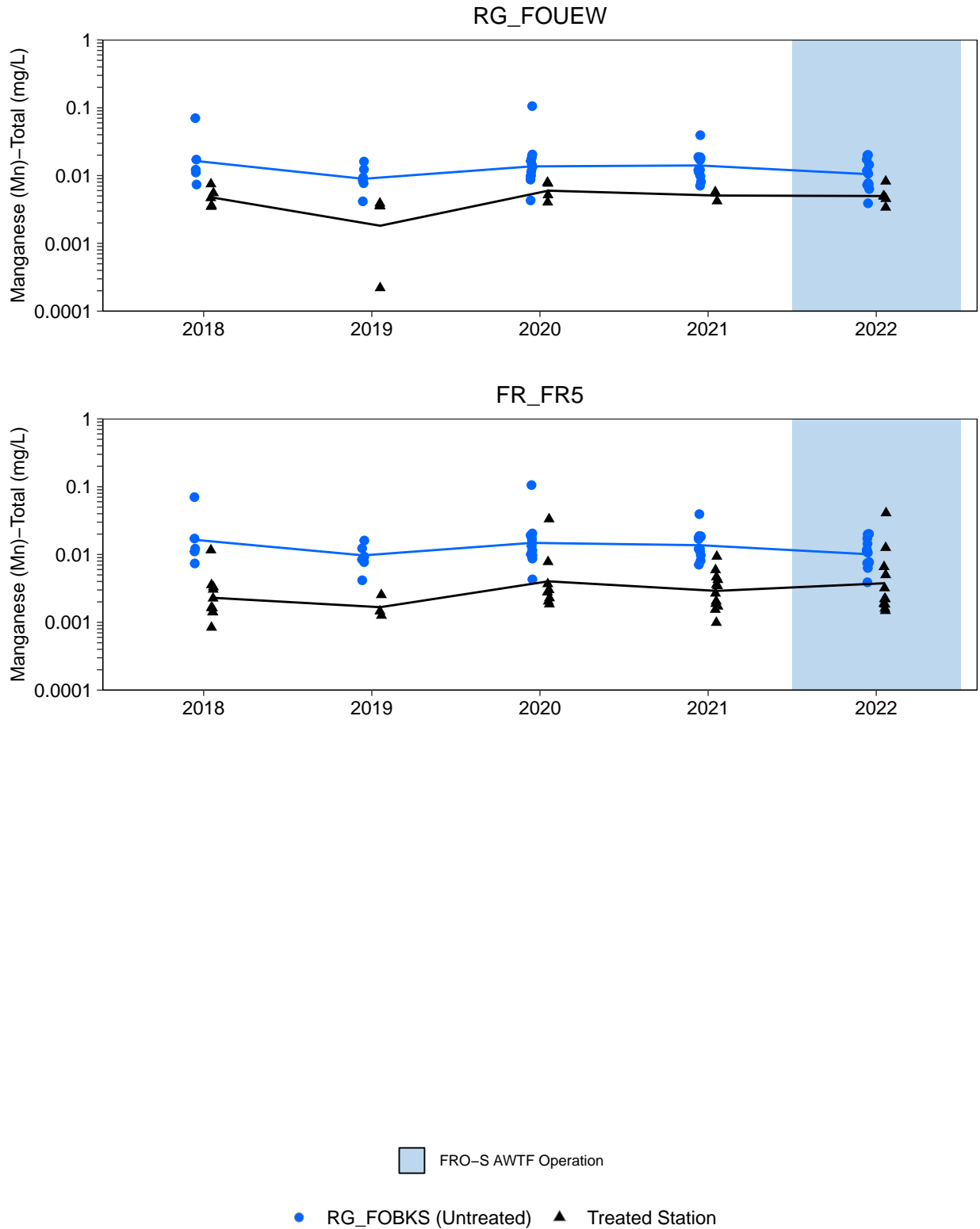


Figure D.37: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

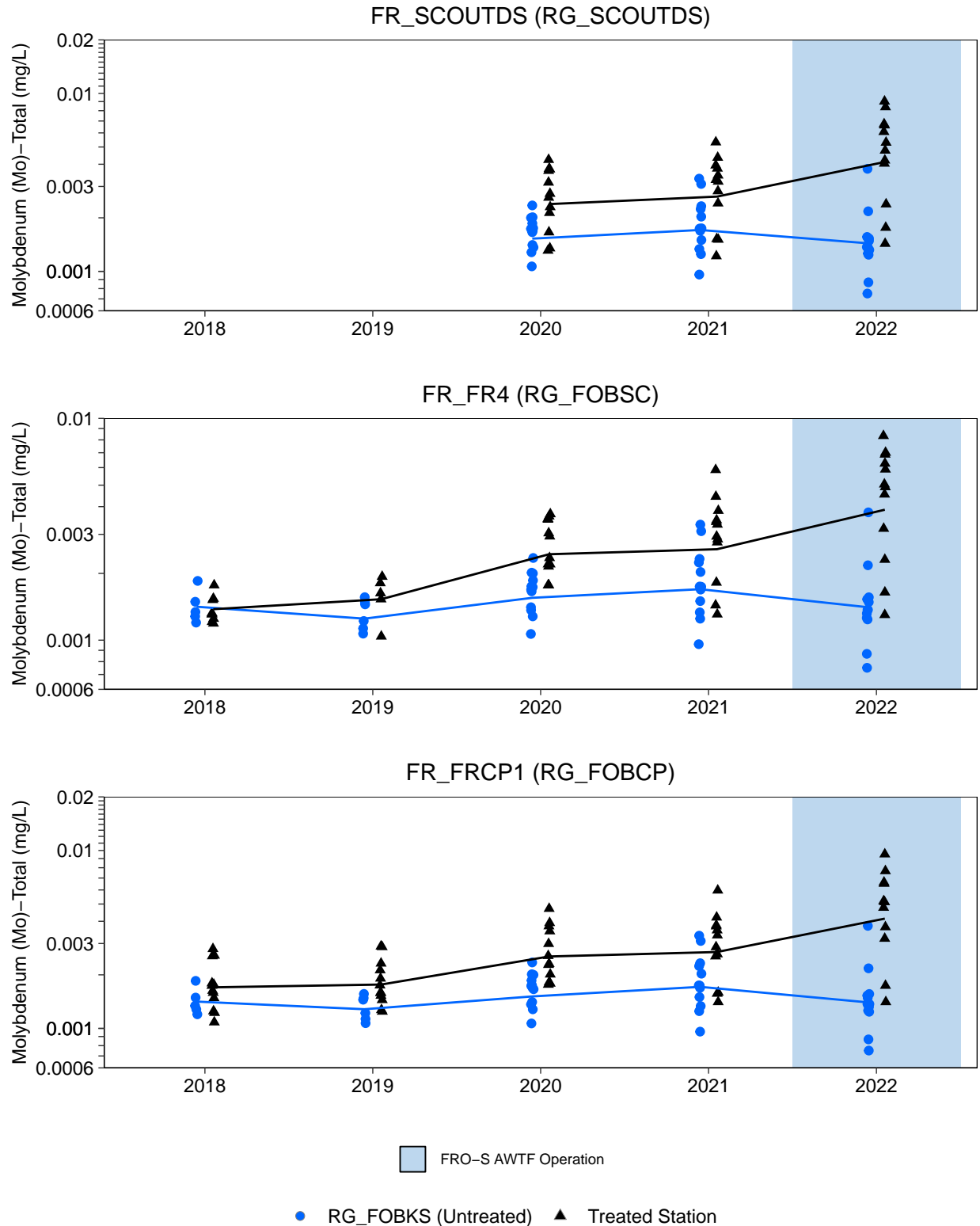


Figure D.38: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

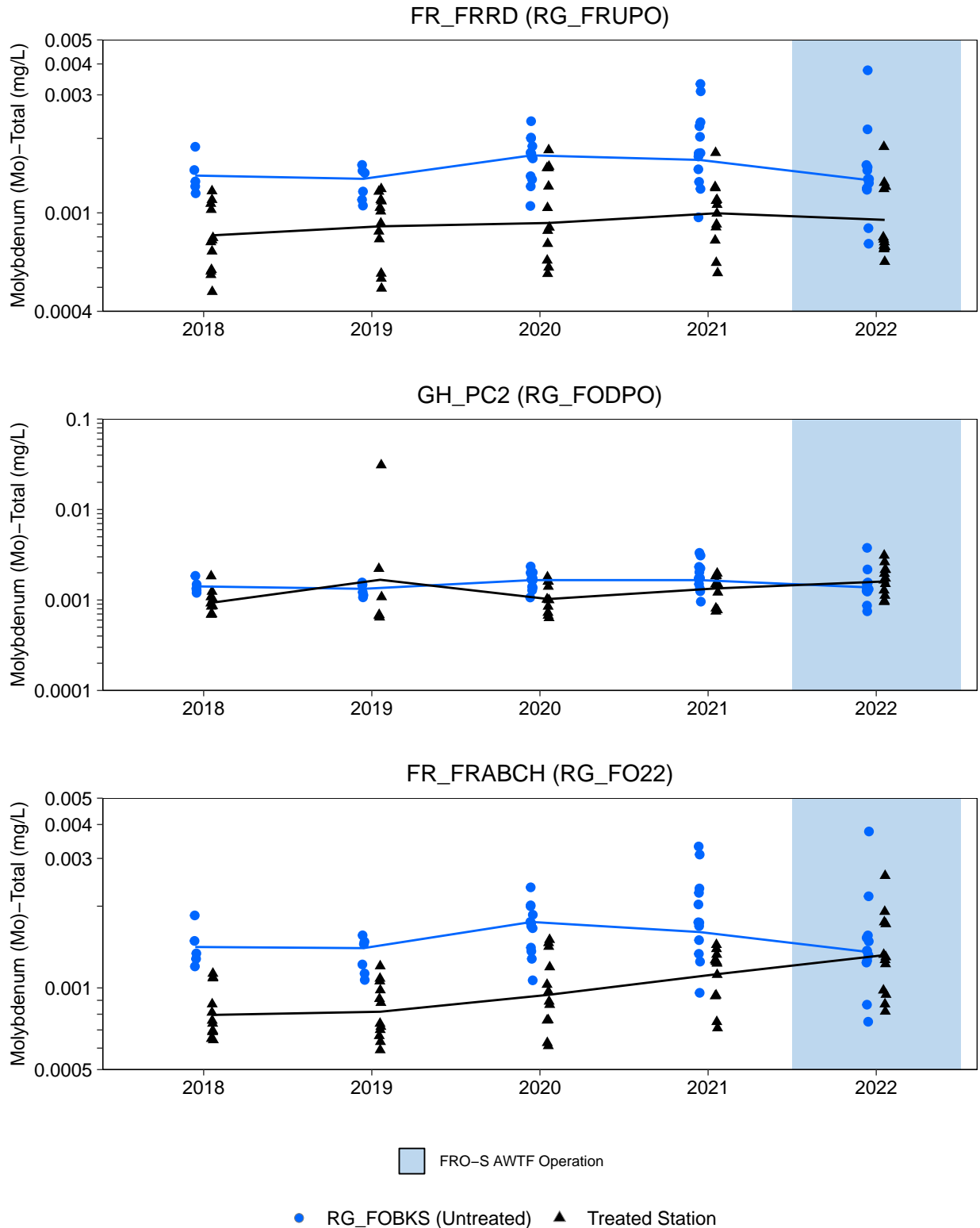


Figure D.38: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUDS was immediately downstream of the outfall.

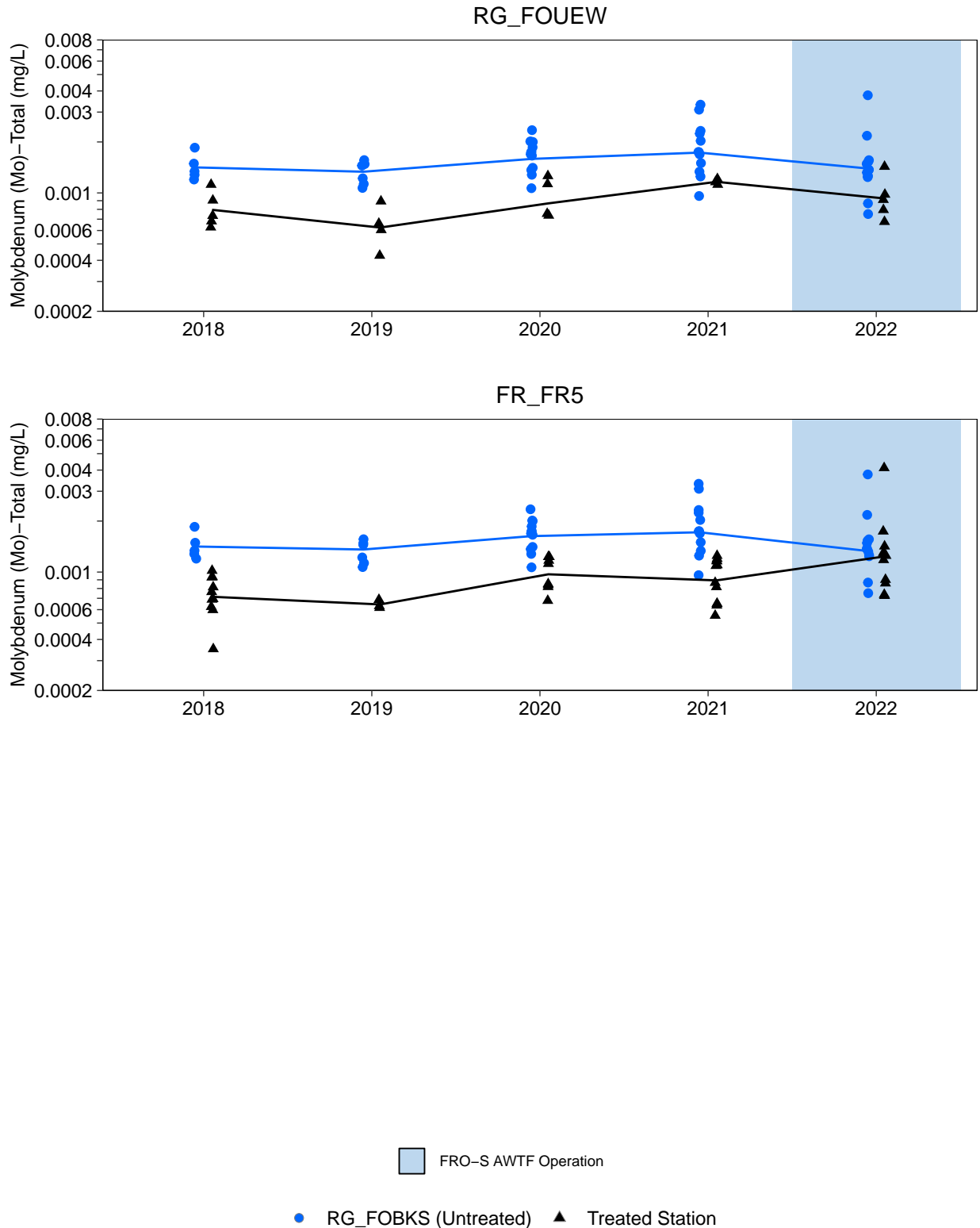


Figure D.38: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

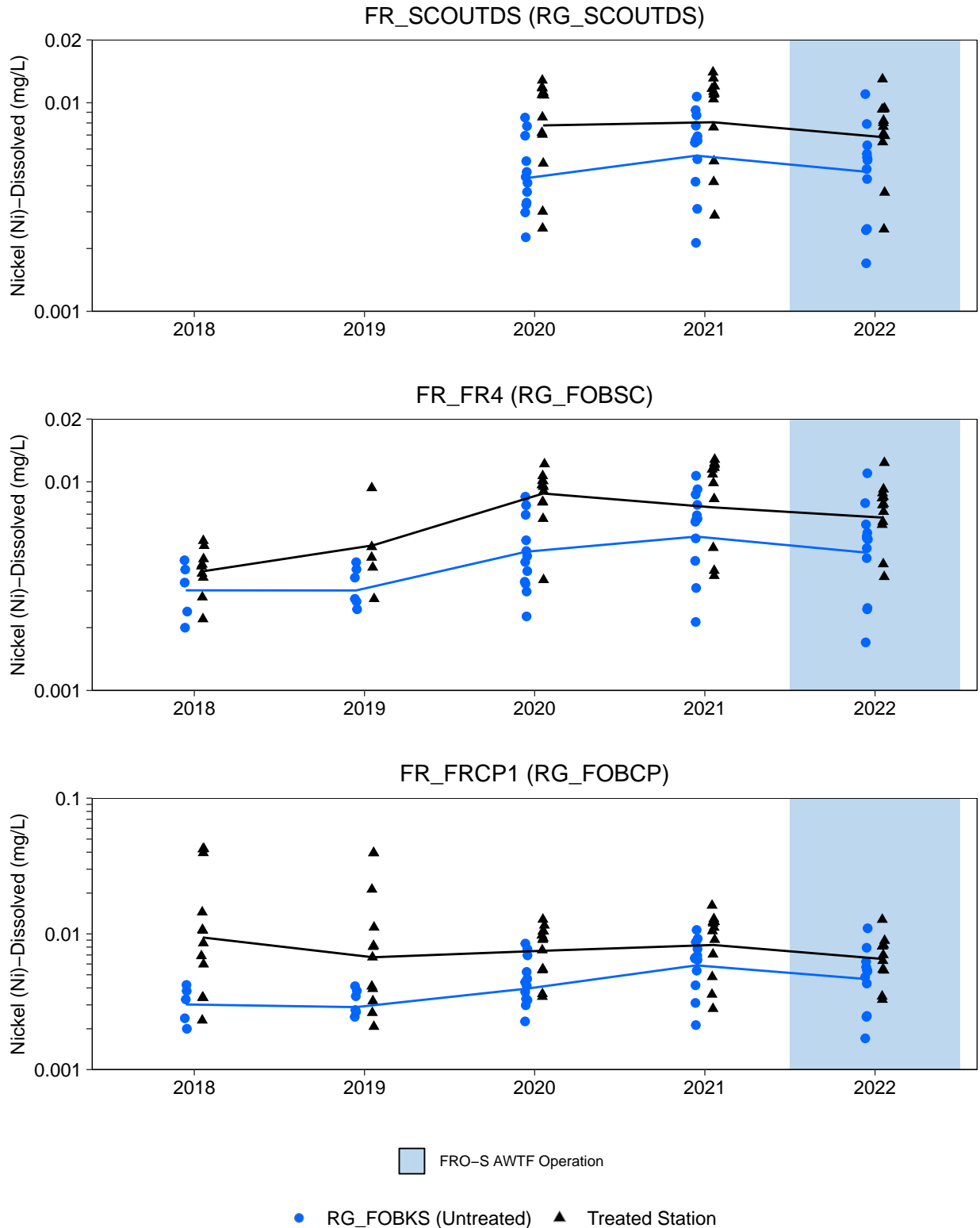


Figure D.39: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

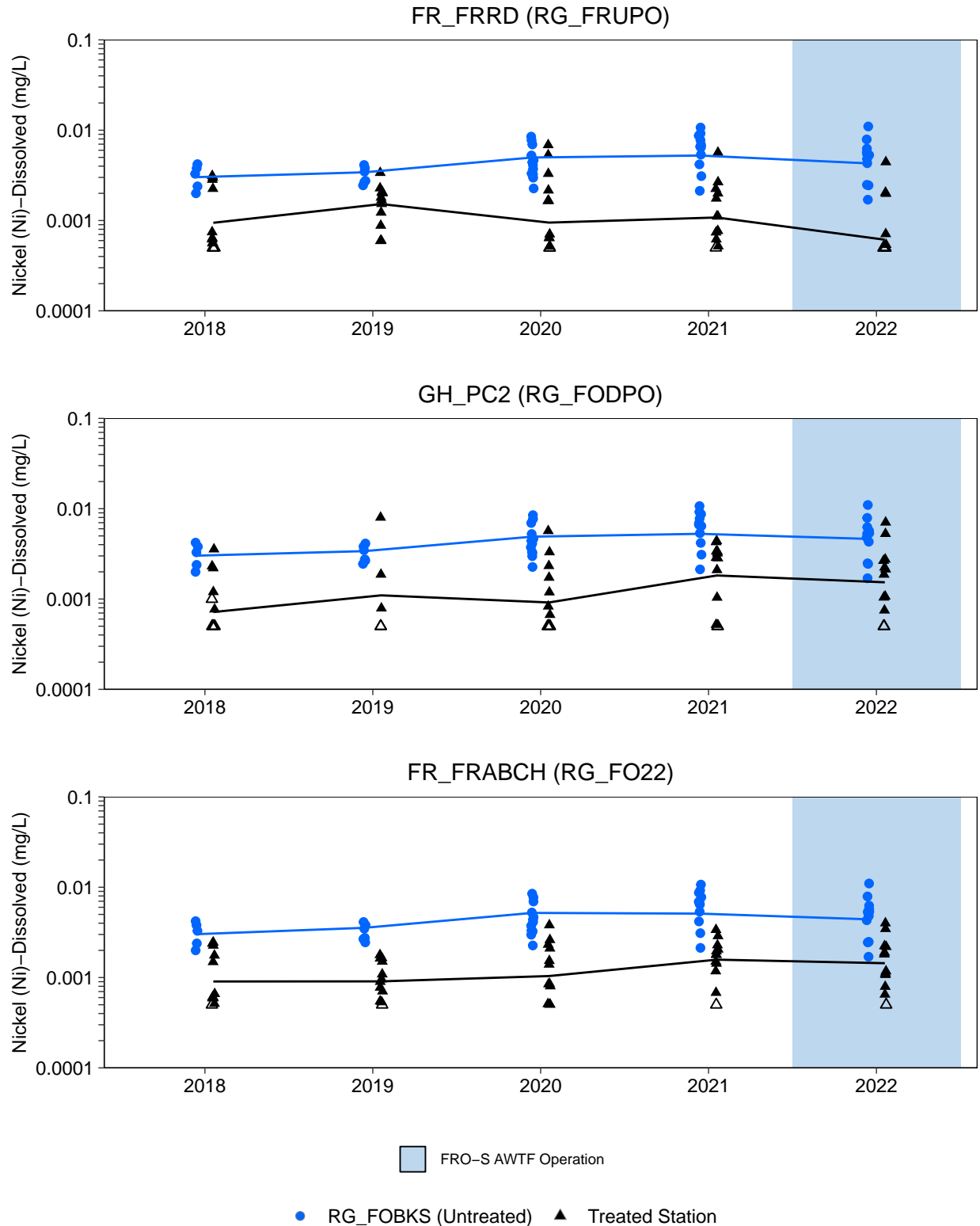


Figure D.39: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUDS was immediately downstream of the outfall.

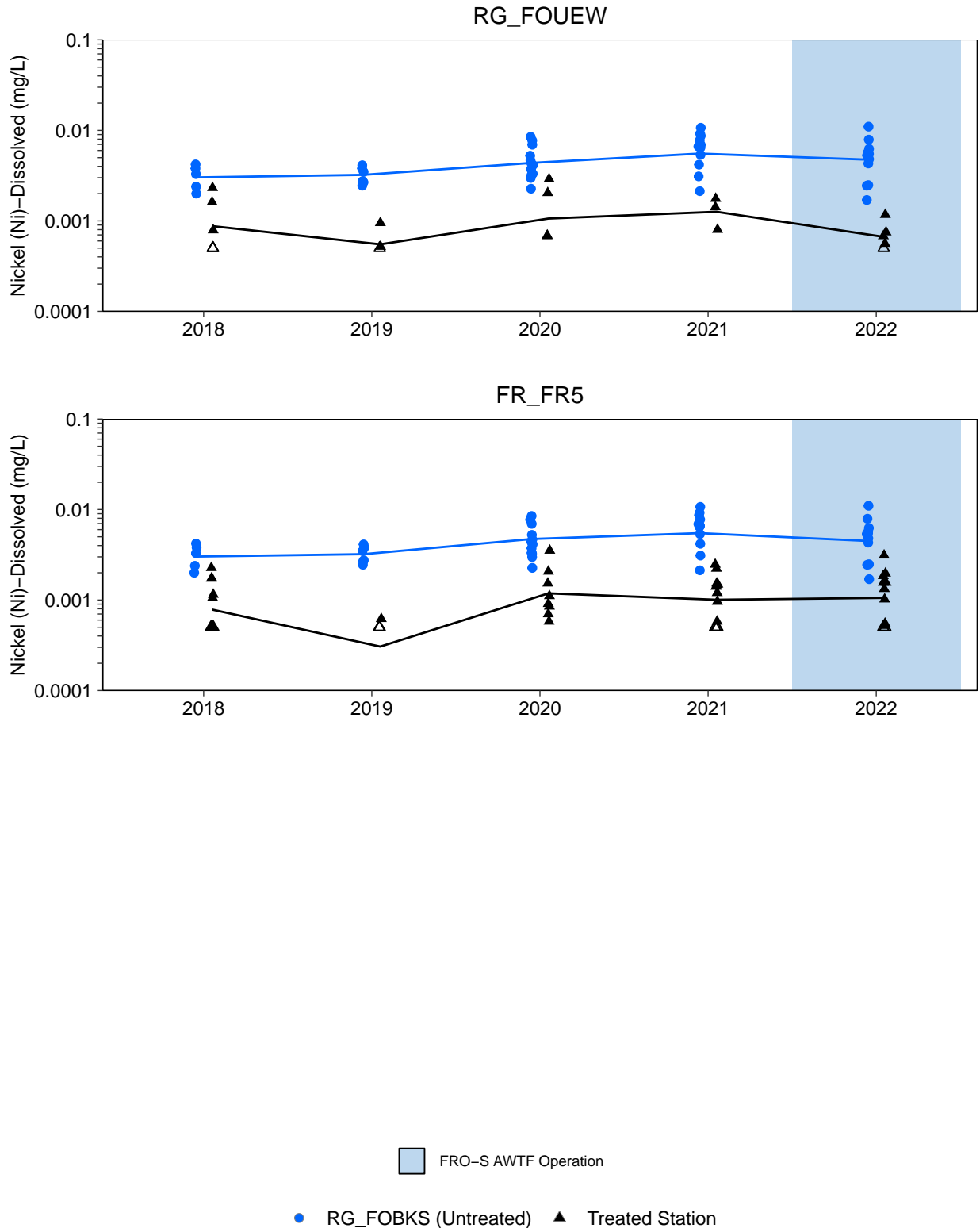


Figure D.39: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

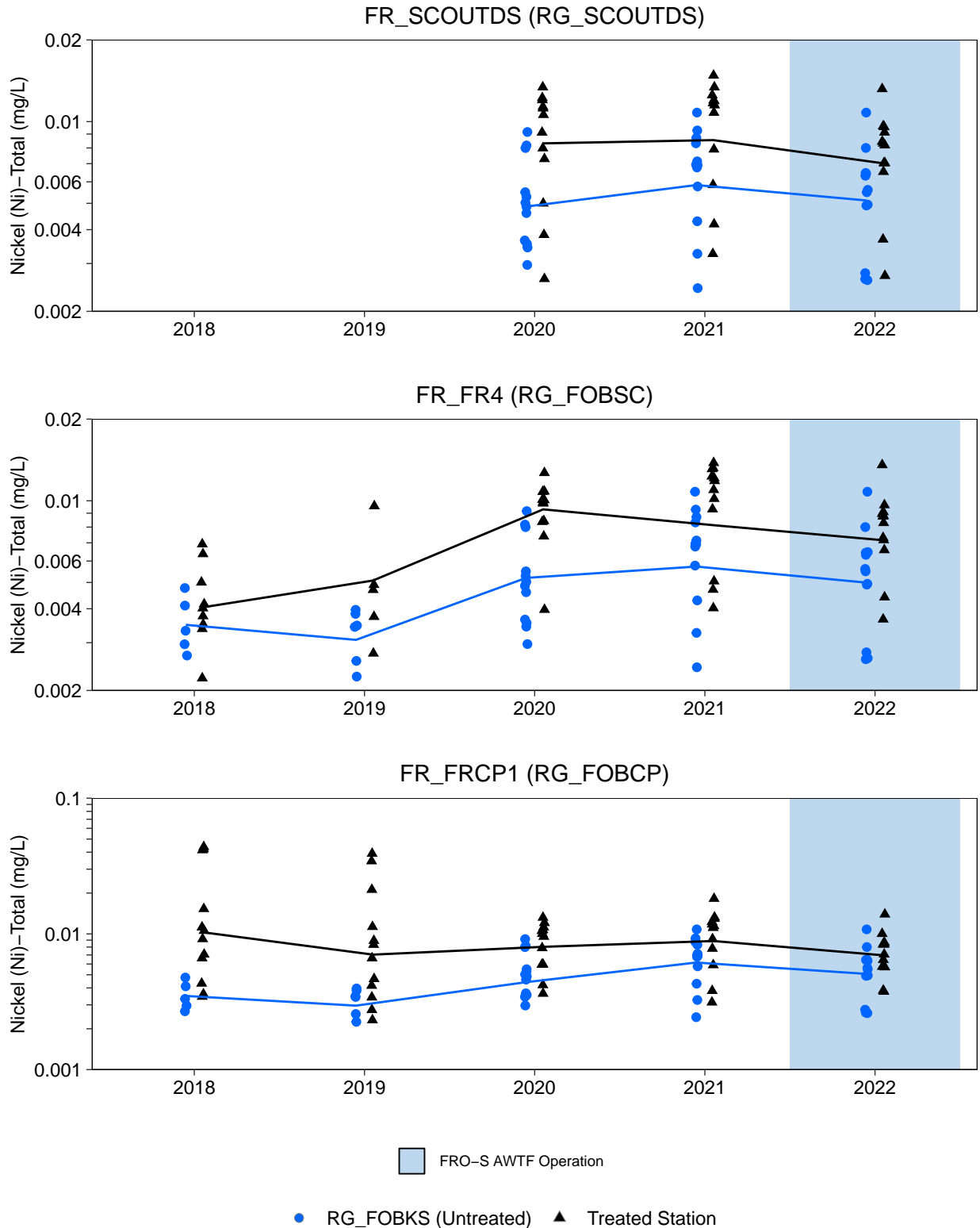


Figure D.40: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

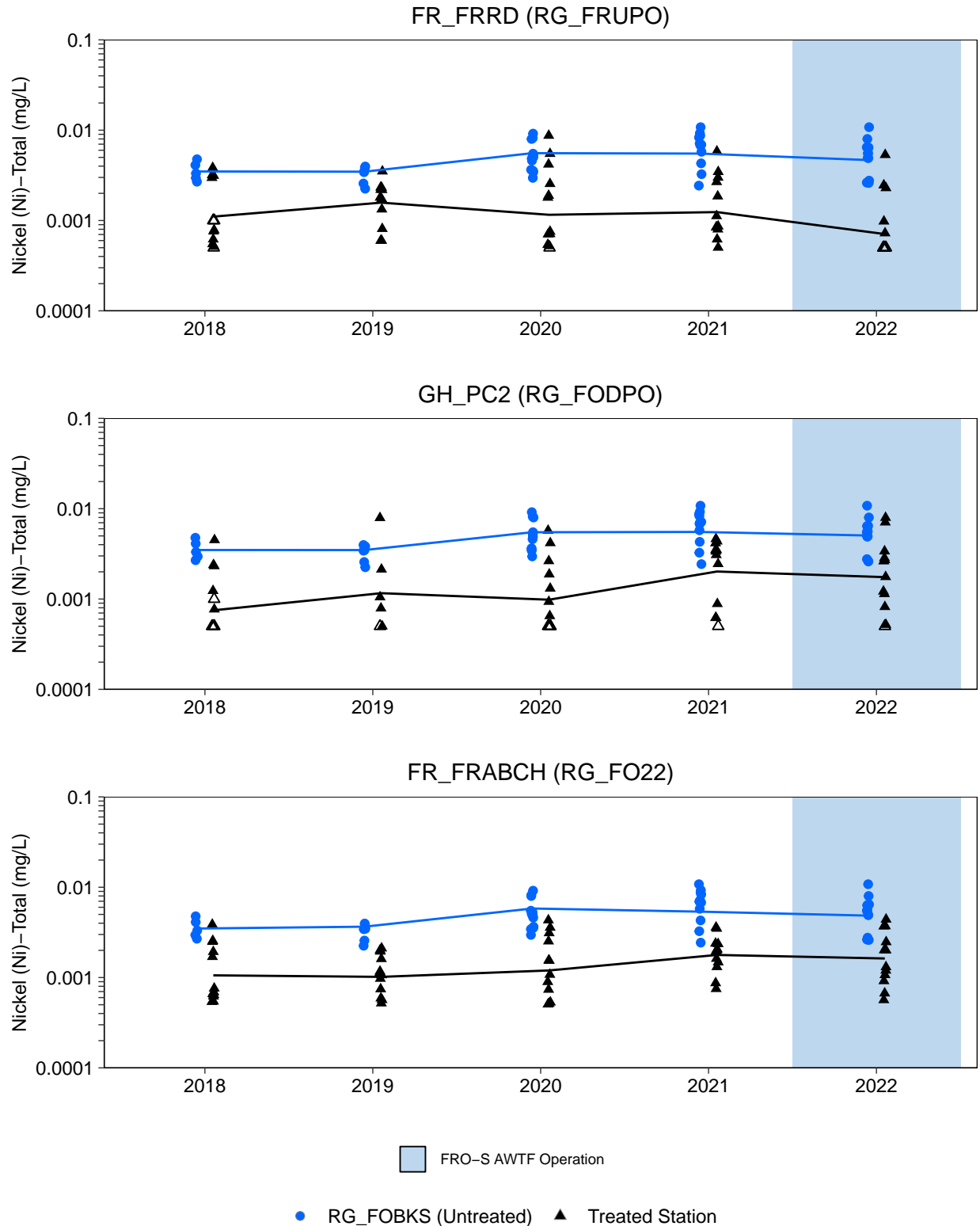


Figure D.40: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

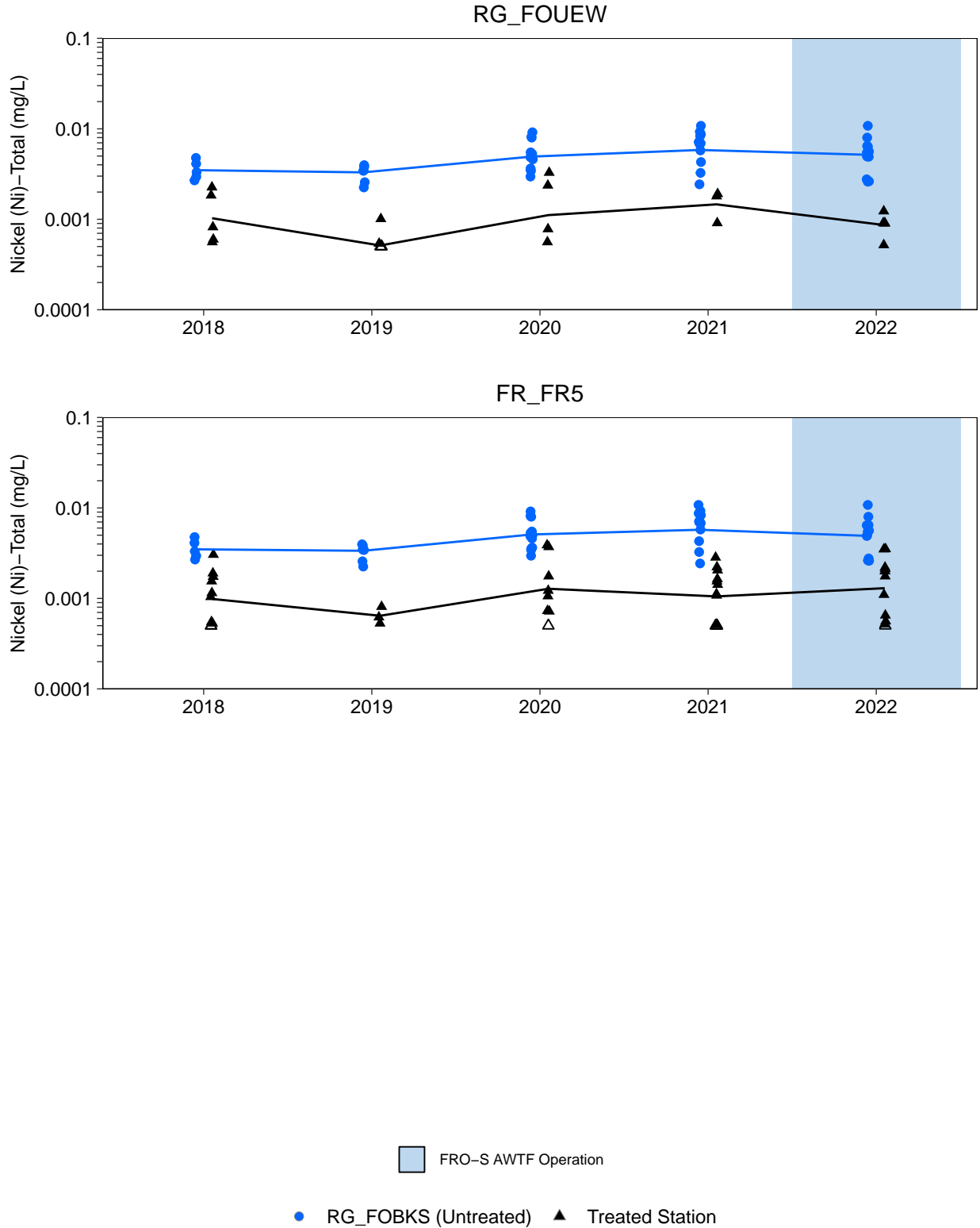


Figure D.40: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

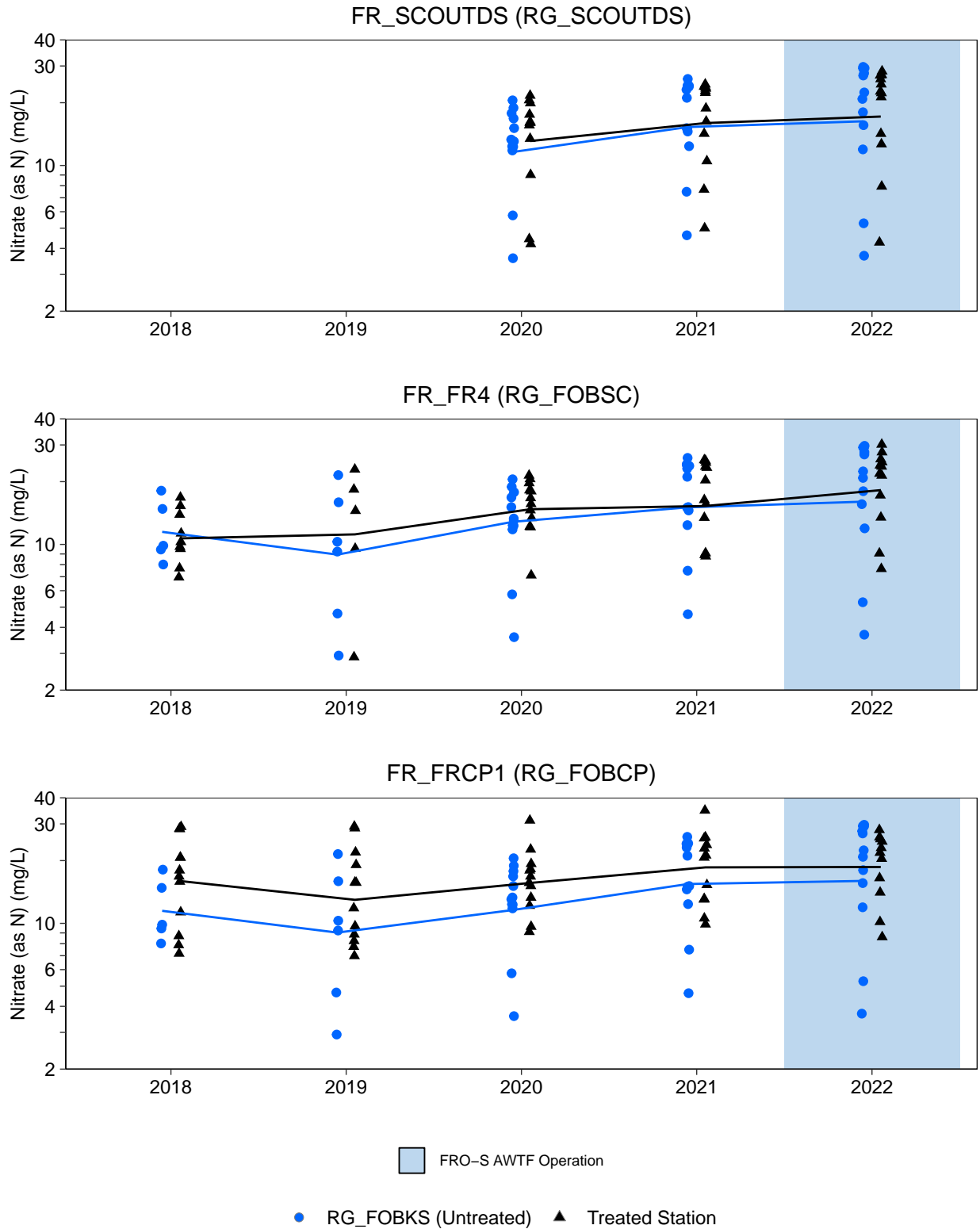


Figure D.41: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

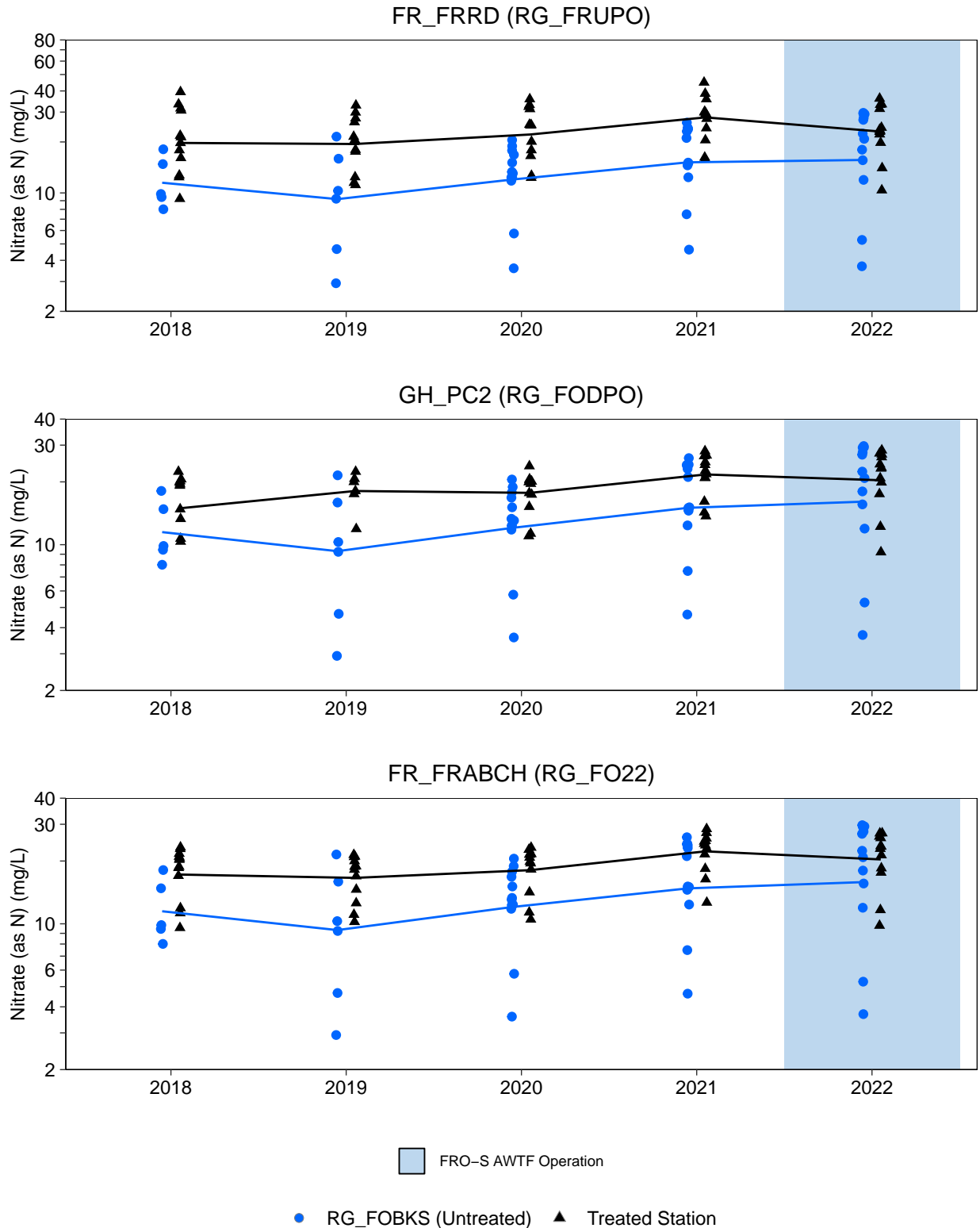


Figure D.41: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUDS was immediately downstream of the outfall.

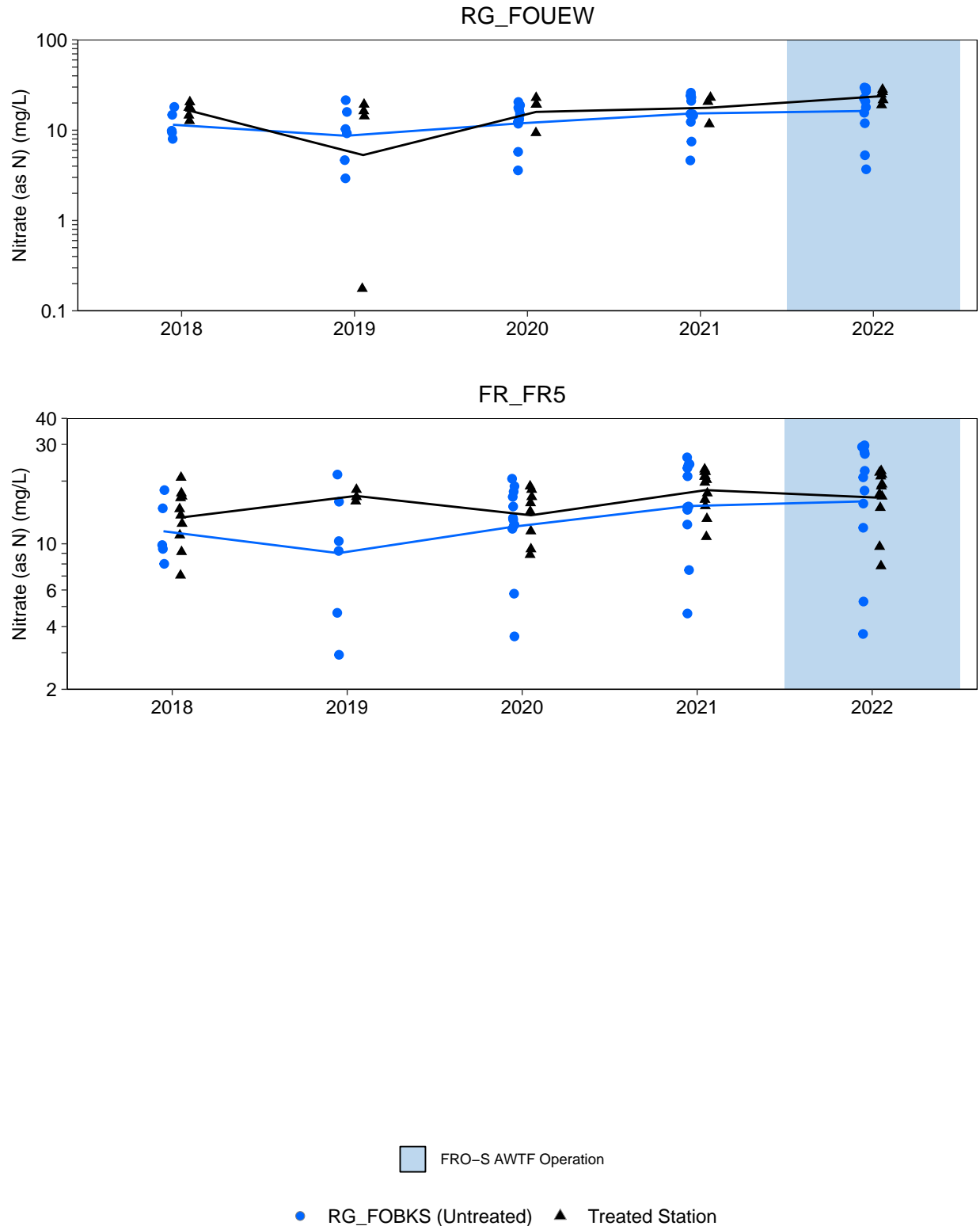


Figure D.41: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

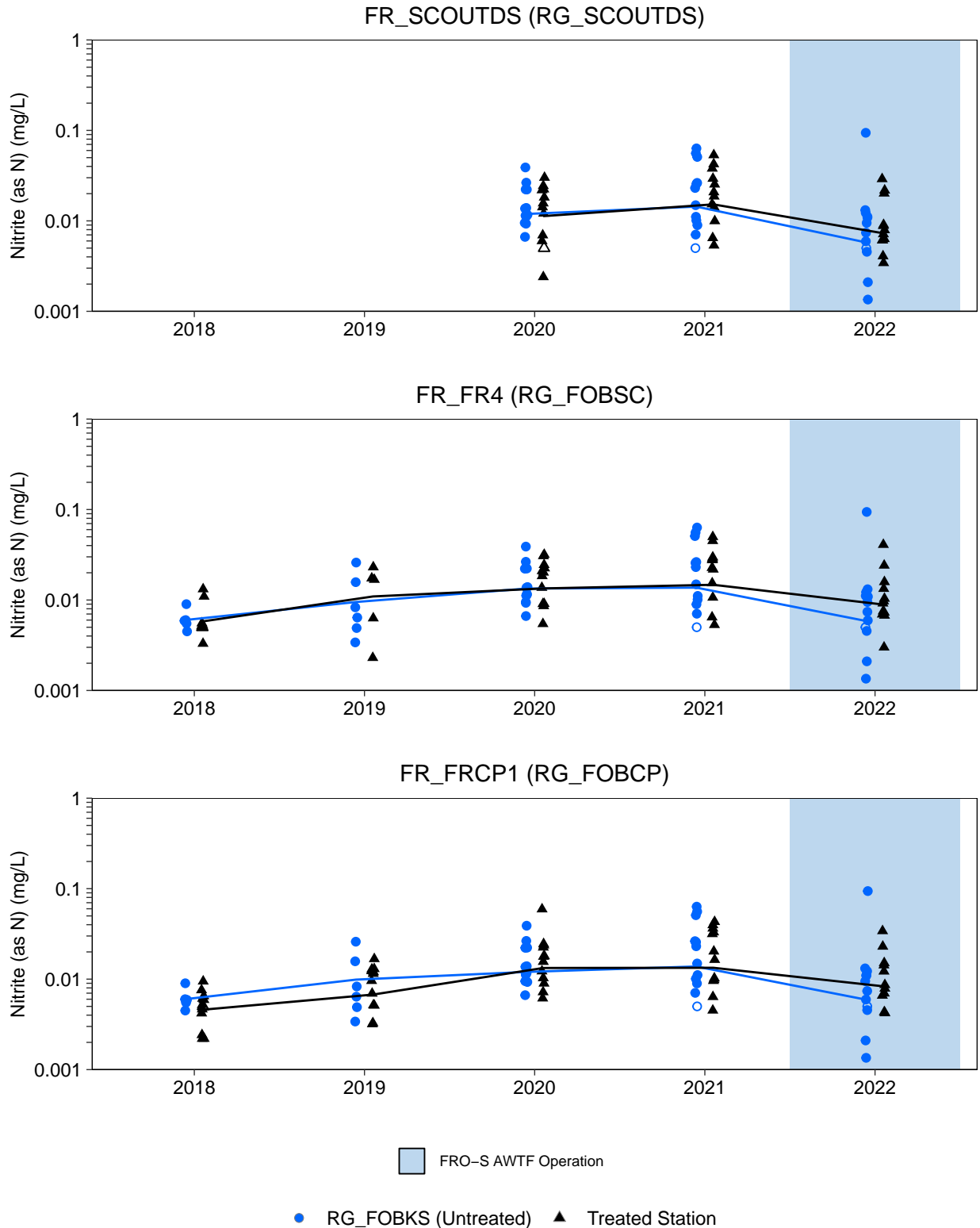


Figure D.42: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

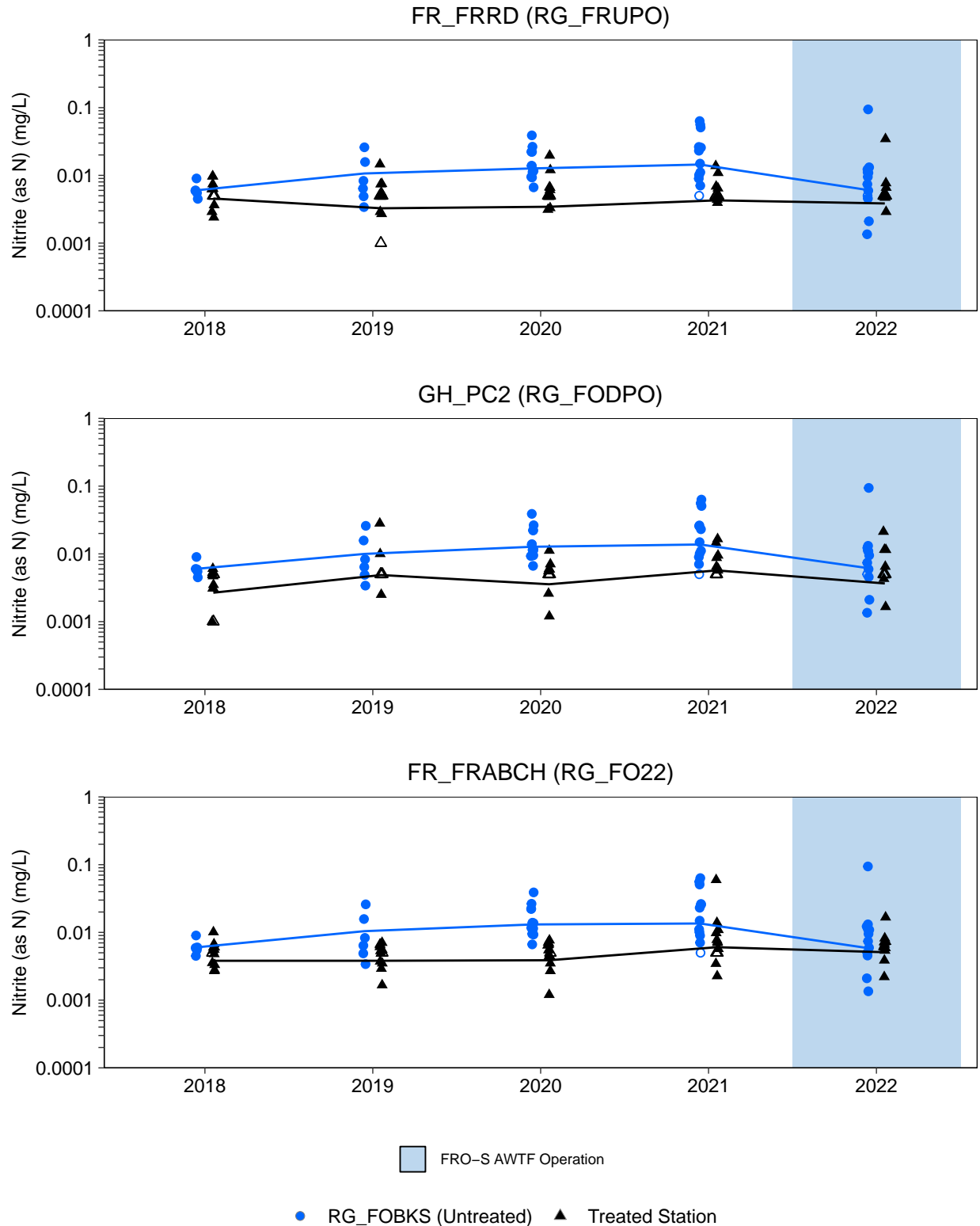


Figure D.42: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

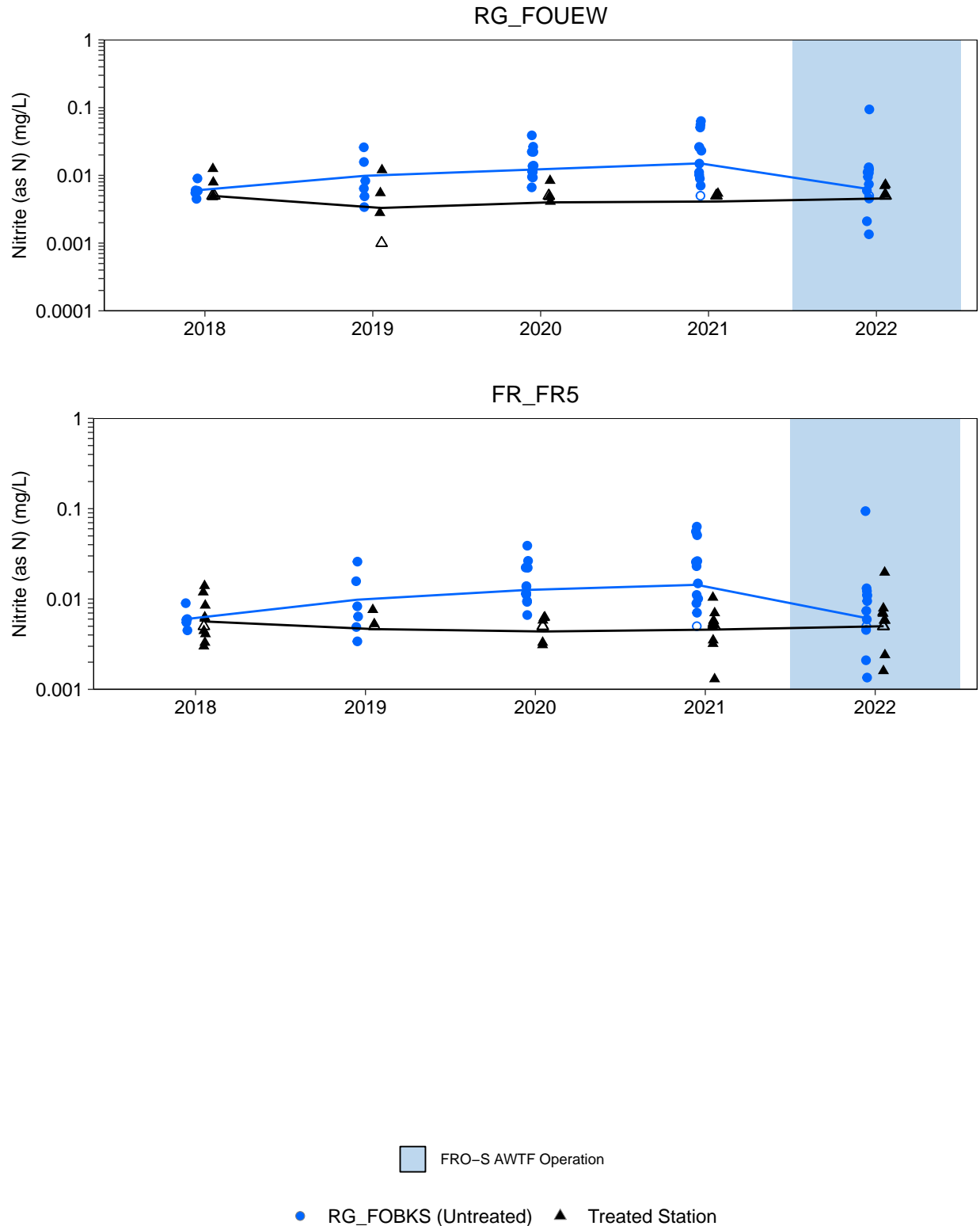


Figure D.42: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

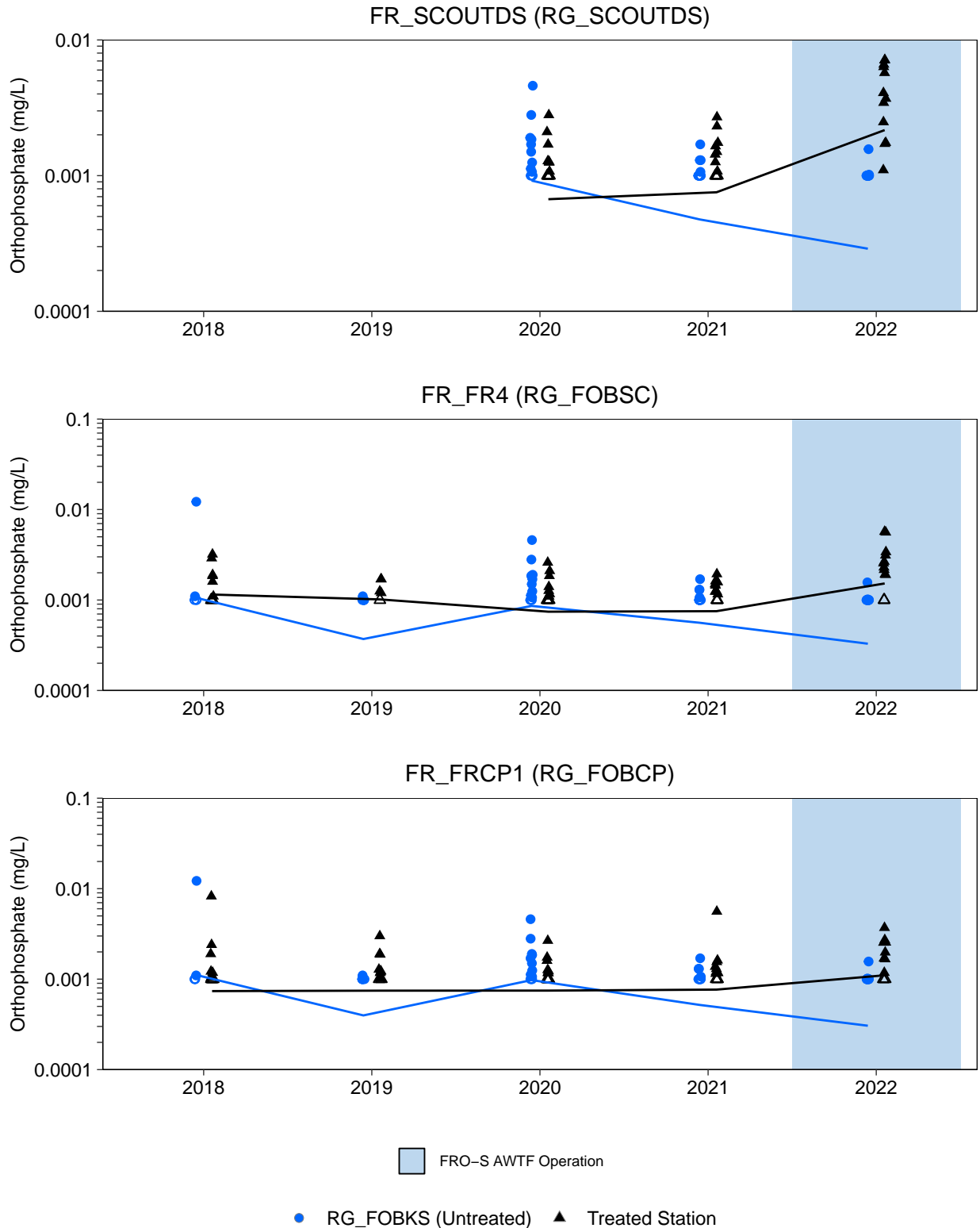


Figure D.43: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

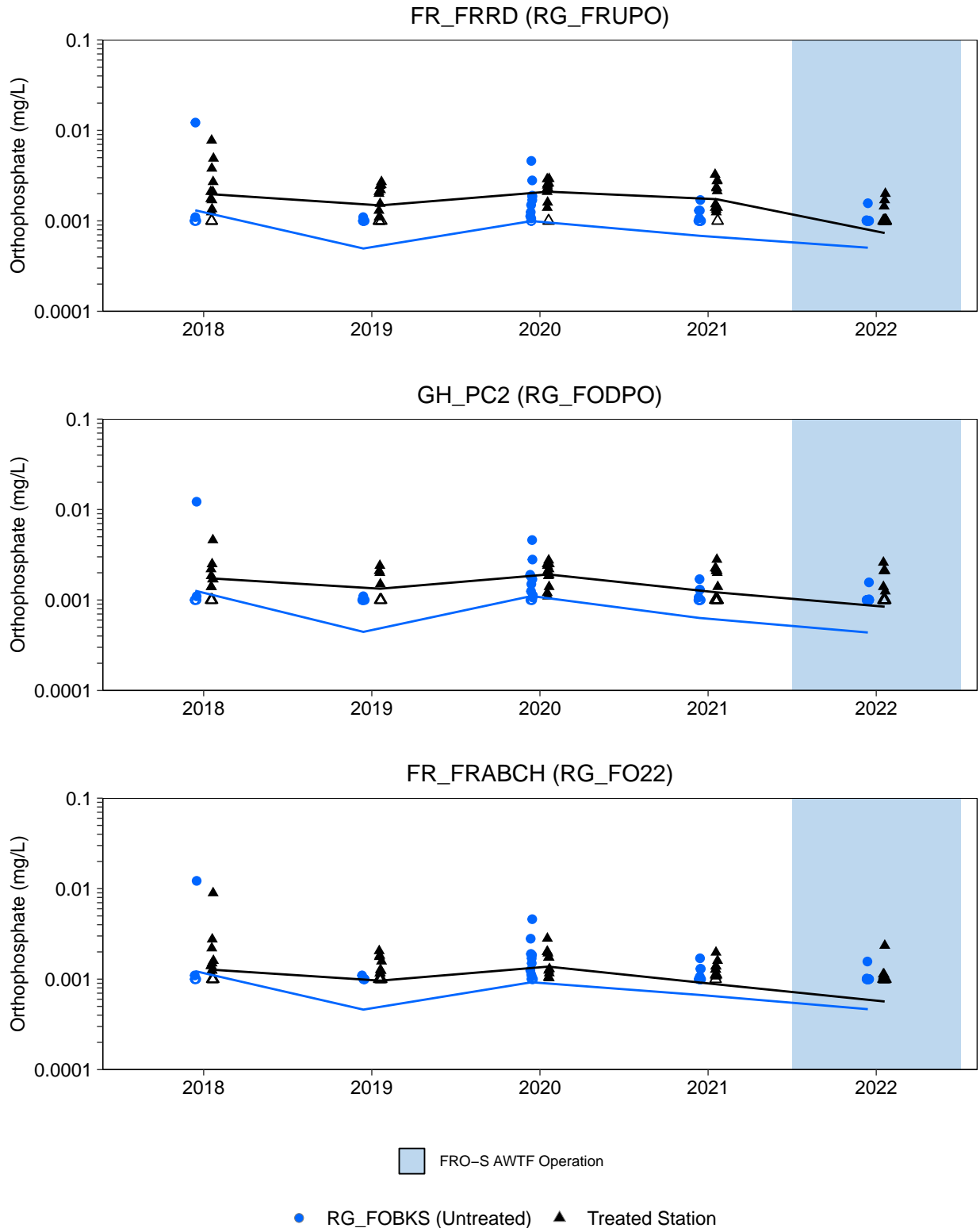


Figure D.43: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUDS was immediately downstream of the outfall.

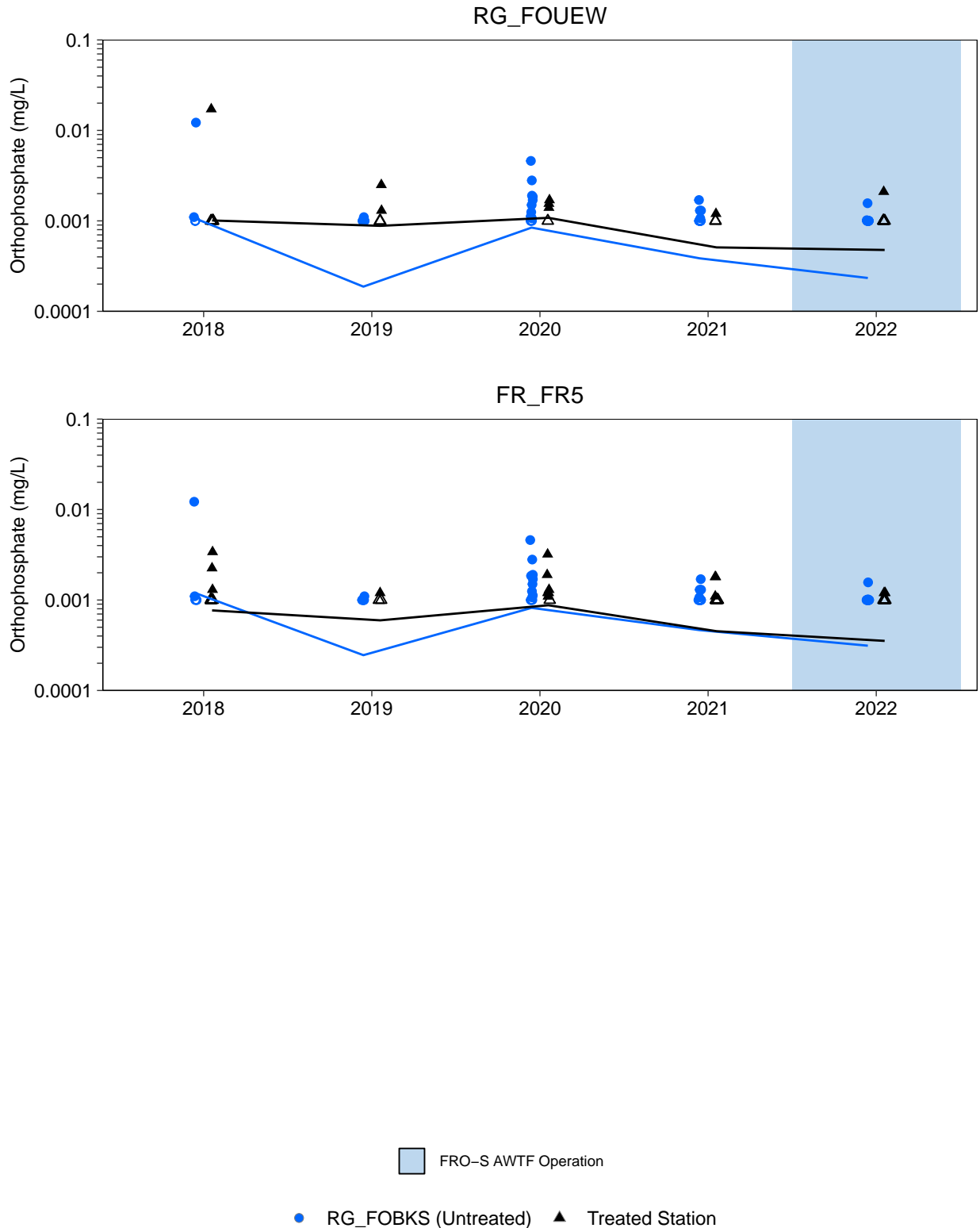


Figure D.43: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

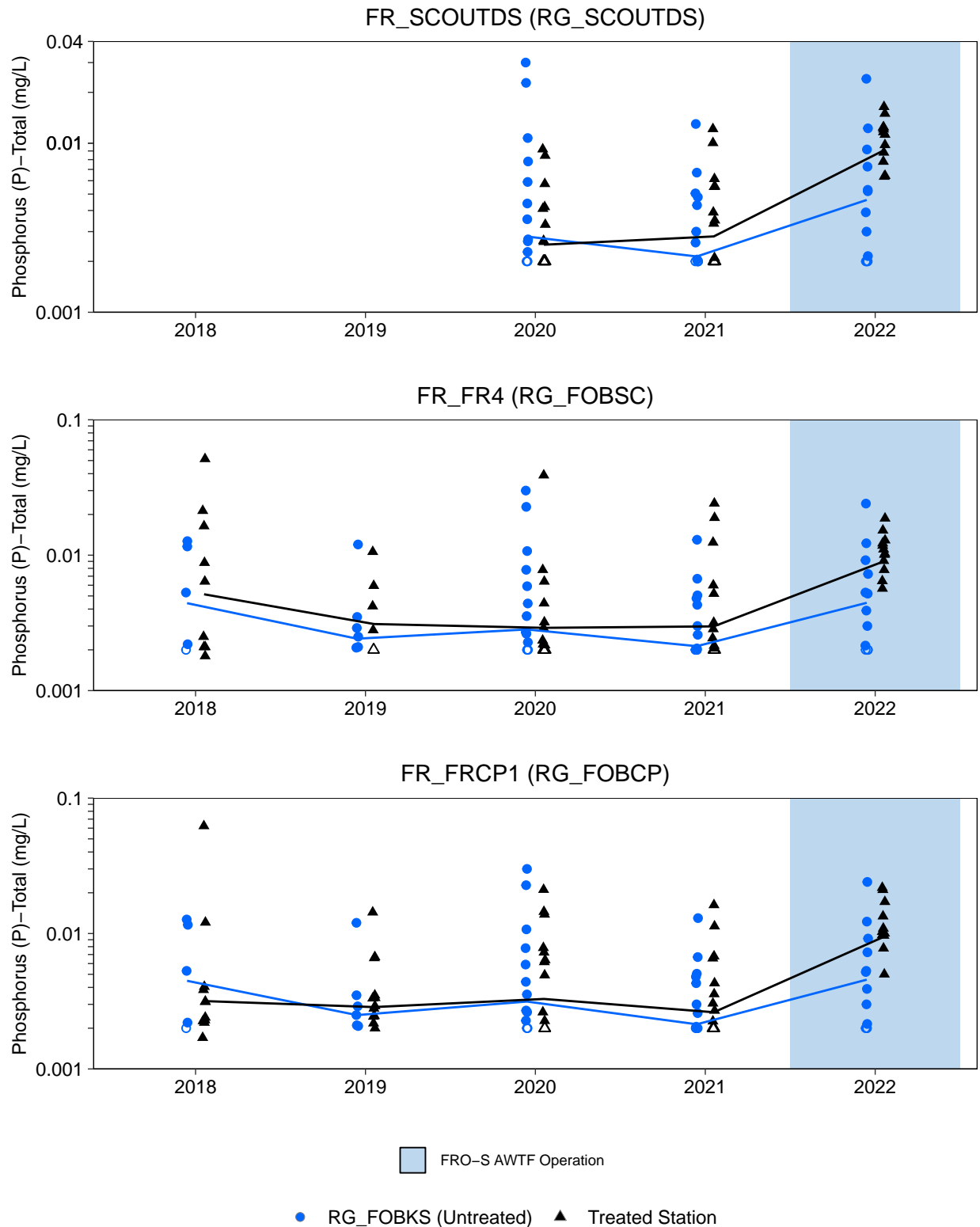


Figure D.44: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

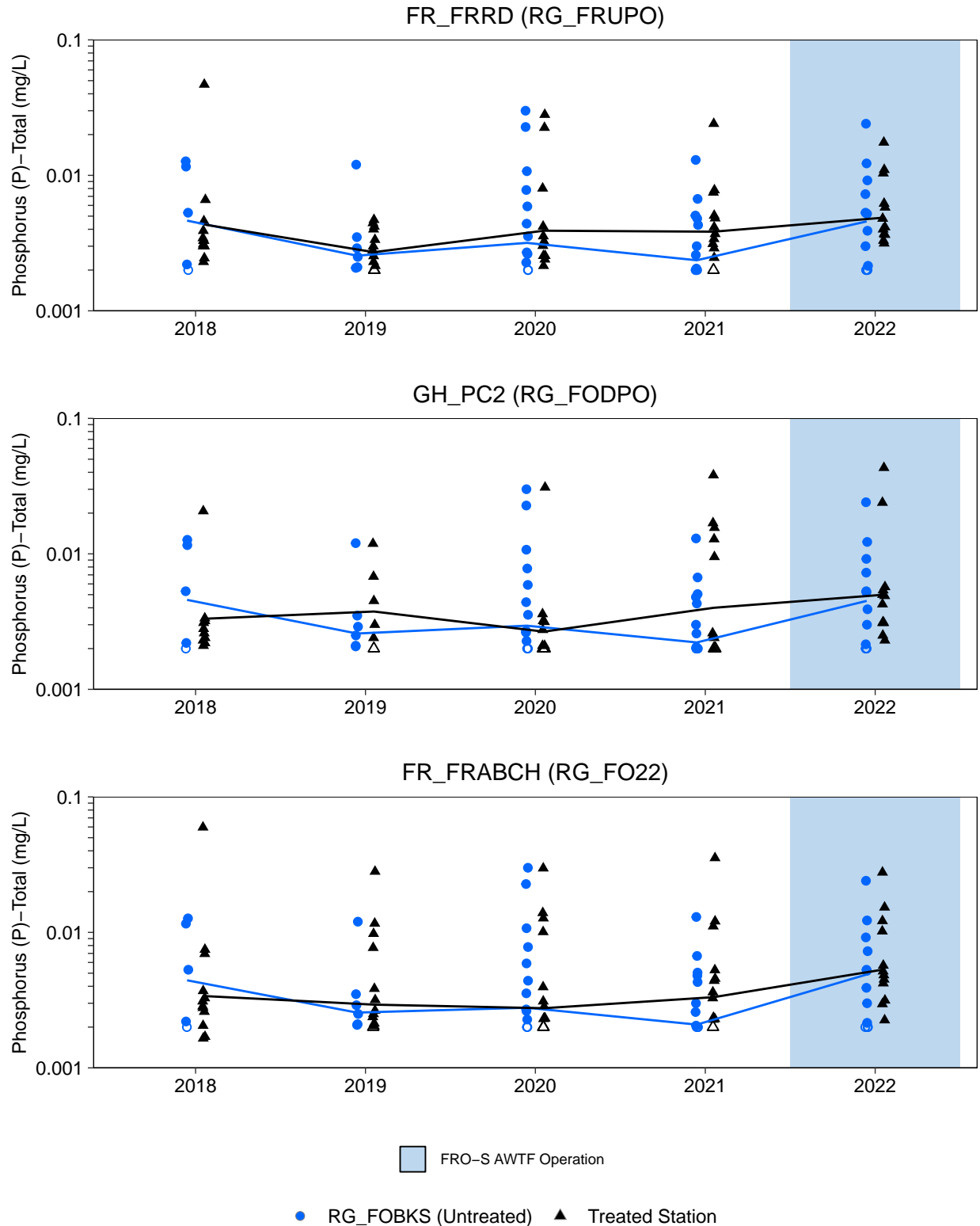


Figure D.44: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

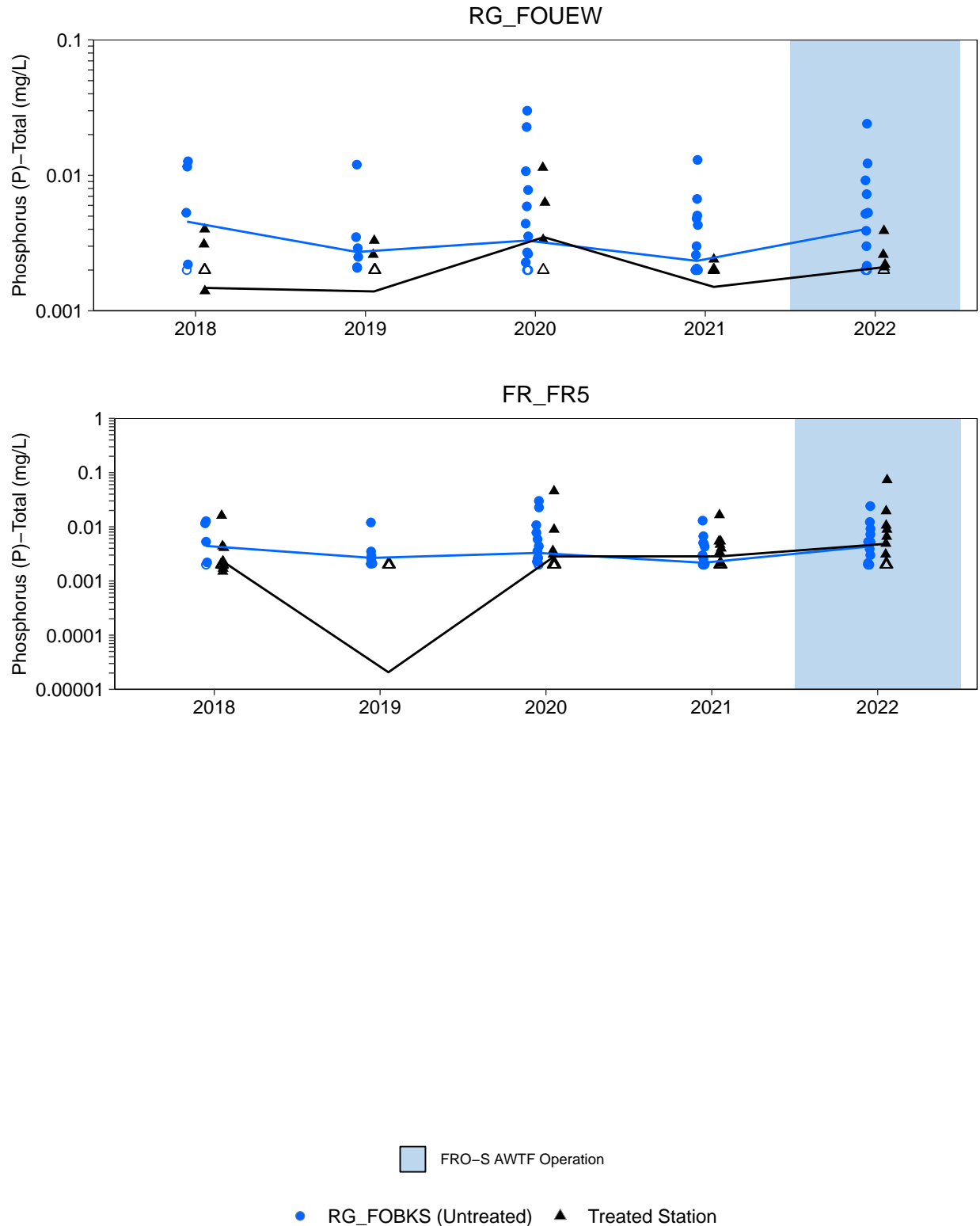


Figure D.44: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

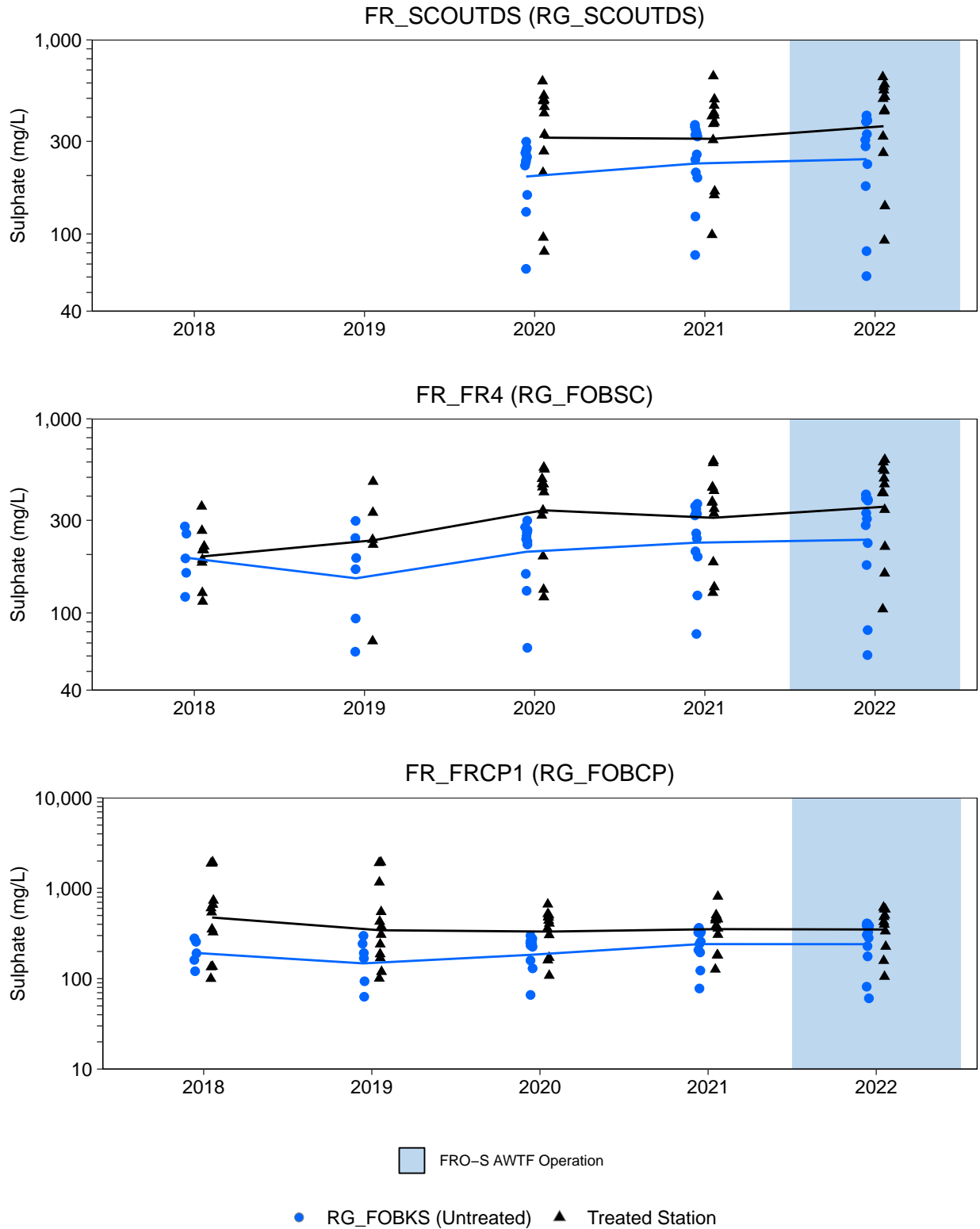


Figure D.45: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

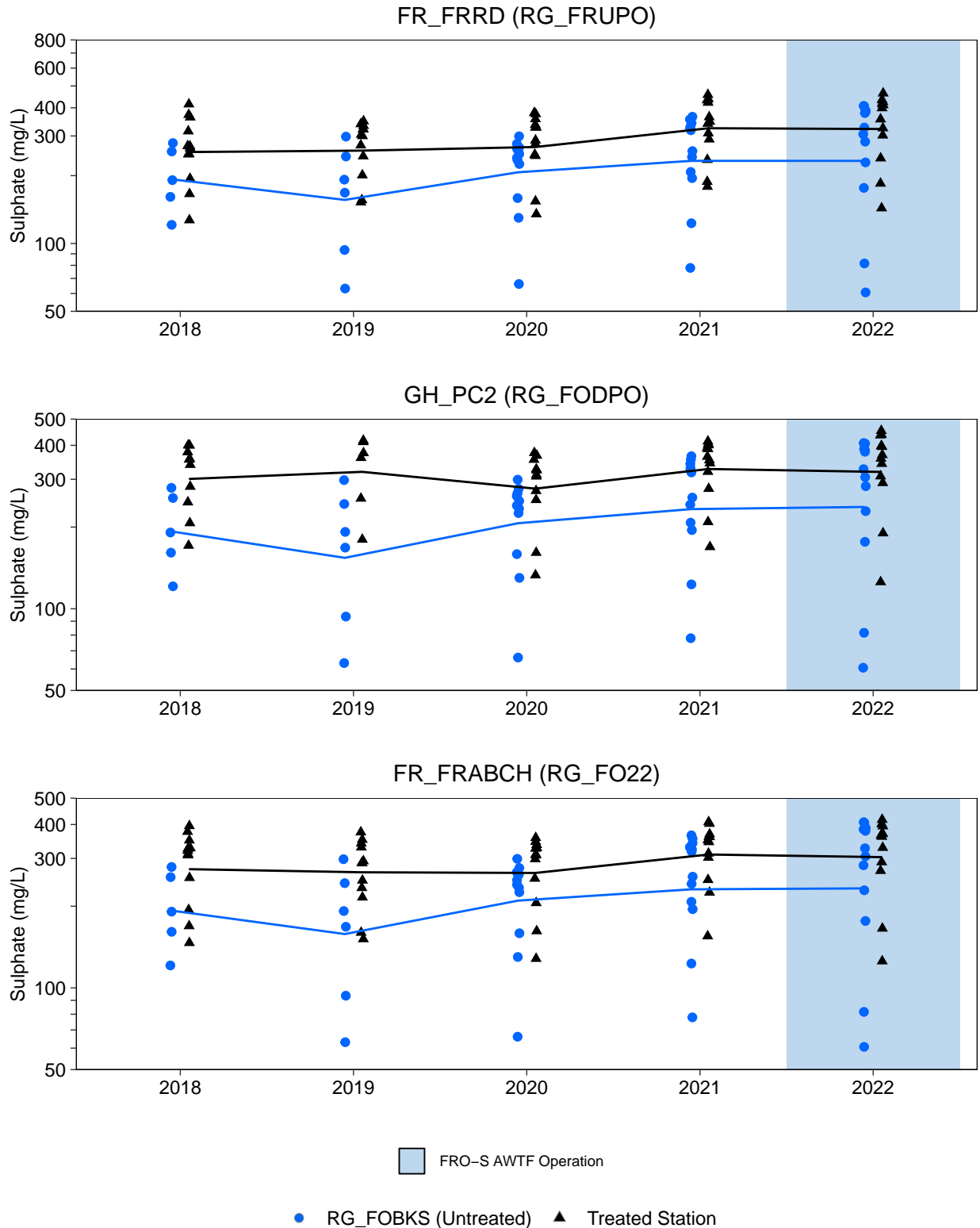


Figure D.45: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUDS was immediately downstream of the outfall.

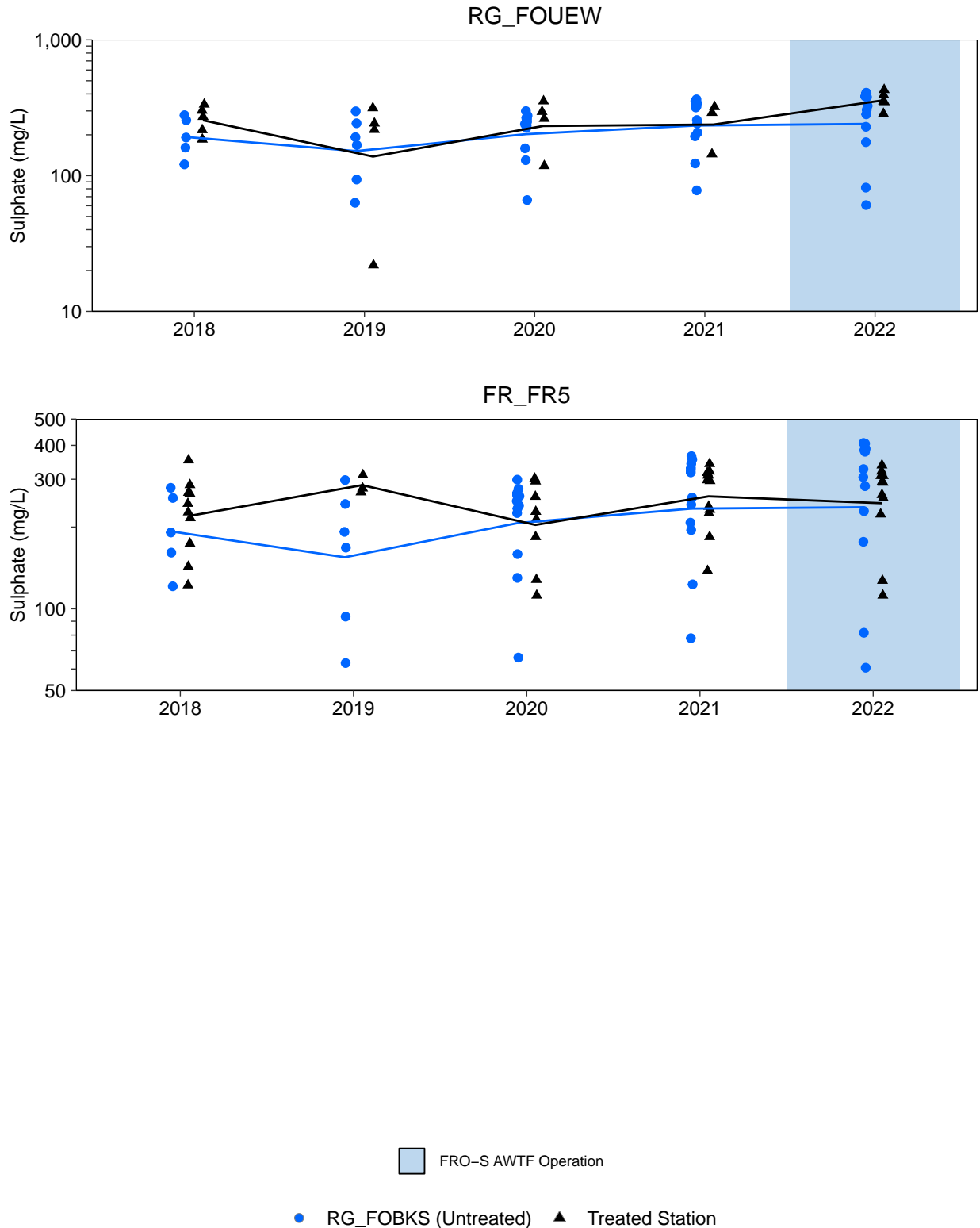


Figure D.45: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

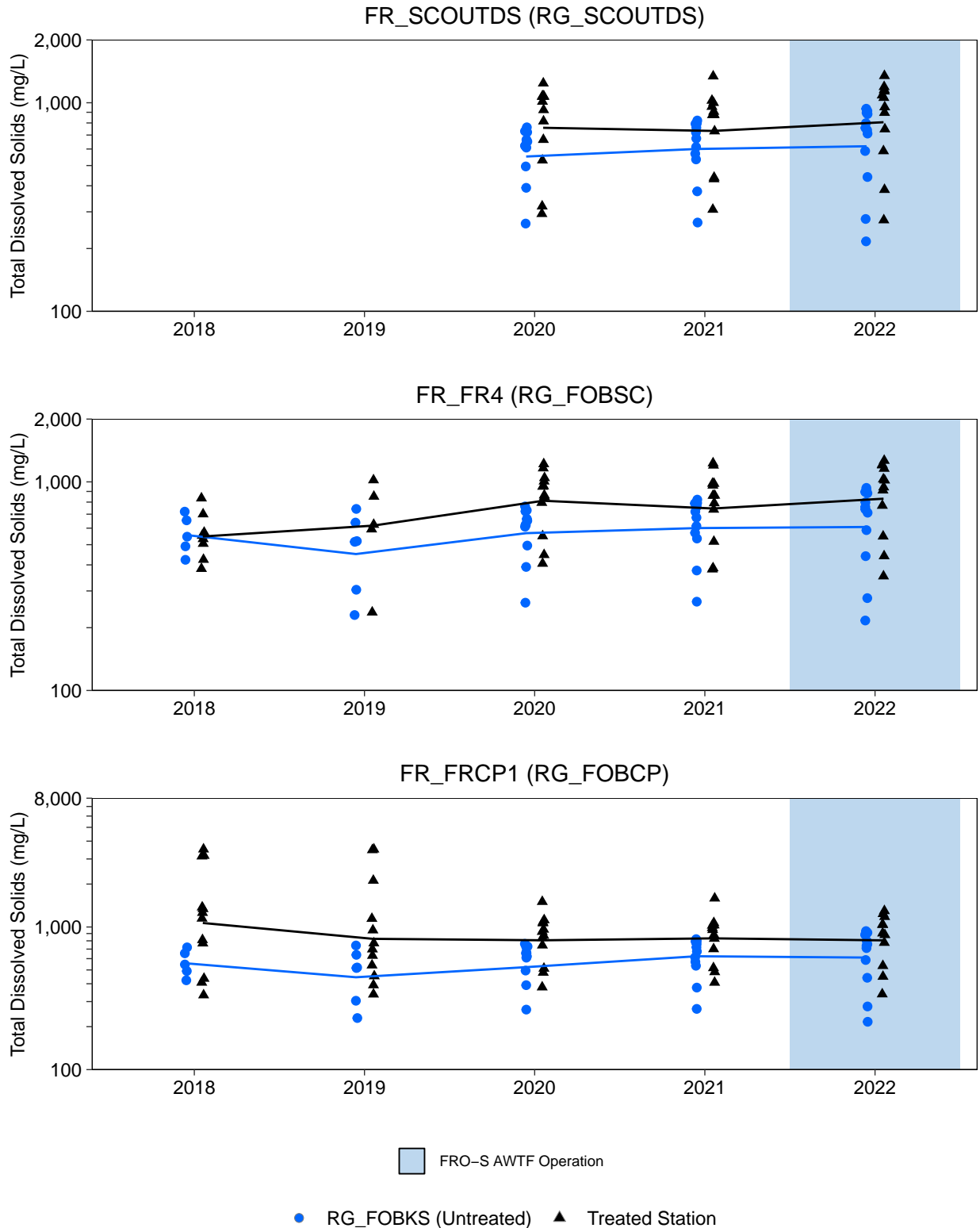


Figure D.46: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

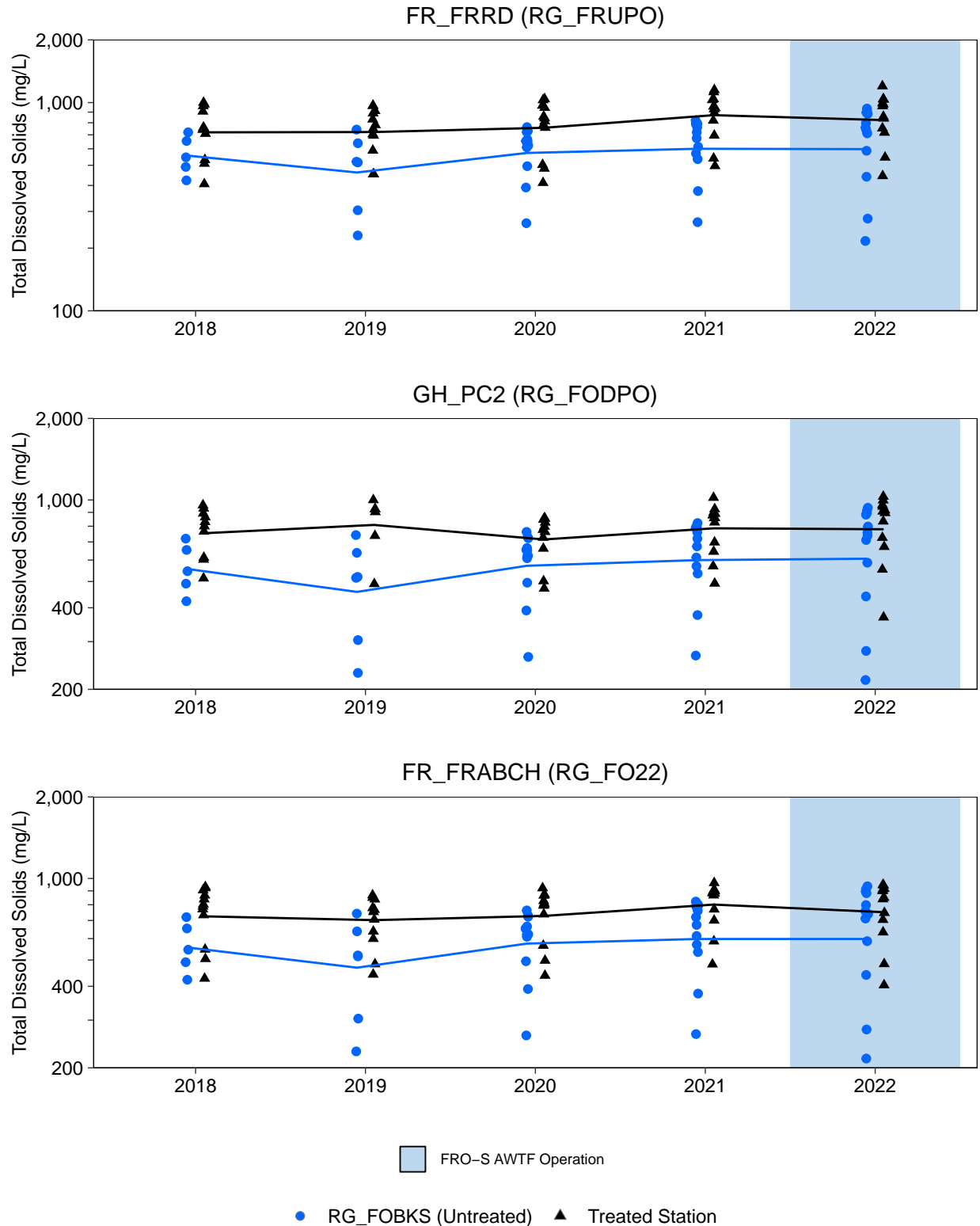


Figure D.46: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

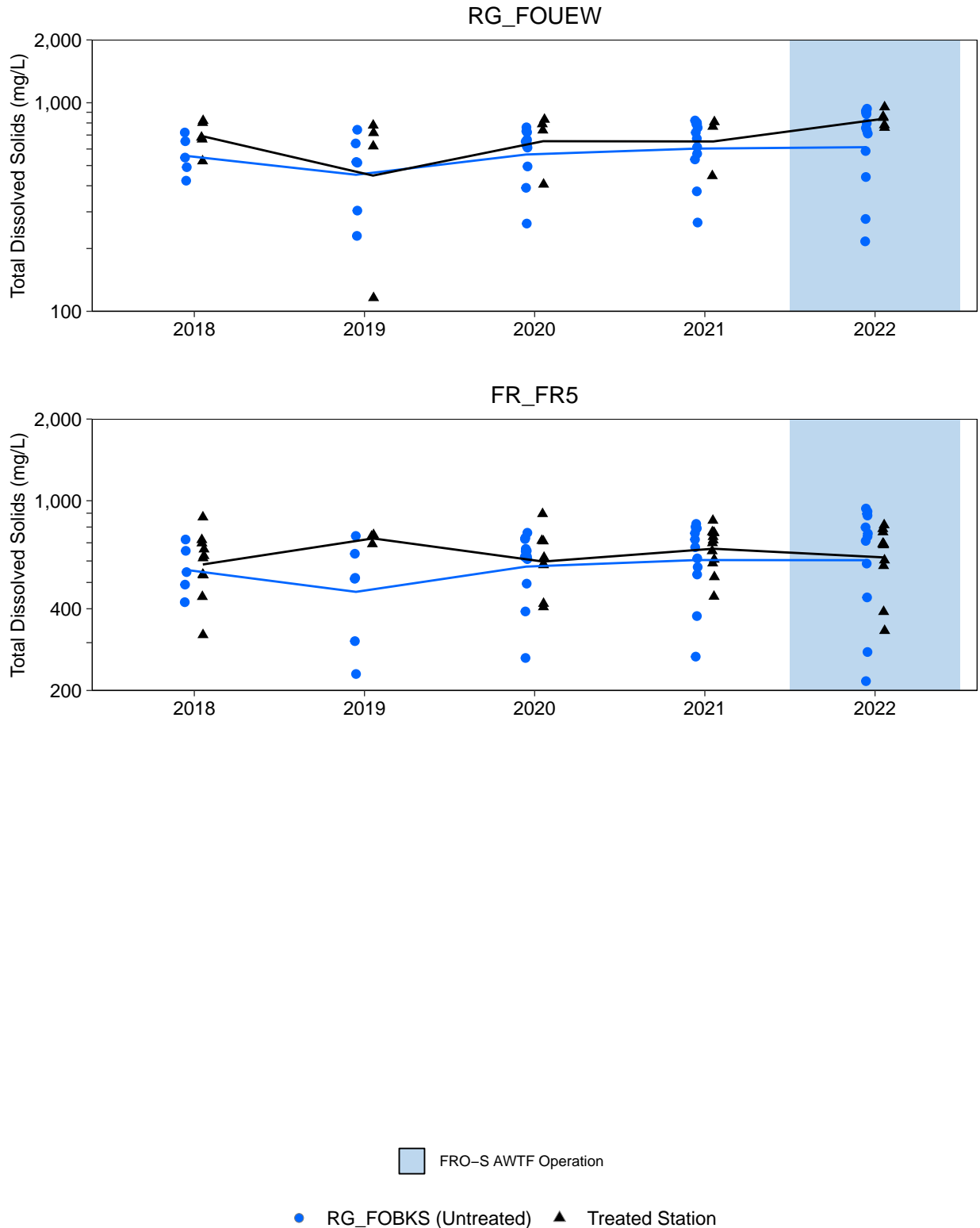


Figure D.46: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

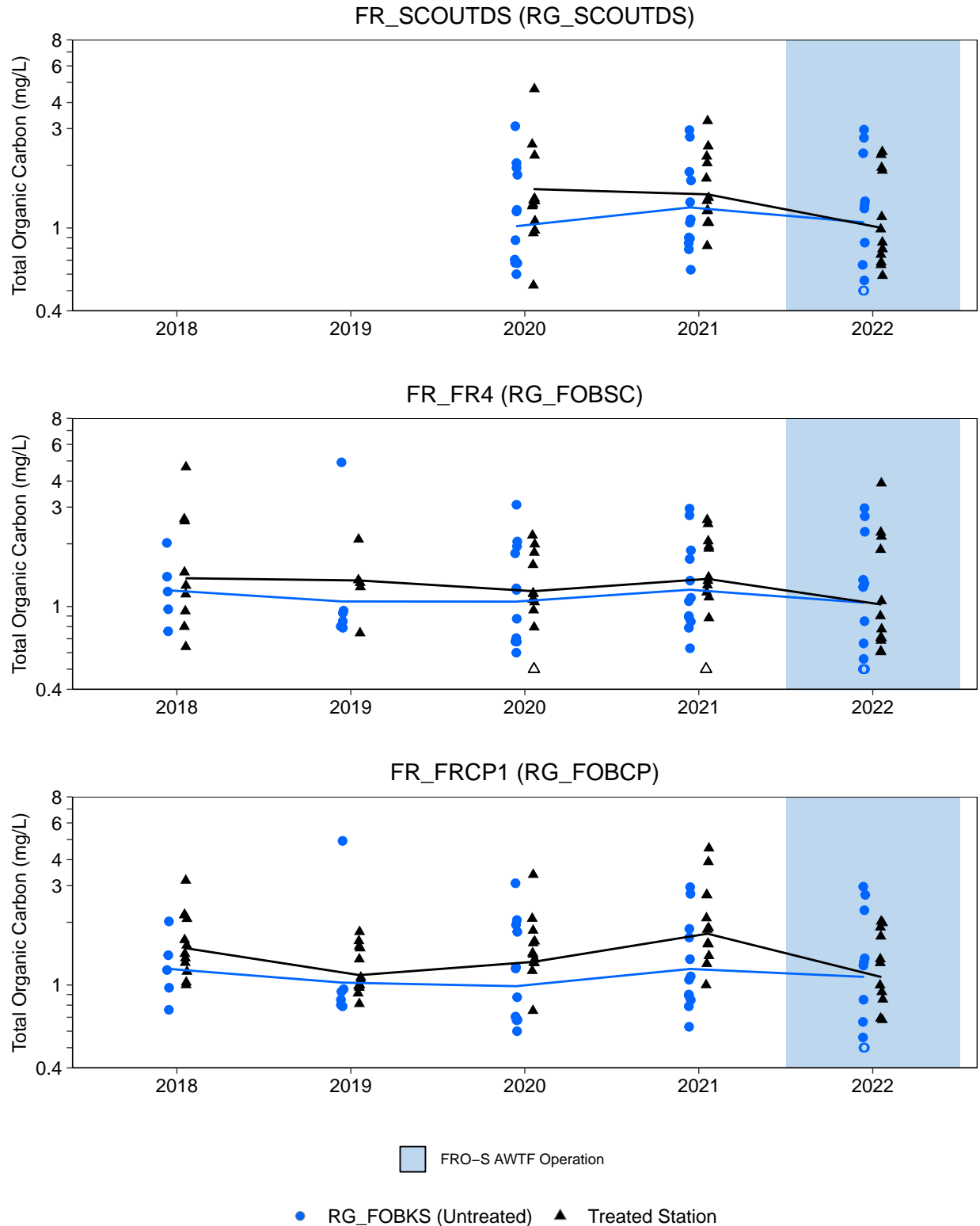


Figure D.47: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

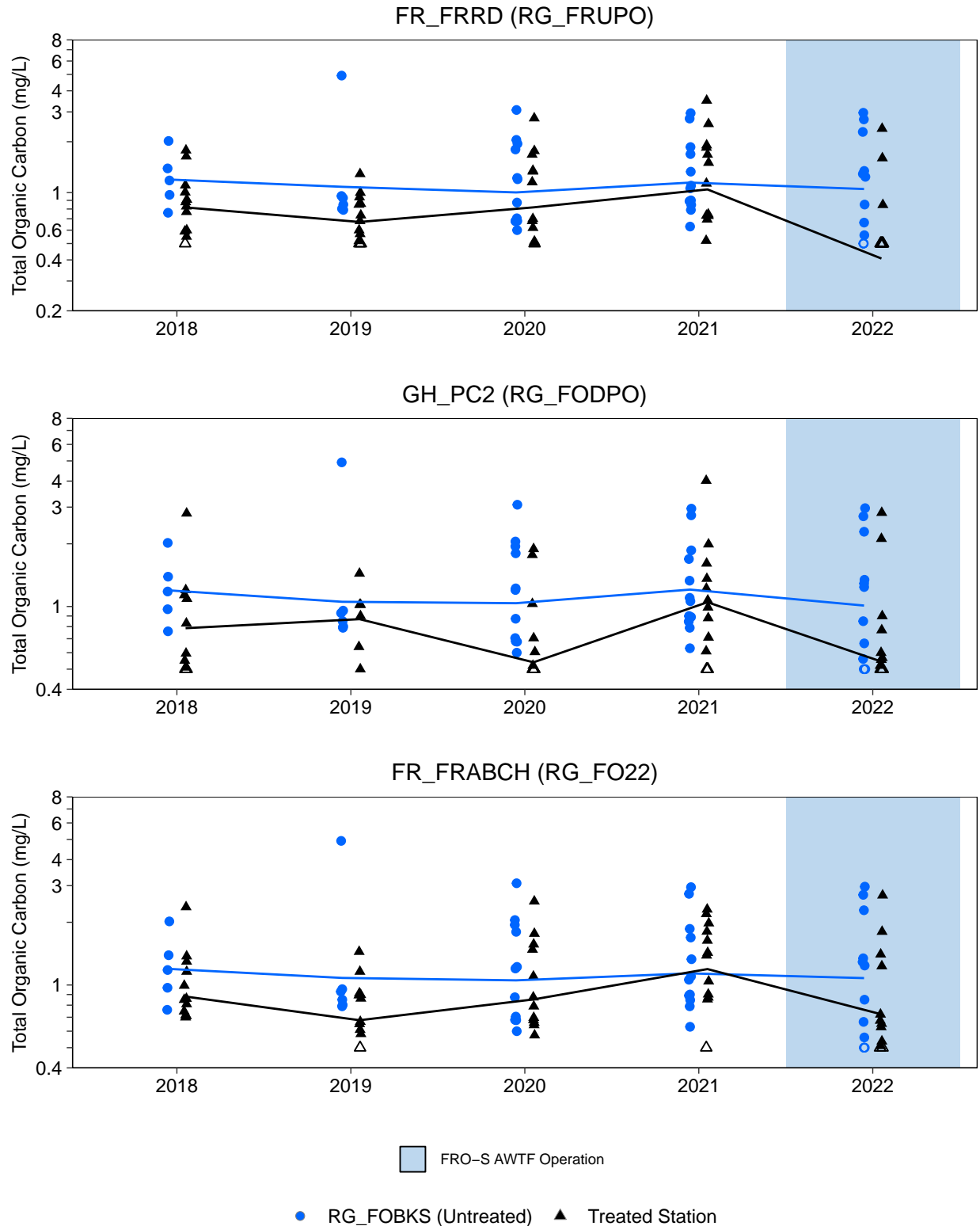


Figure D.47: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

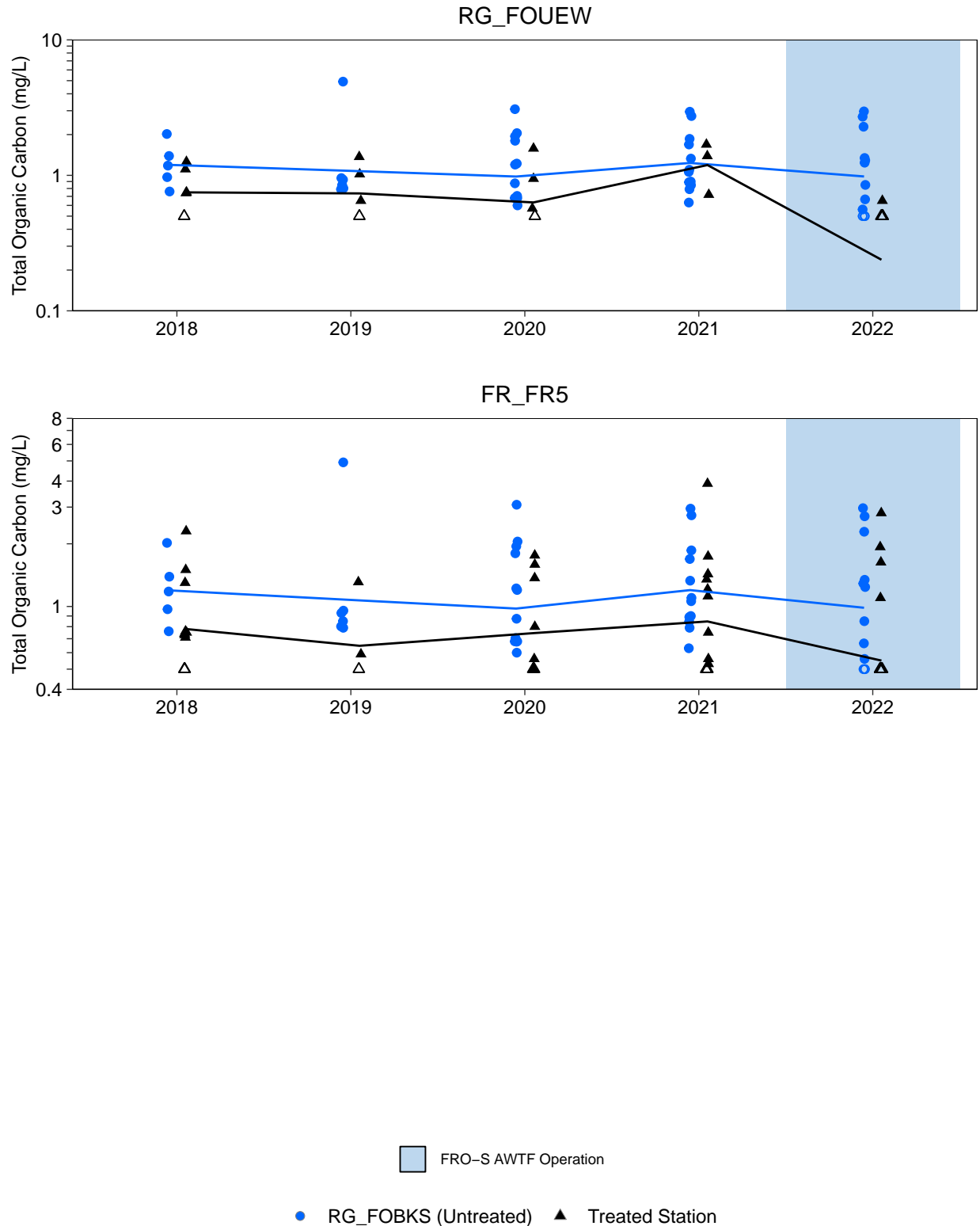


Figure D.47: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

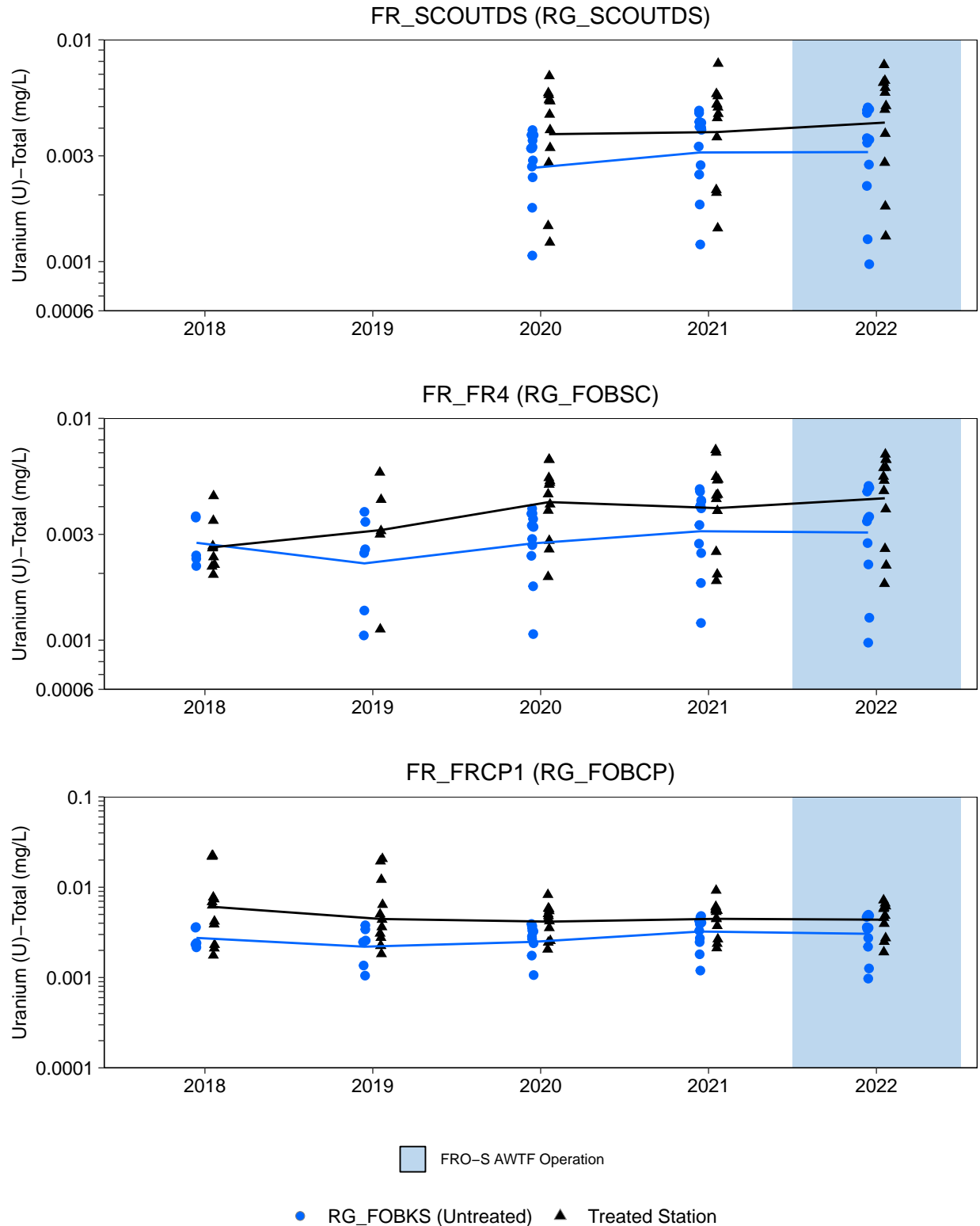


Figure D.48: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

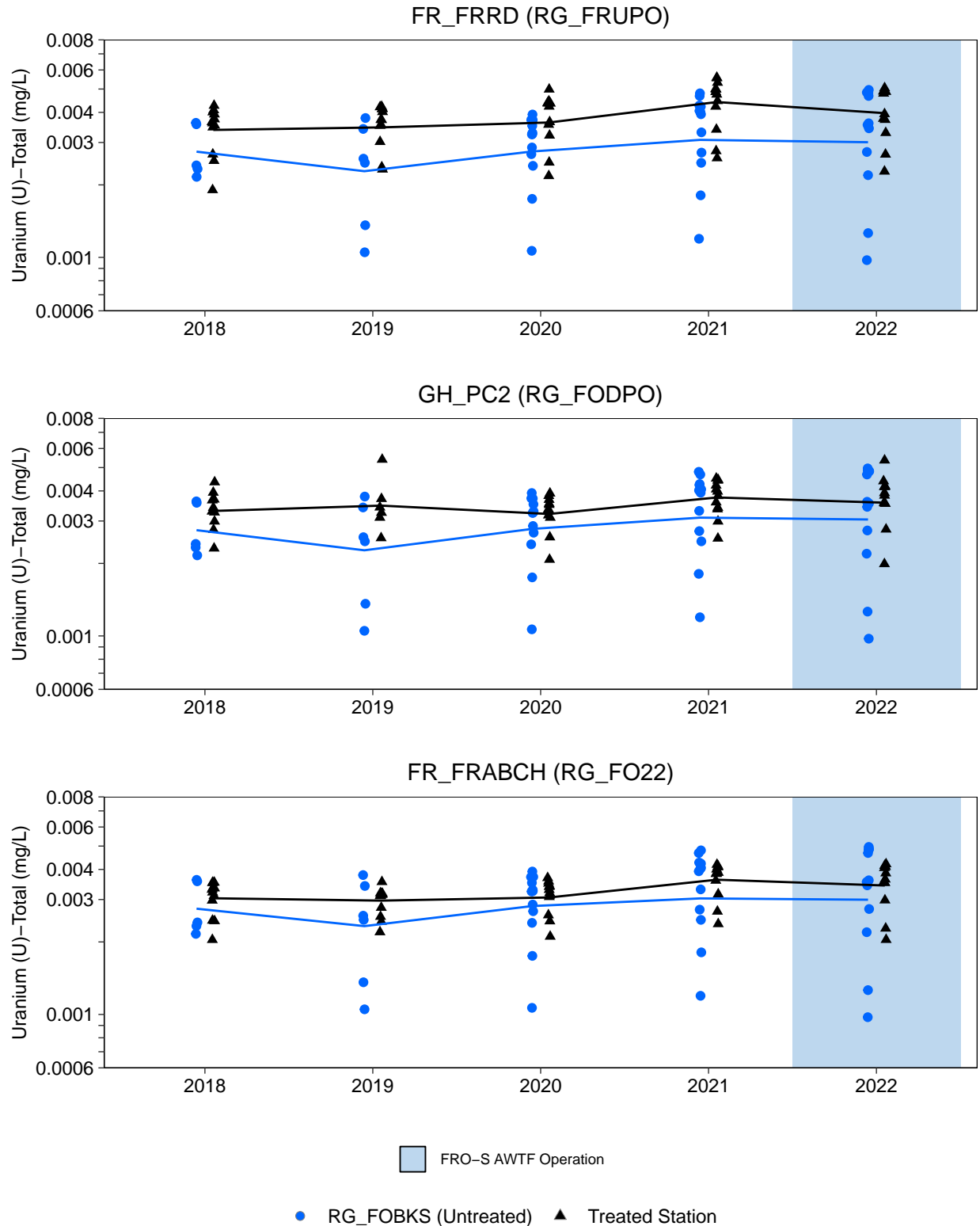


Figure D.48: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

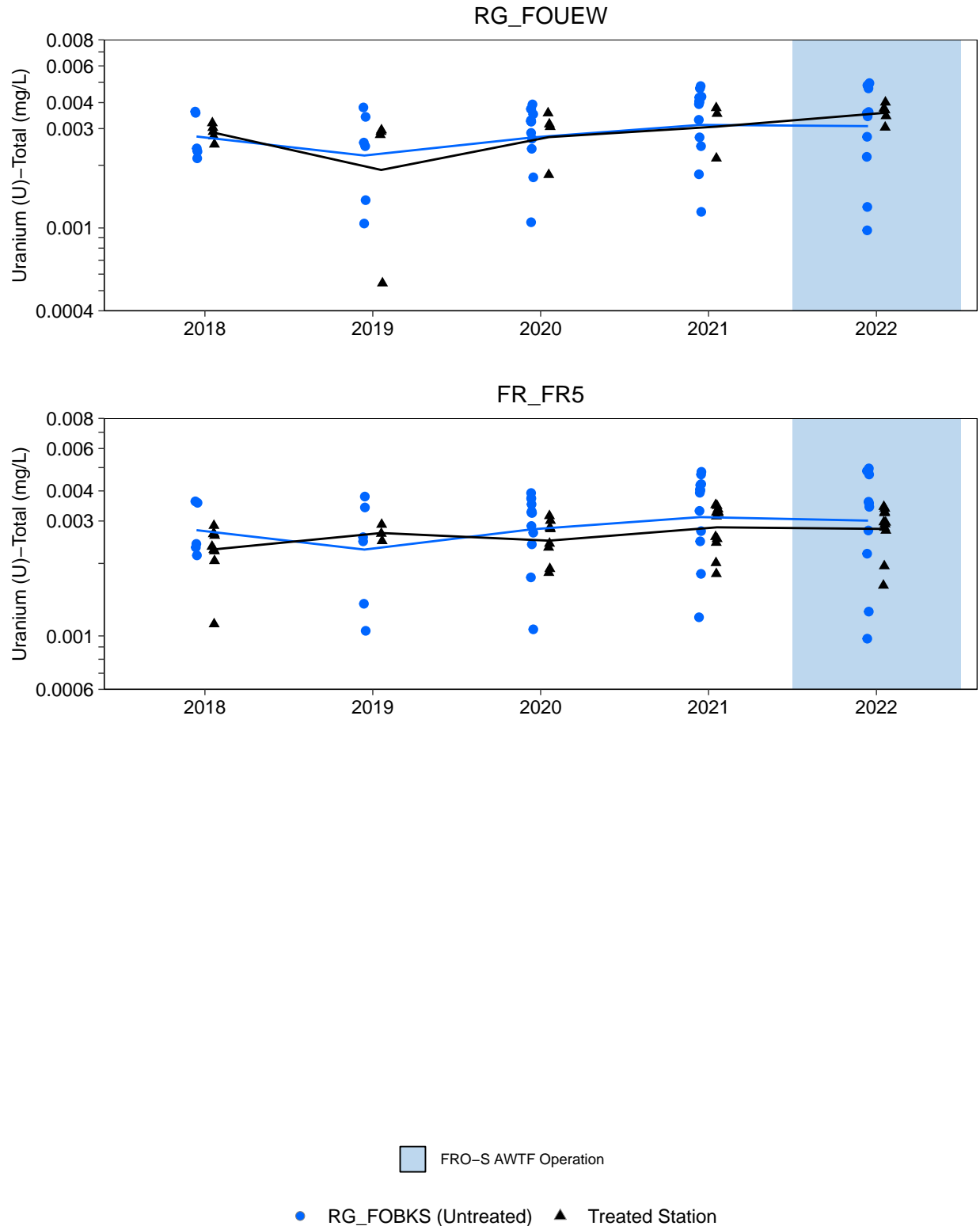


Figure D.48: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

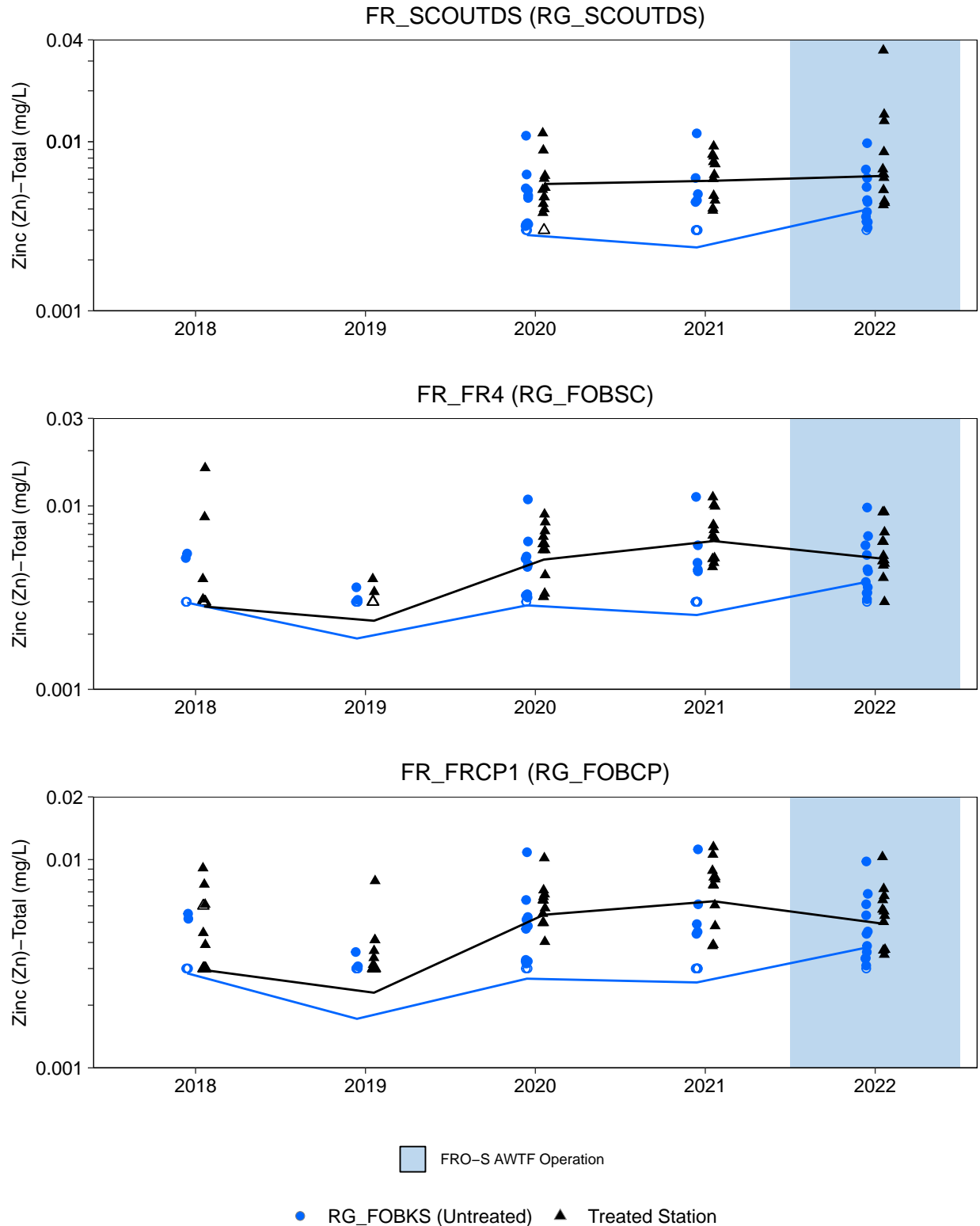


Figure D.49: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

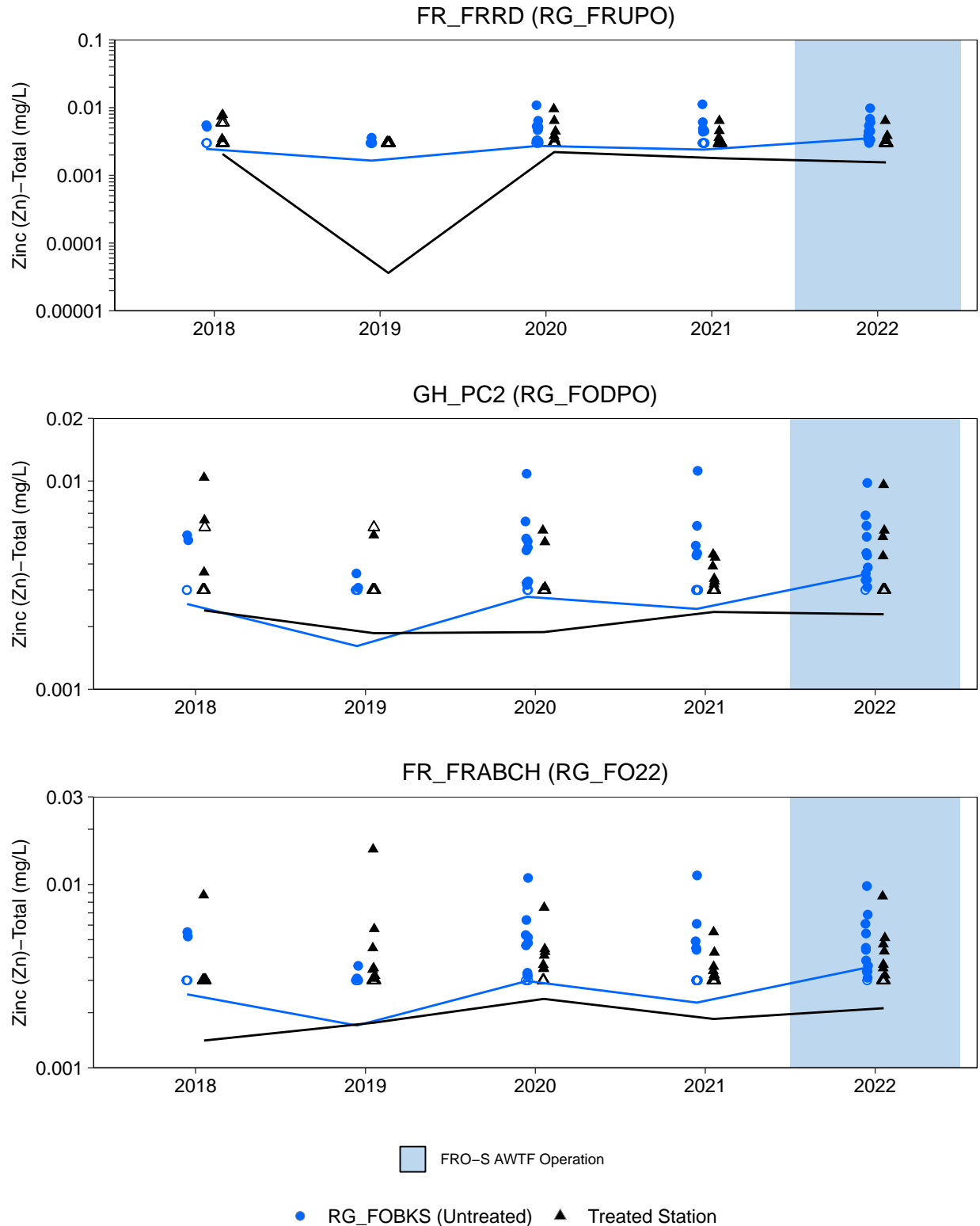


Figure D.49: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

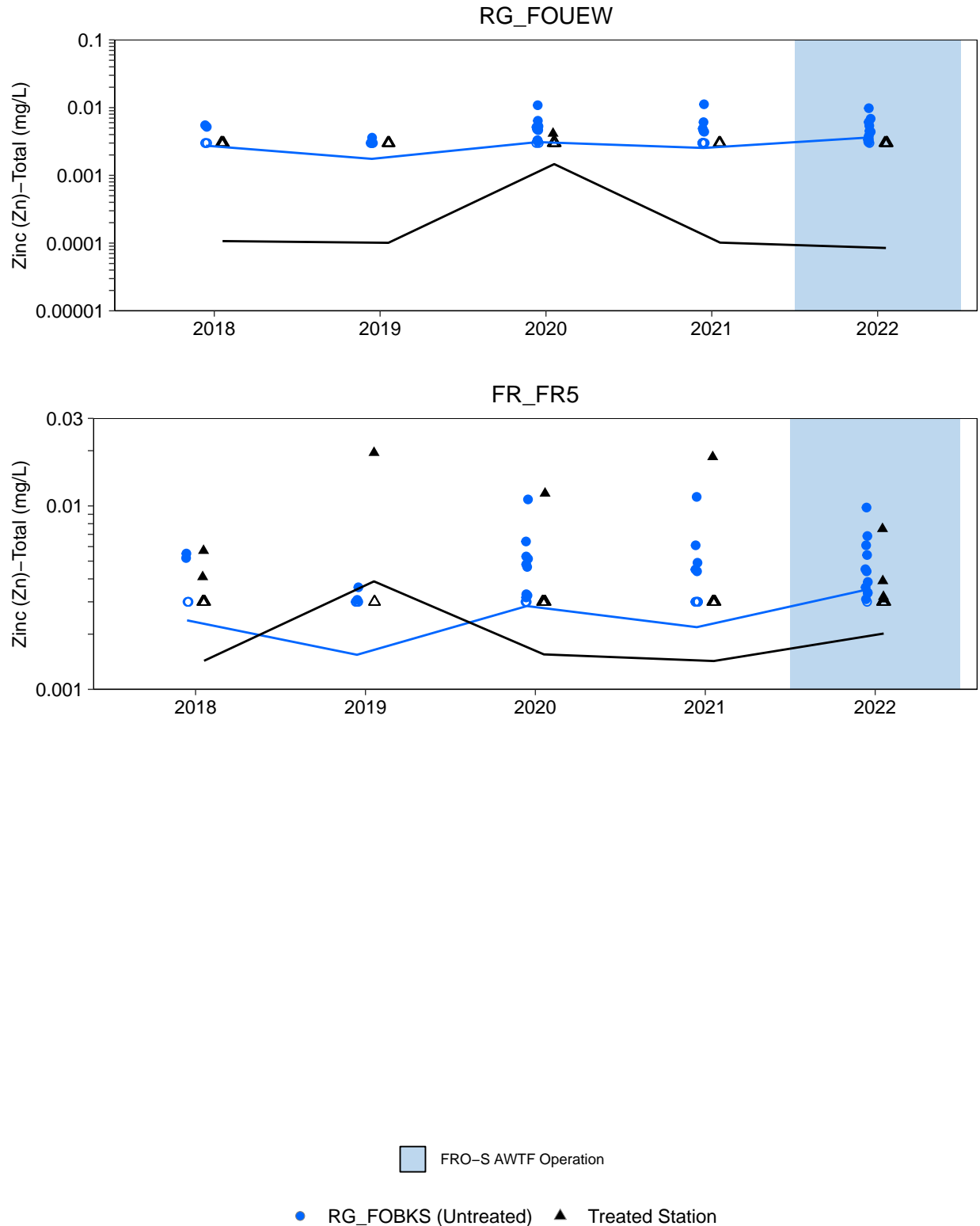


Figure D.49: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

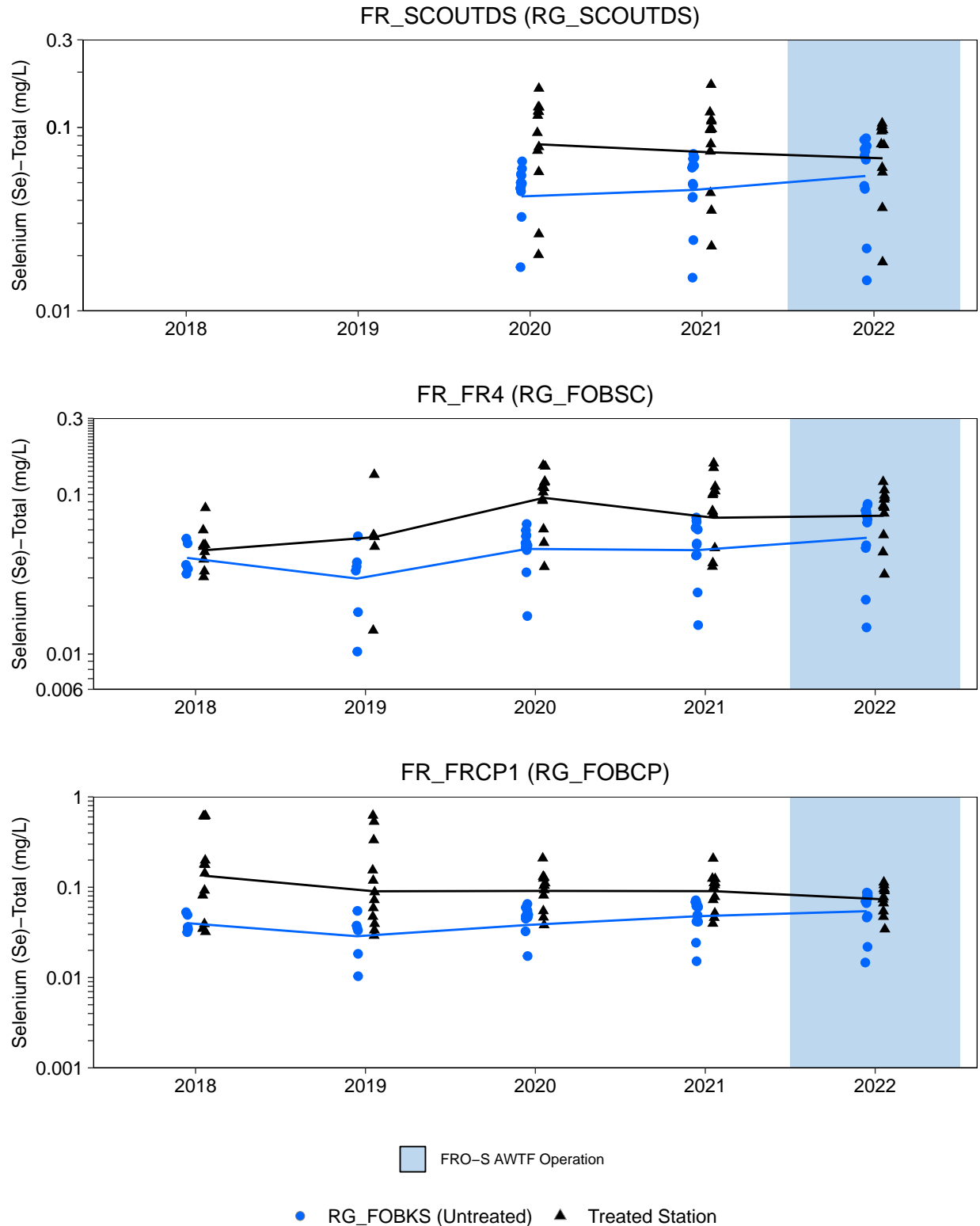


Figure D.50: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

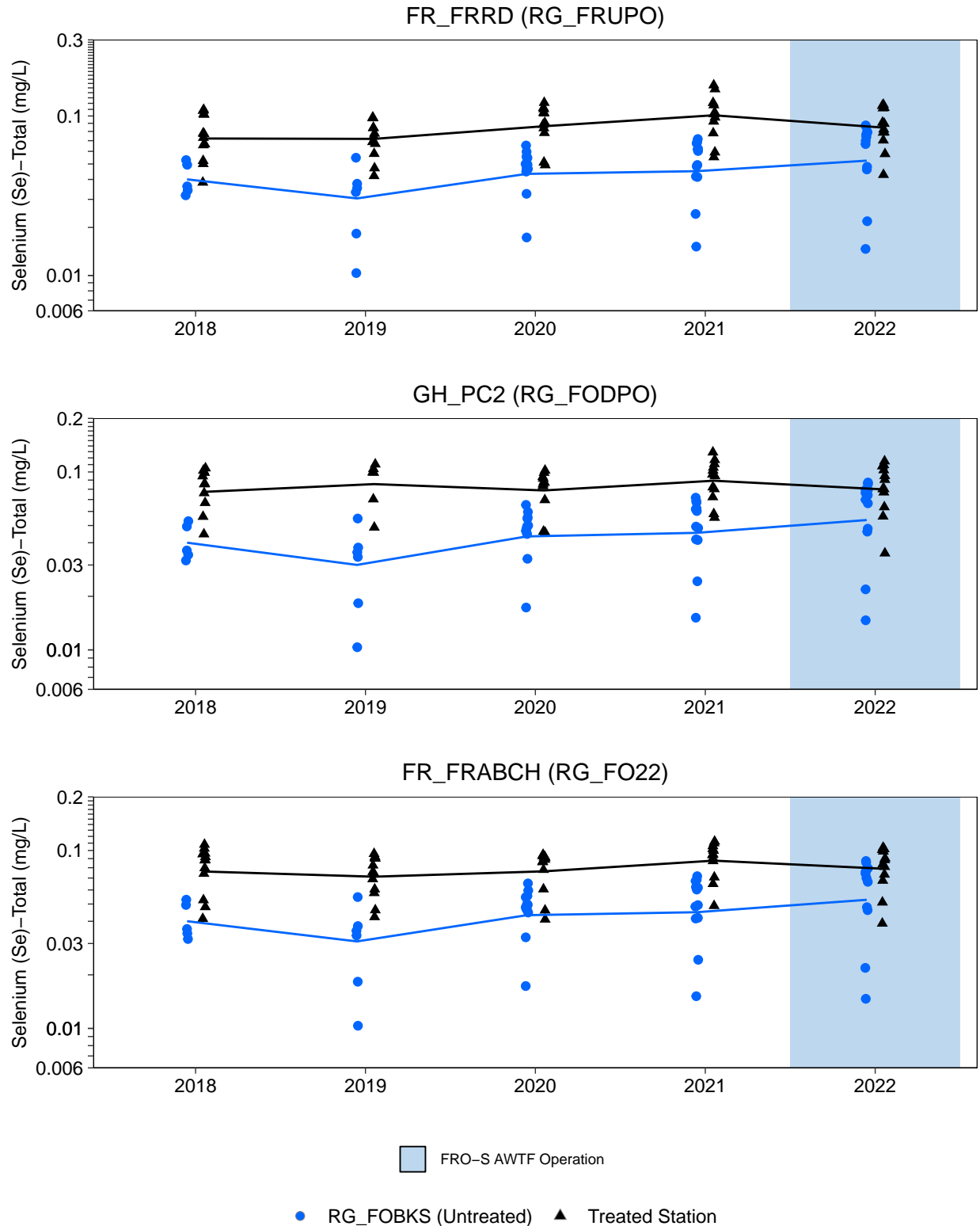


Figure D.50: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

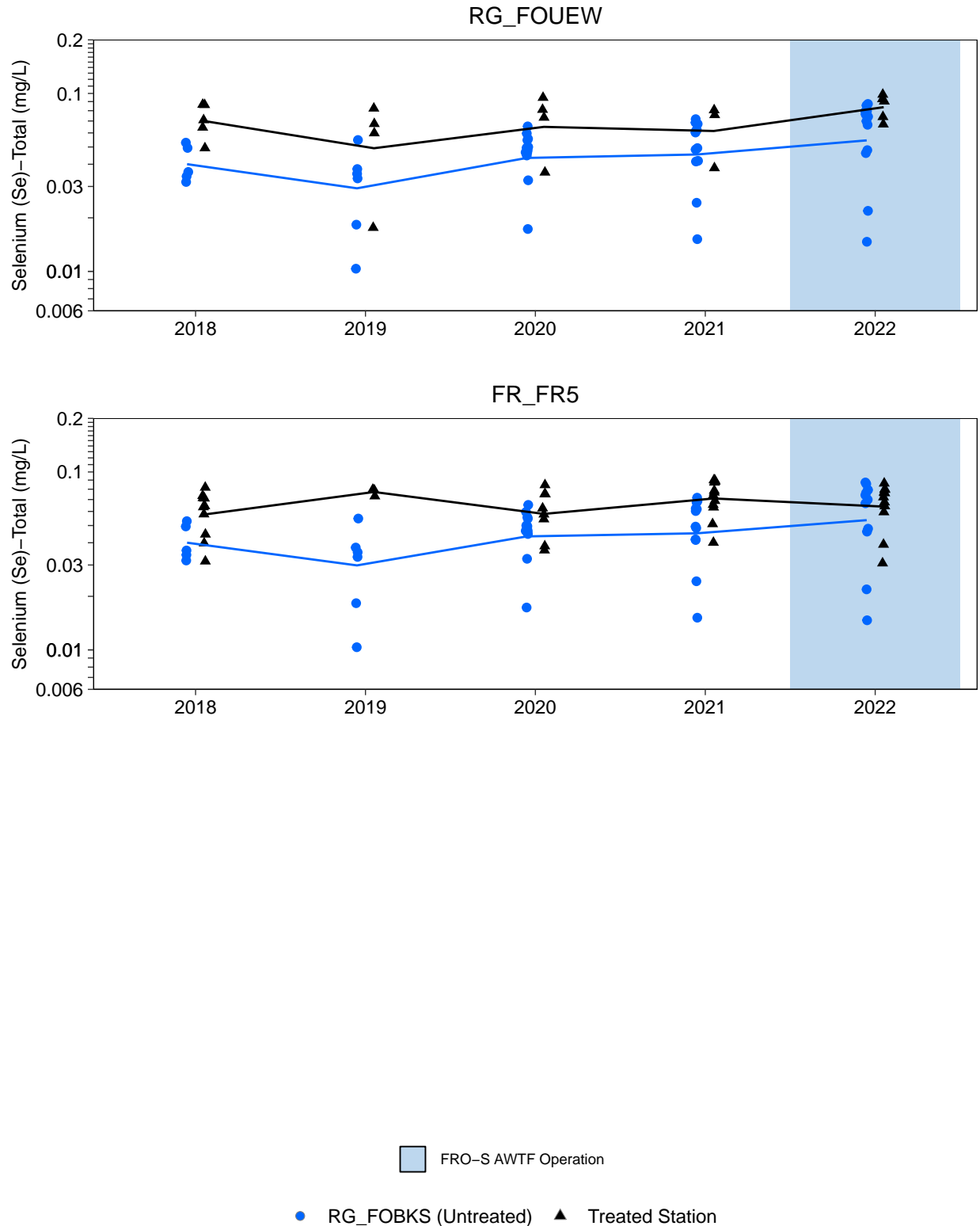


Figure D.50: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

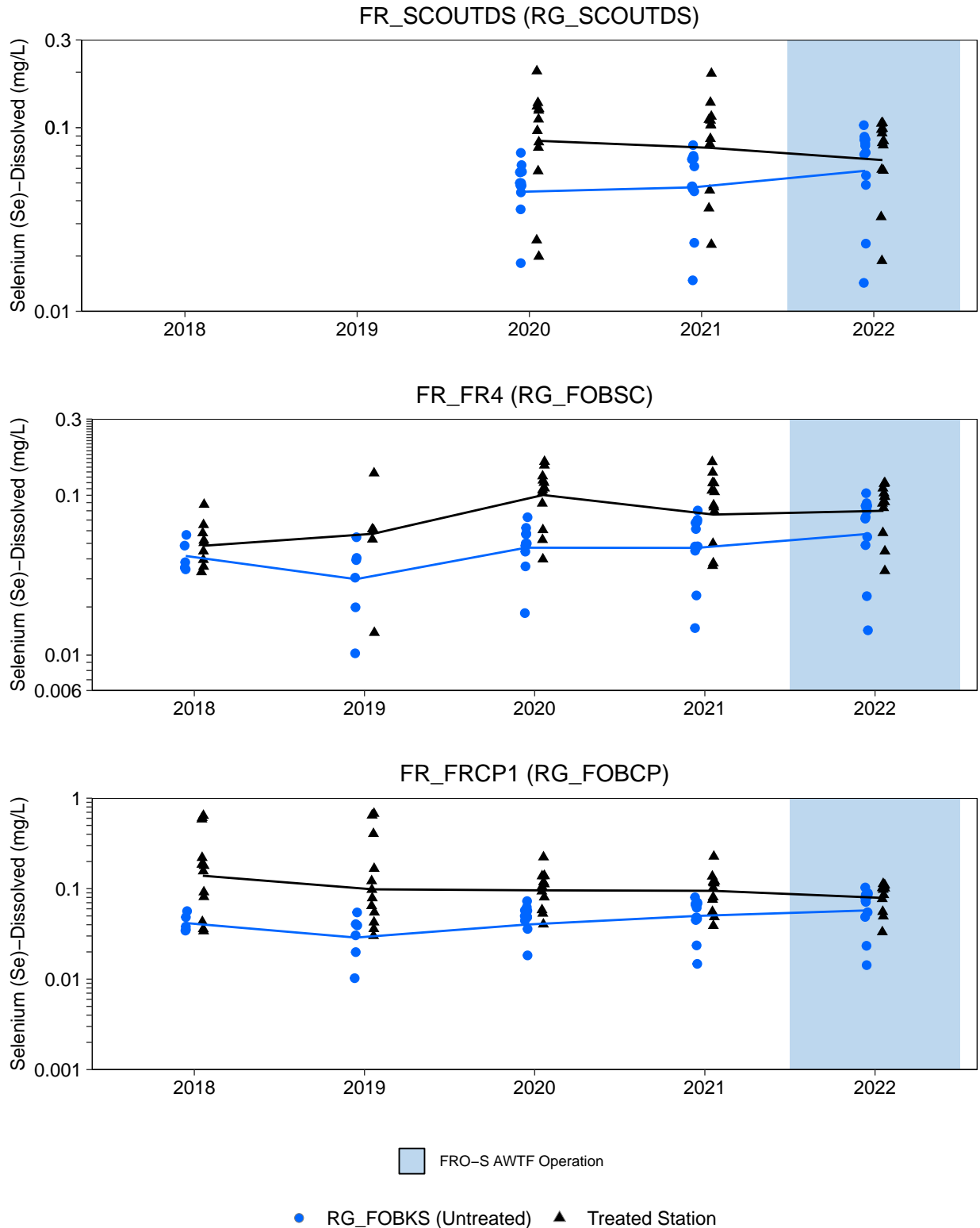


Figure D.51: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

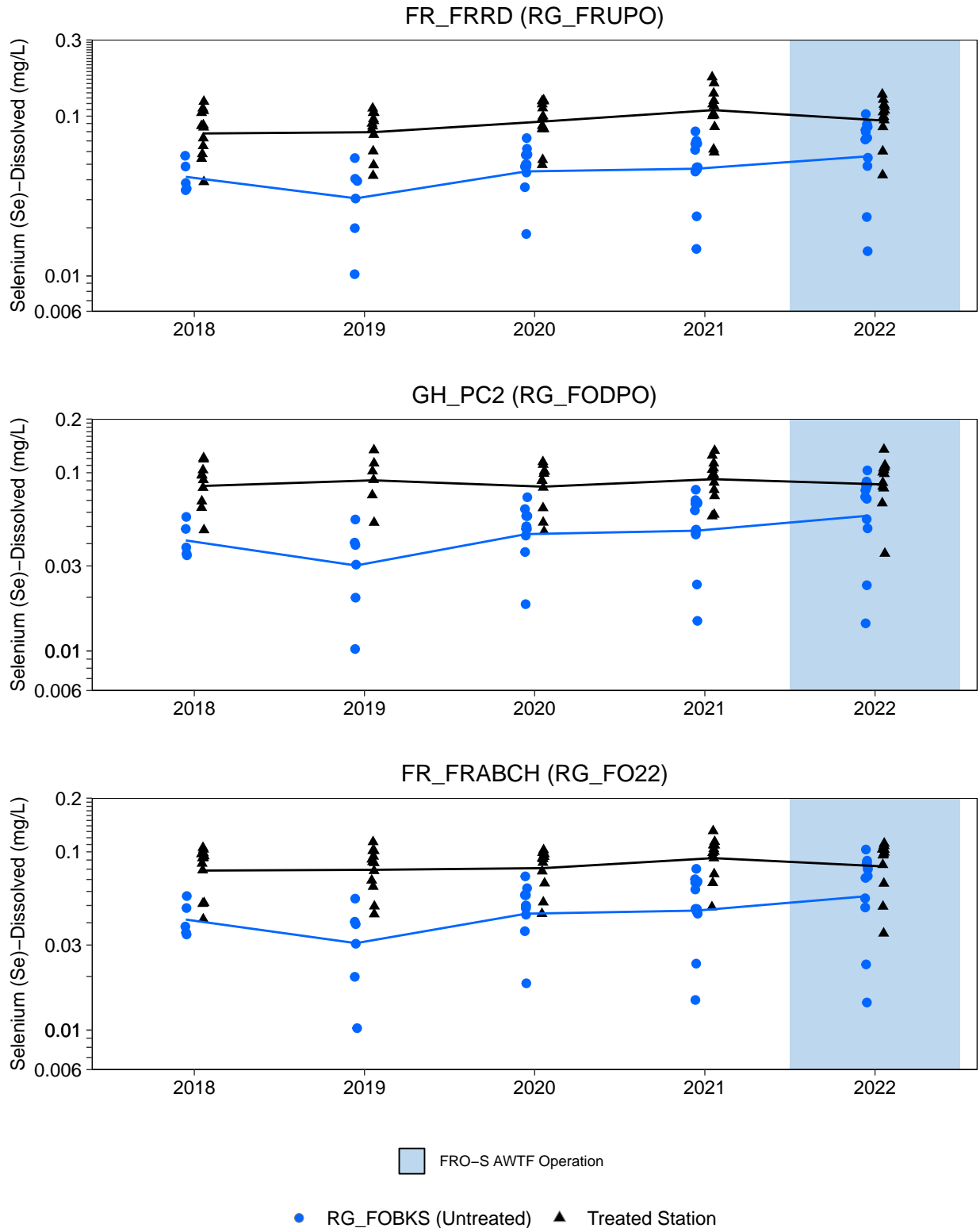


Figure D.51: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

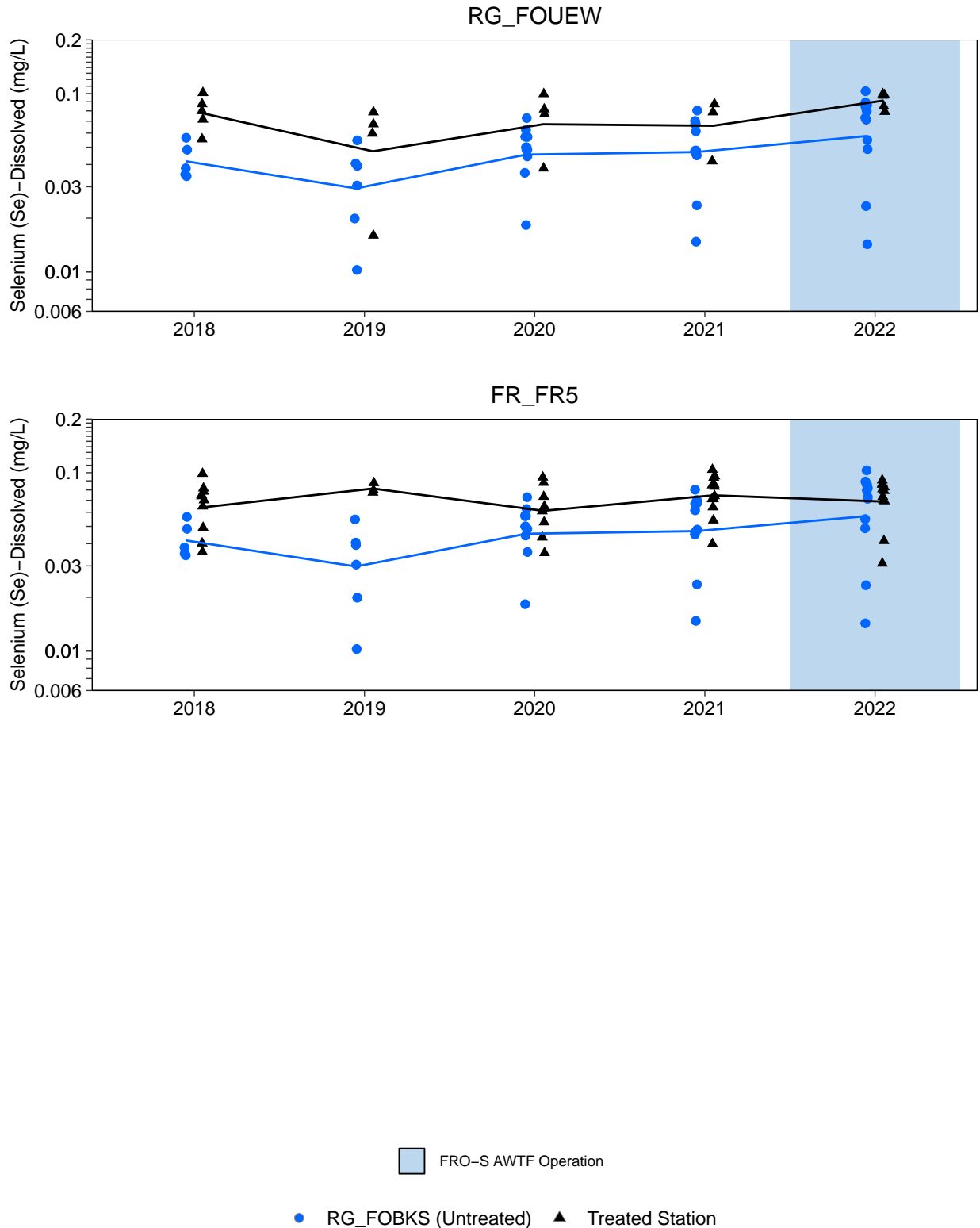


Figure D.51: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

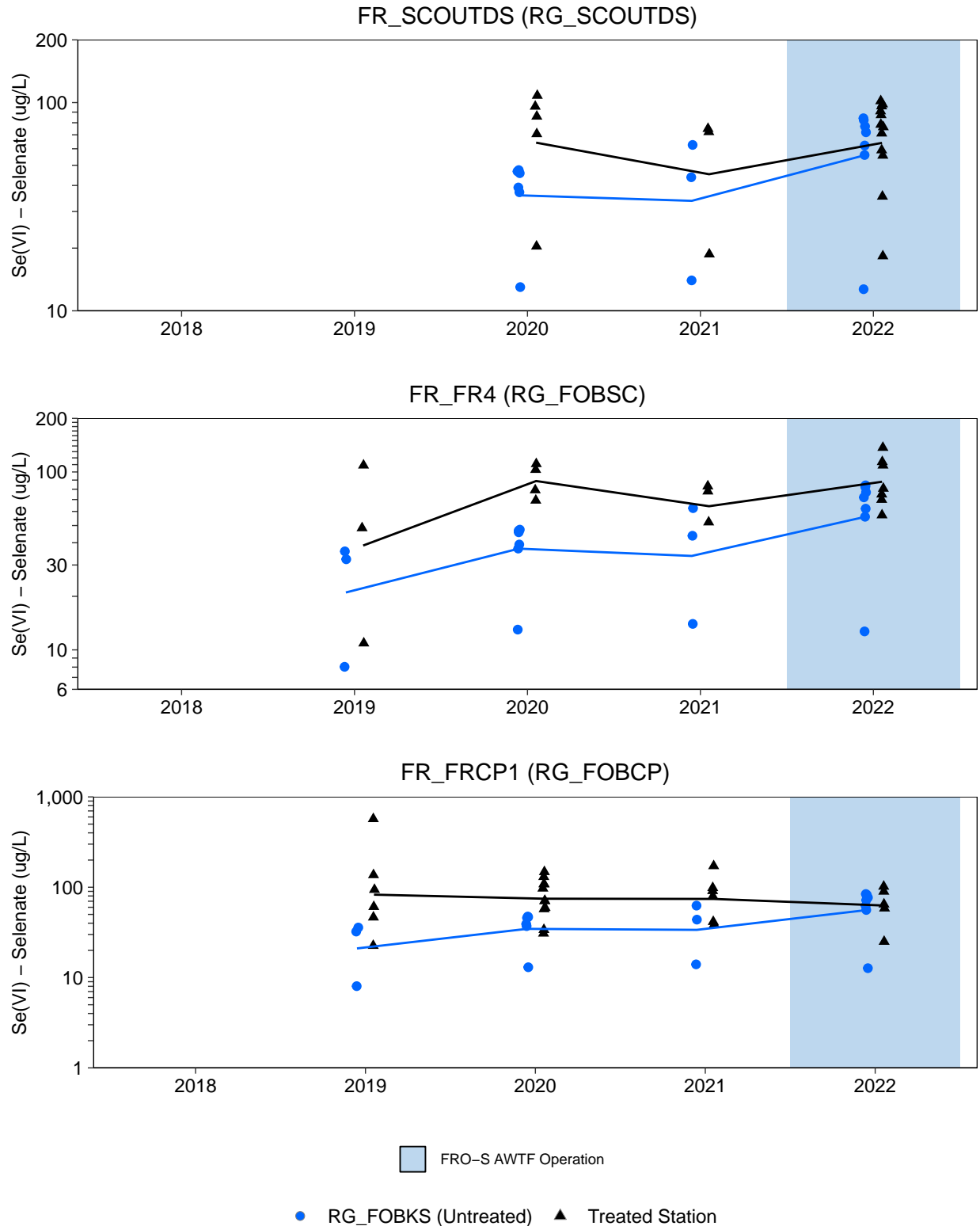


Figure D.52: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

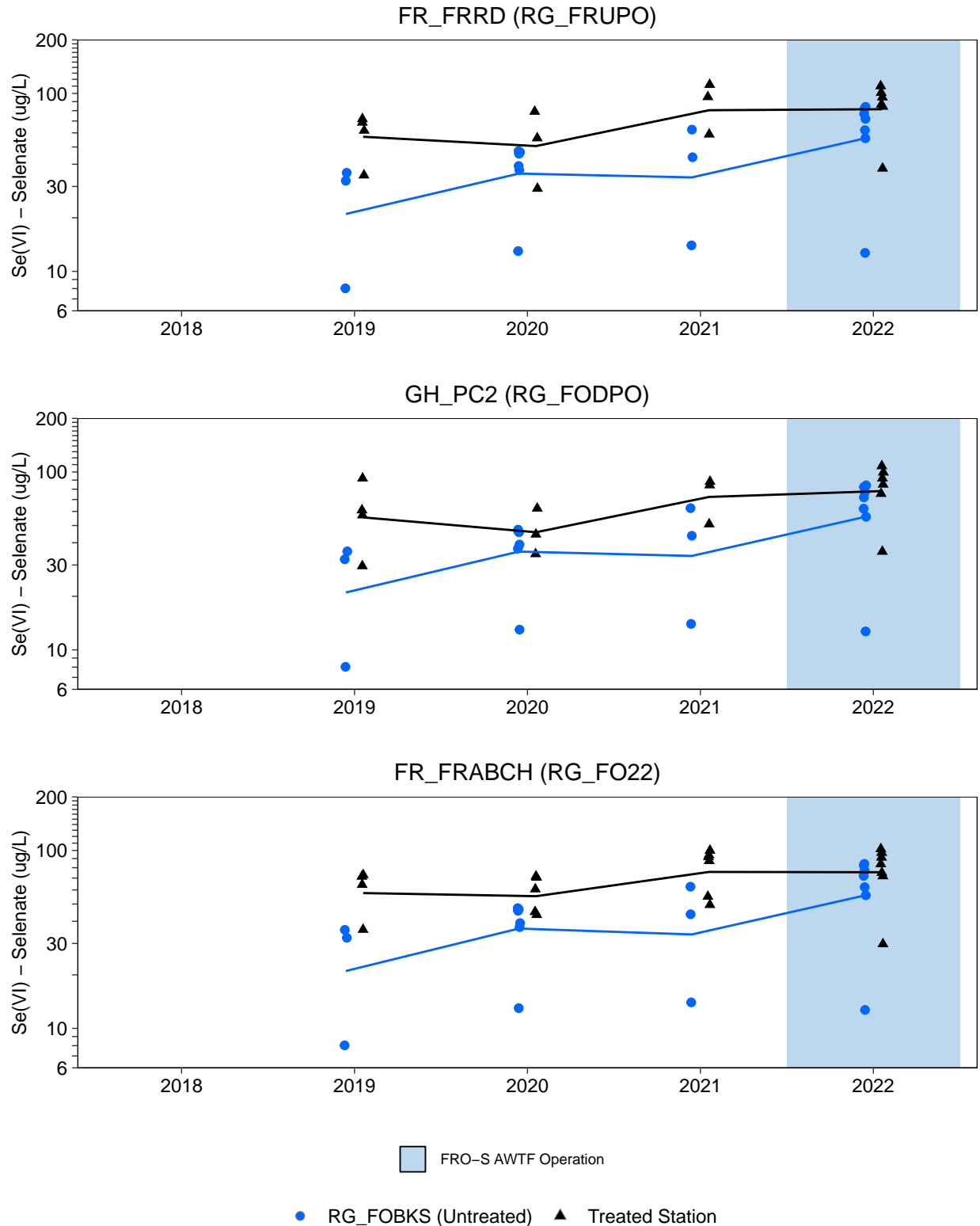
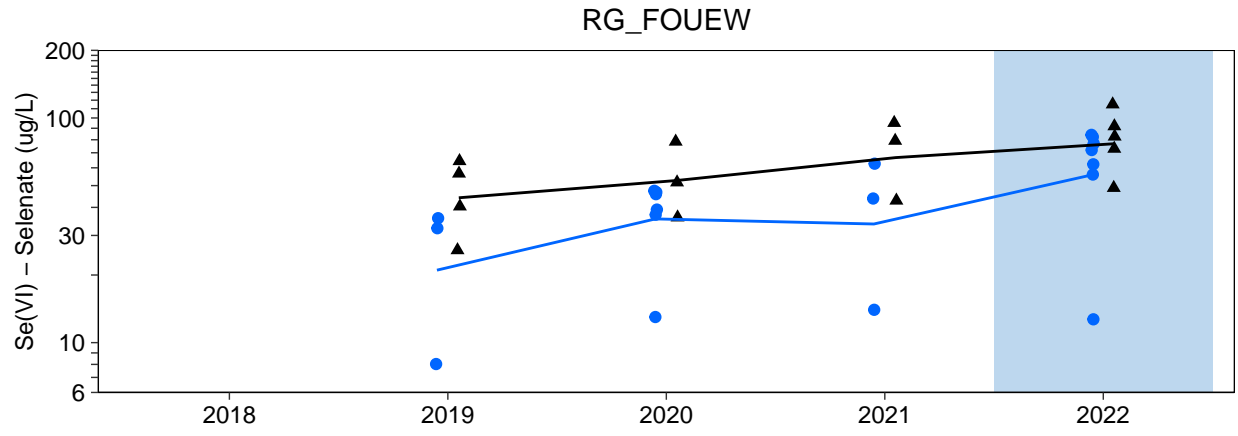


Figure D.52: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.



■ FRO-S AWTF Operation

● RG_FOBKS (Untreated) ▲ Treated Station

Figure D.52: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

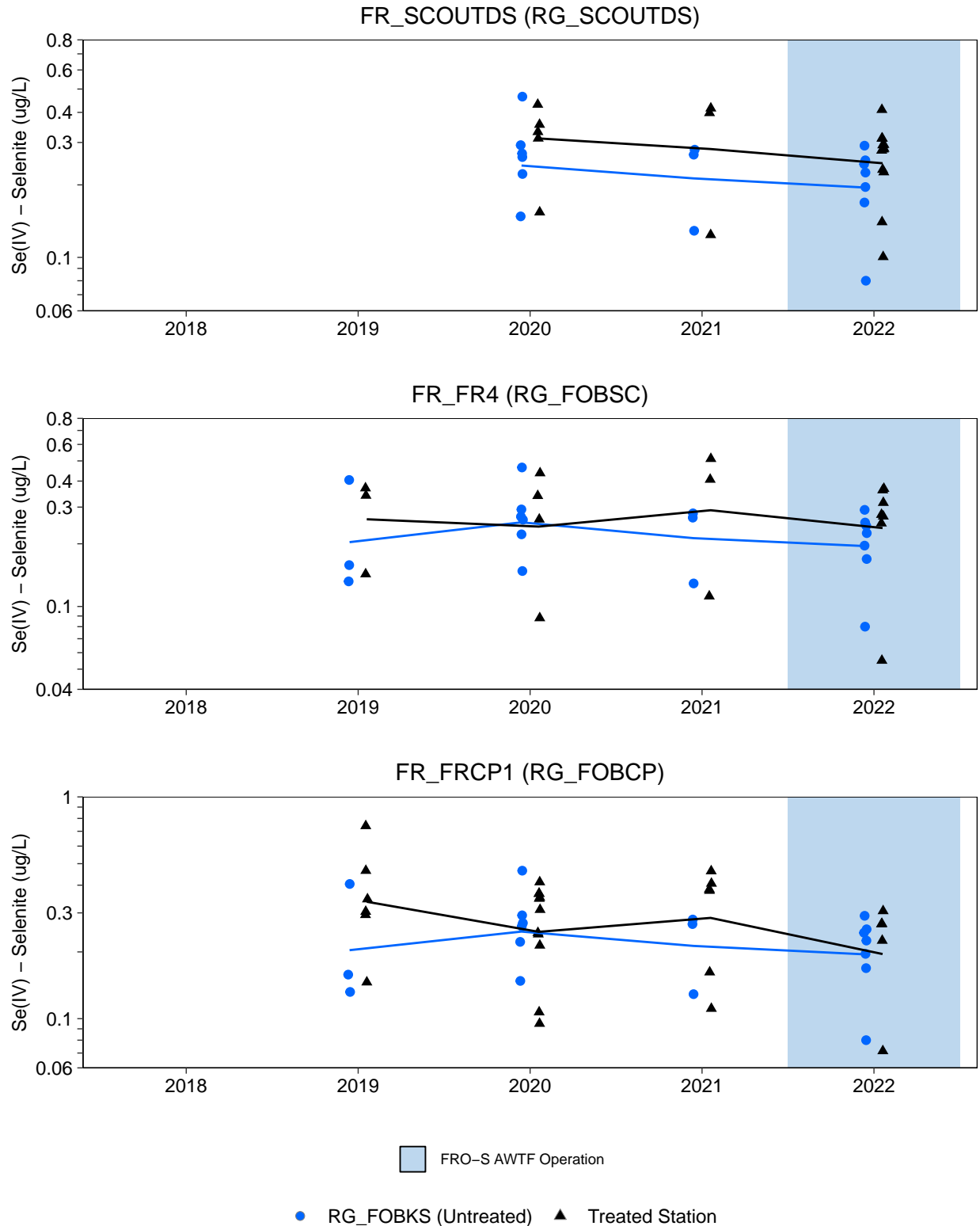


Figure D.53: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

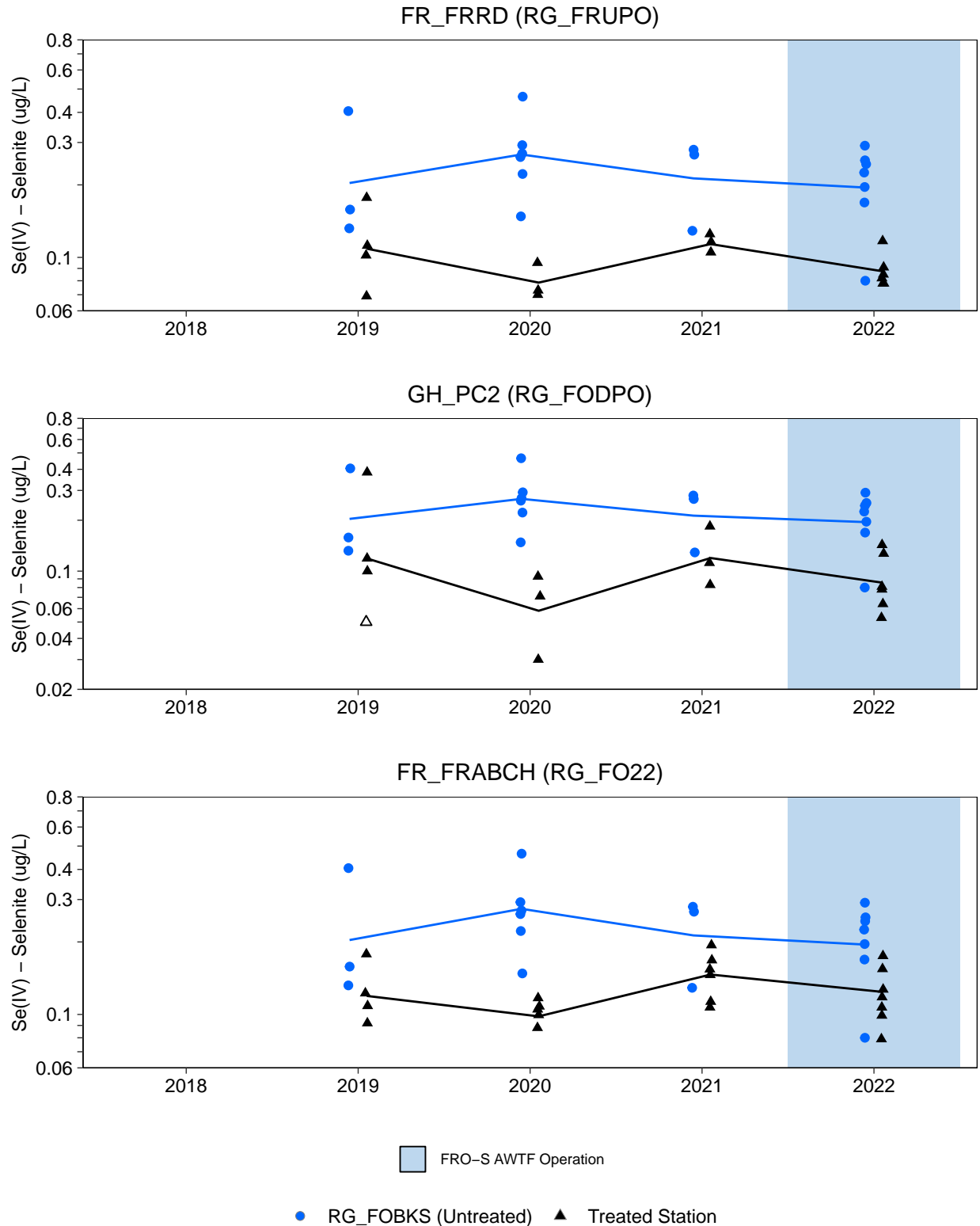
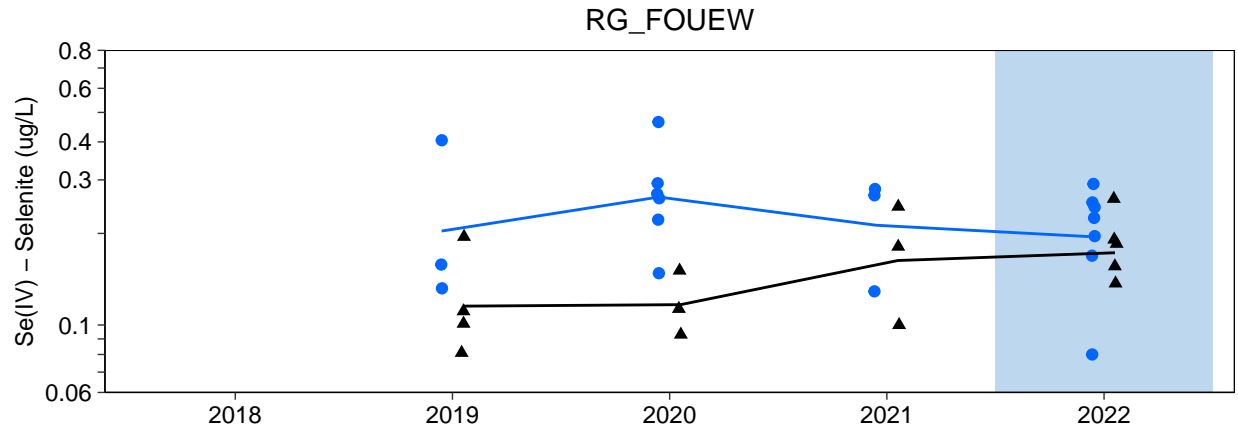


Figure D.53: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUDS was immediately downstream of the outfall.



■ FRO-S AWTF Operation

● RG_FOBKS (Untreated) ▲ Treated Station

Figure D.53: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

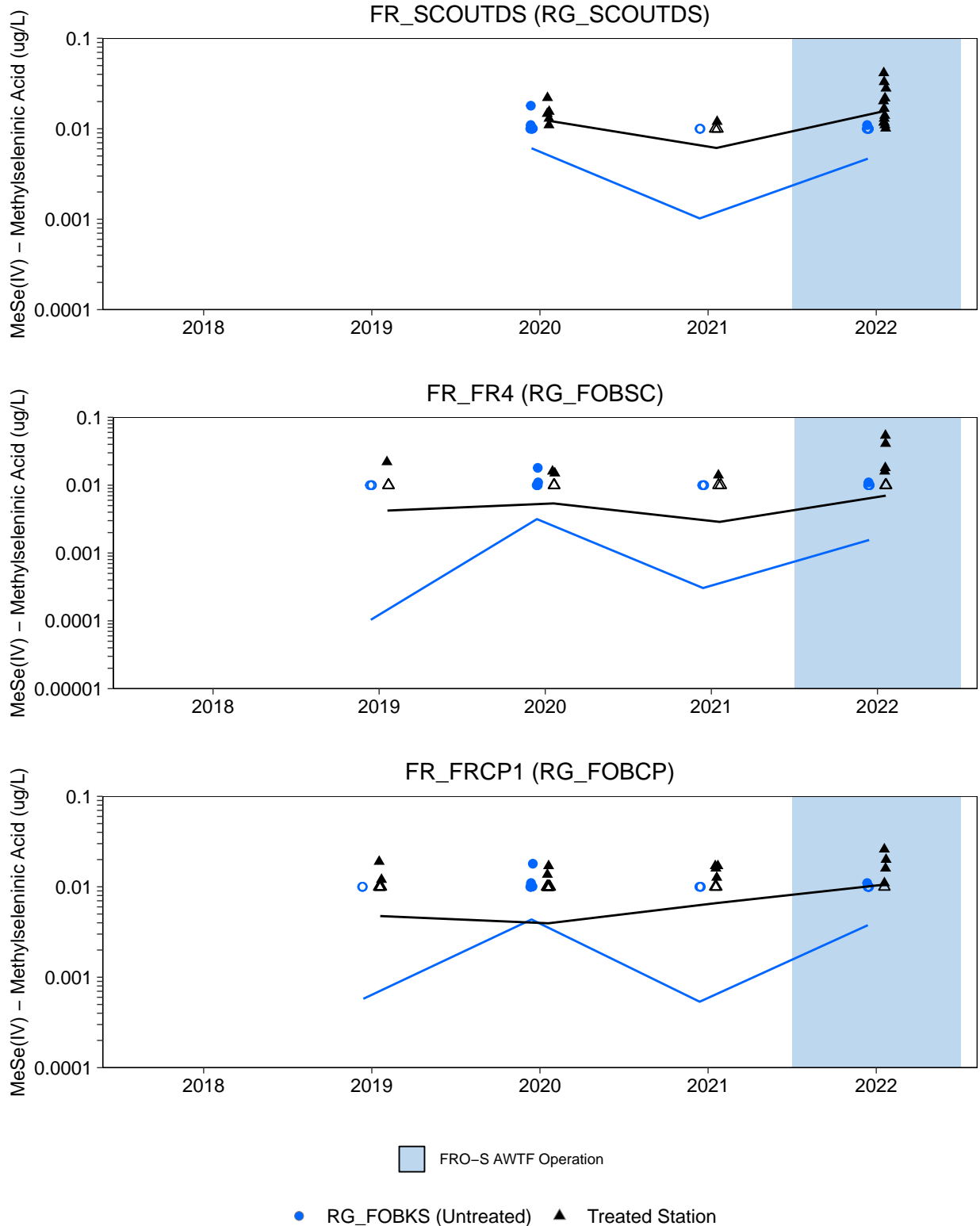


Figure D.54: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

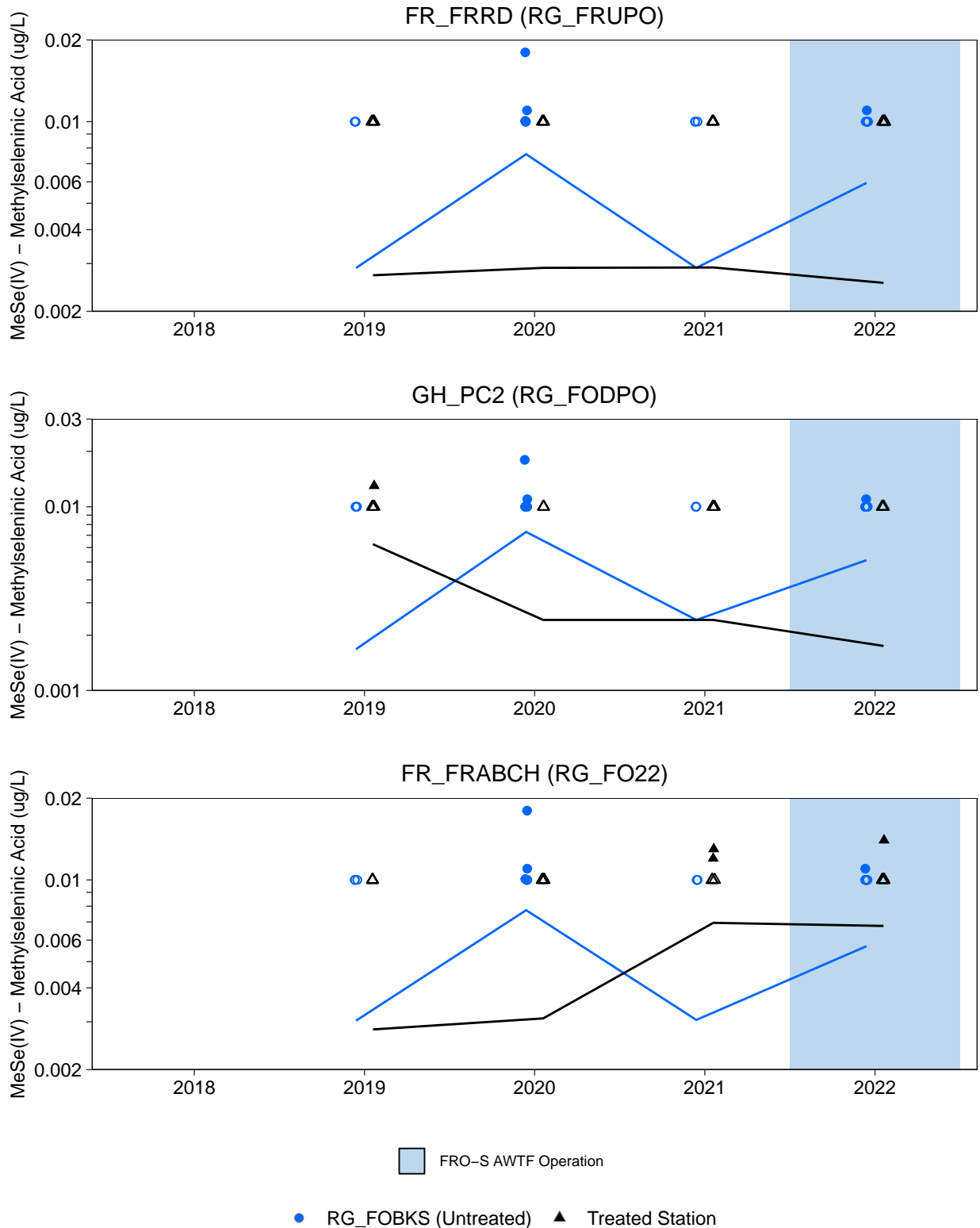
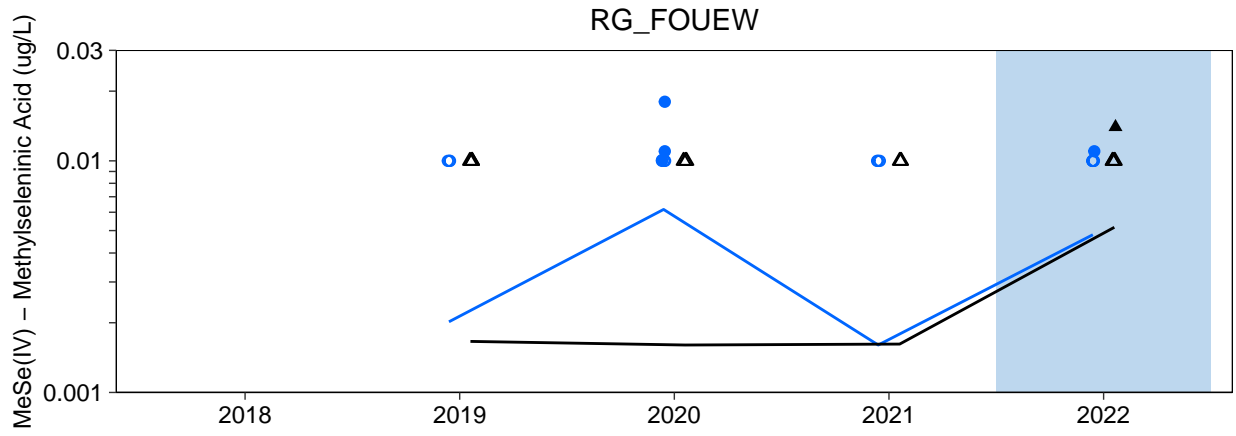


Figure D.54: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.



■ FRO-S AWTF Operation

● RG_FOBKS (Untreated) ▲ Treated Station

Figure D.54: Differences in Monthly Mean Water Quality Analytes Before and After Treatment from FRO LAEMP Sampling Areas, 2018 to 2022

Notes: Values are plotted on the log scale to match statistical analysis. Lines connect estimated marginal means from the censored regression model. Censored values are shown as hollow symbols. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall.

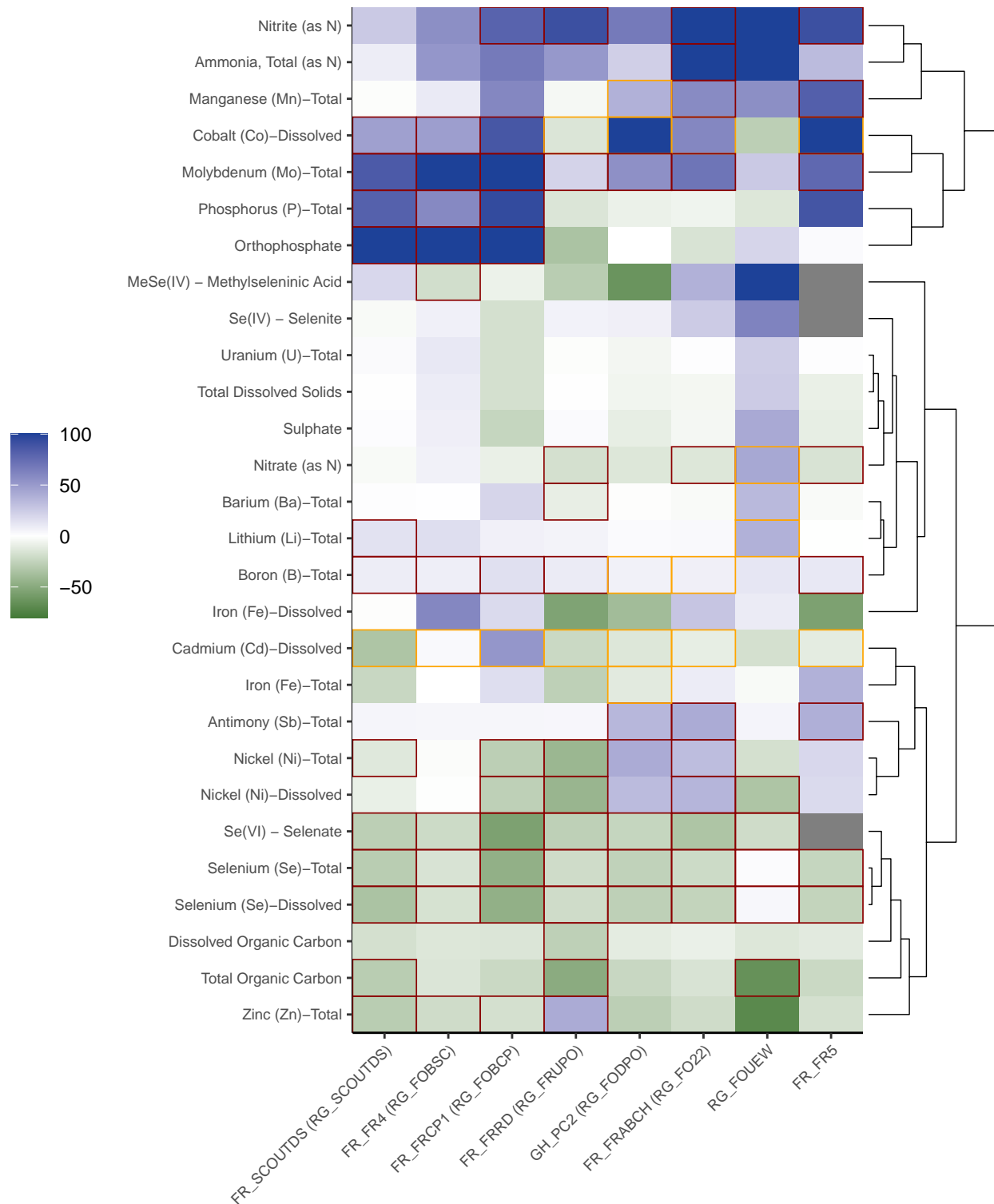


Figure : Heatmap of Magnitude of Differences (MOD) from Statistical Analysis of Water Upstream and Downstream of Treatment, 2018 to 2022.

Notes: Orange boxes show significant BA (Year) x Treatment effects and red boxes show significant BA x Treatment effects. BA = Before-After term. Any MODs greater than 100 were rounded down to 100. Grey boxes indicate cases where exact p-values or MODs could not be calculated due to high censoring. Magnitude of difference was calculated as described in the table with the statistical analysis presented here.

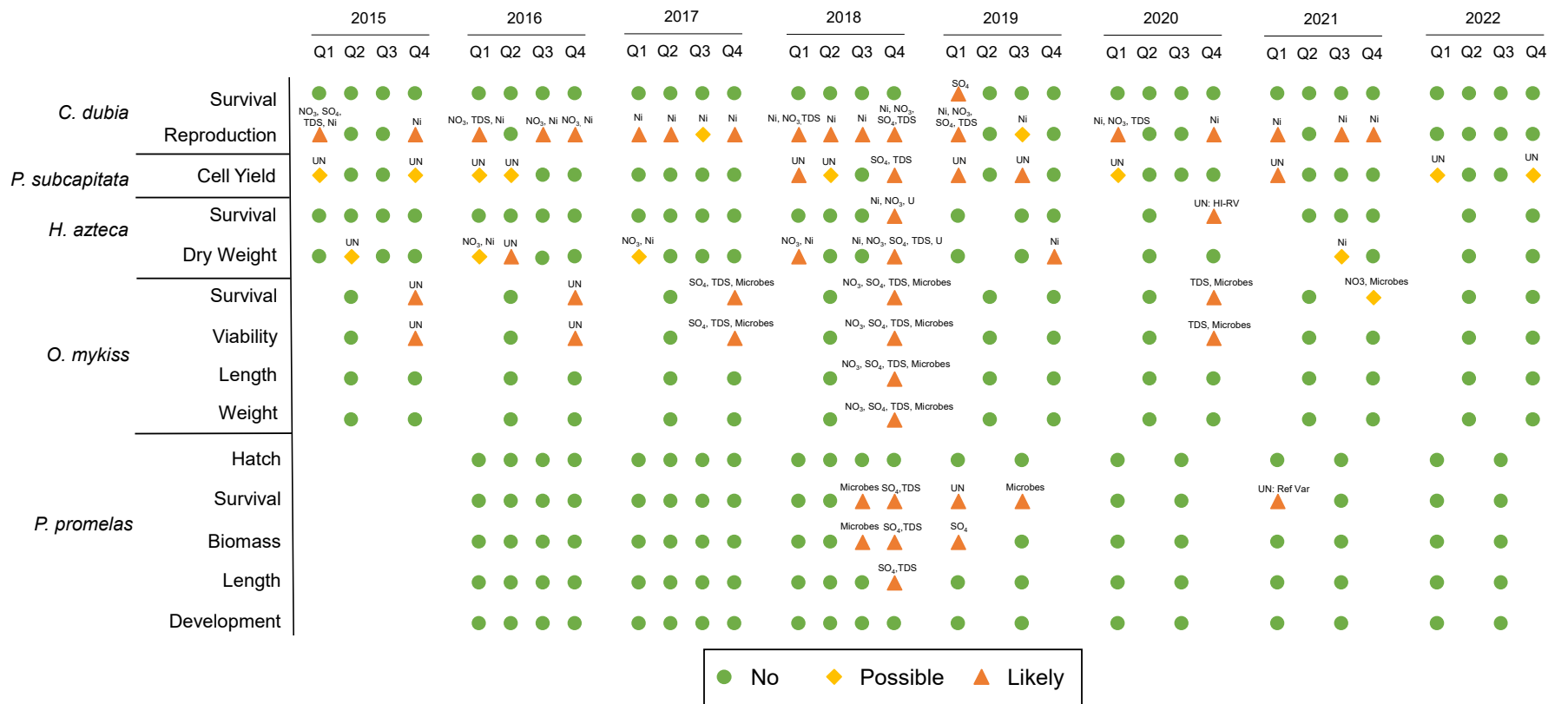


Figure D.56: Summary of Chronic Toxicity Testing Causation Assessment at FR_FRCP1, FRO LAEMP, 2022

Notes: Results were categorized using local and regional normal ranges calculated in this report, see Section 3.2.3. Possible and likely symbols are annotated with constituent(s) identified as potentially contributing to observed response. Ref Var = high inter-reference variability; Ni = nickel; NO₃ = nitrate; SO₄ = sulphate; TDS = total dissolved solids; U = uranium; UN = unknown: no water quality constituent was identified. Figure adapted from WSP Golder (2023).

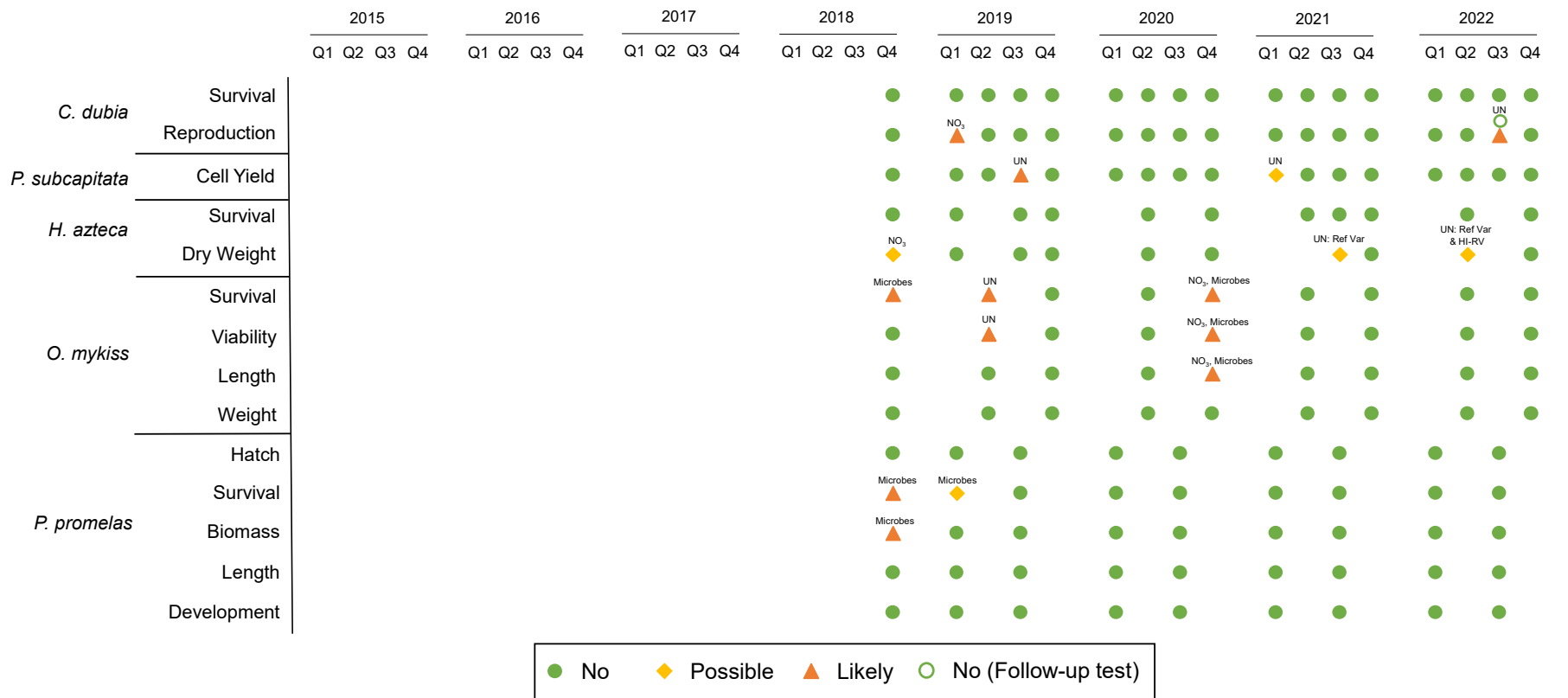


Figure D.56: Summary of Chronic Toxicity Testing Causation Assessment at FR_FRABCH, FRO LAEMP, 2022

Notes: Results were categorized using local and regional normal ranges calculated in this report, see Section 3.2.3. Possible and likely symbols are annotated with constituent(s) identified as potentially contributing to observed response. Ref Var = high inter-reference variability; HI-RV = high inter-replicate variability; NO₃ = nitrate; UN = unknown: no water quality constituent was identified. Figure adapted from WSP Golder (2023).

Table D.1: Seasonal Kendall Trend Analysis For Water Quality Constituents Collected at Routine Monitoring Stations, Fording River LAEMP, 2012 to 2022

Constituent	Units	Reference		Mine-exposed											
		FR_HC3 (RG_HENUP)	FR_UFR1 (RG_UFR1)	FR_FR1 (RG_FODHE)	FR_MULTIPLATE (RG_MP1)	FR_FRNTP (RG_FOUSH)	FR_FR2 (RG_FOUKI)	FR_FR3 (RG_FOBKS)	FR_SCOUTDS (RG_SCOUTDS)	FR_FR4 (RG_FOBSC)	FR_FRCP1 (RG_FOBCP)	FR_FRRD (RG_FRUPO)	GH_PC2 (RG_FODPO)	FR_FRABCH (RG_FO22)	FR_FR5
Nitrate (as N)	mg/L	NS	3.5	-4.5	6.3	9.3	7.4	7.0	17	6.0	4.4	2.8	NS	1.8	1.2

P-value < 0.05.
 Significant decreasing temporal trend (Seasonal Kendall test for monotonic trend at $\alpha = 0.05$). Value reported is the Sen's slope reported as a percentage of the median concentration or value.
 Significant increasing temporal trend (Seasonal Kendall test for monotonic trend at $\alpha = 0.05$). Value reported is the Sen's slope reported as a percentage of the median concentration or value.
 Notes: "NS" = no significant temporal trend (Seasonal Kendall test for monotonic trend at $\alpha = 0.05$). "-" = no data or insufficient data ($n < 5$) to test for trend. LRL = No trend test because percent of values at the LRL ≥ 75 .

Table D.2. Temporal Changes in Water Chemistry Constituents at Routine Monitoring Stations, FRO LAEMP, 2012 to 2022

Constituents	Status	Station	Annual Variation ^a		Q1. Is there a positive or negative change in concentrations since the base year (b) of monitoring?											Q2. Is the 2022 annual mean greater or less than all annual historical means (2012 to 2021) and the previous year (2021)? ^c																
			DF	P-Value	Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																											
					2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2022 vs. 2012-2021	2022 vs. 2021				
Phosphorus (P)- Total	Reference	FR_HC3 (RG_HENUP)	6	0.459	-	b	-	-	nc	nc	nc	nc	nc	nc	nc	nc	-	nc	-	b	-	-	nc	nc	nc	nc	nc	-	nc	No	No	
		FR_UFR1 (RG_UFR1)	9	0.001	-	b	17.1	-44.2	-33.3	0.133	-32.7	-25.9	-19.5	-21.6	7.05	-	b	A	B	AB	A	AB	AB	AB	AB	AB	AB	AB	A	No	No	
	Mine-exposed	FR_FR1 (RG_FODHE)	9	0.004	-	b	-33.5	-58.4	-30.6	-54.8	-46.3	-57.7	-37.0	-66.6	-6.55	-	b	AB	AB	AB	AB	AB	AB	AB	AB	AB	B	A	No	↑		
		FR_MULTIPLATE (RG_MP1)	2	0.744	-	-	-	-	-	-	-	b	nc	nc	-	-	-	-	-	-	-	-	b	-	nc	nc	-	No	No			
		FR_FRNTP (RG_FOUSH)	4	0.002	-	-	-	-	-	-	-	b	-27.5	10.0	-34.1	49.5	-	-	-	-	-	-	-	-	-	b	AB	AB	B	A	No	↑
		FR_FR2 (RG_FOUKI)	9	0.001	-	b	-41.7	-66.1	-53.2	-44.5	-67.5	-61.7	-61.0	-67.3	-34.9	-	b	ABC	BC	ABC	ABC	BC	BC	BC	BC	BC	C	AB	No	↑		
		FR_FR3 (RG_FOBKS)	6	0.023	-	b	-13.3	-19.5	-	-	-	-	-48.5	-46.3	-63.0	-35.5	-	b	AB	AB	-	-	-	-	AB	AB	B	AB	No	No		
		FR_SCOUTDS (RG_SCOUTDS)	2	0.001	-	-	-	-	-	-	-	-	-	-	29.6	306	-	-	-	-	-	-	-	-	-	b	B	A	↑	↑		
		FR_FR4 (RG_FOBSC)	8	0.001	-	b	-22.6	-48.2	-33.1	-58.0	-19.9	-	-50.2	-51.1	46.8	-	b	AB	B	AB	B	AB	-	B	B	B	A	No	↑			
		FR_FRCP1 (RG_FOBBCP)	7	0.001	-	-	-	b	45.5	95.4	24.0	11.8	30.8	4.77	279	-	-	-	b	BC	B	BC	BC	BC	BC	BC	A	↑	↑			
		FR_FRRD (RG_FRUPO)	7	0.058	-	-	-	b	nc	nc	nc	nc	nc	nc	nc	-	-	-	b	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No		
		GH_PC2 (RG_FODPO)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		FR_FRABCH (RG_FO22)	7	0.008	-	-	-	b	39.0	43.2	-3.18	-15.3	-20.2	-1.59	55.7	-	-	-	b	AB	AB	AB	B	B	B	AB	A	No	No			
		FR_FR5	8	0.555	-	b	nc	nc	nc	nc	nc	nc	nc	nc	nc	-	-	-	b	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	No	No	
Selenium (Se)- Total	Reference	FR_HC3 (RG_HENUP)	9	0.001	b	10.9	-	28.8	34.3	38.7	39.0	87.5	23.9	44.7	41.5	b	BC	-	ABC	ABC	ABC	ABC	A	BC	AB	ABC	No	No				
		FR_UFR1 (RG_UFR1)	10	0.001	b	-1.83	-3.12	7.41	17.9	18.4	17.4	23.7	20.8	25.3	29.7	b	C	C	BC	AB	AB	AB	A	A	A	A	A	No	No			
	Mine-exposed	FR_FR1 (RG_FODHE)	10	0.001	b	59.6	18.6	5.47	-10.1	67.8	24.2	16.5	51.0	16.4	43.3	b	AB	AB	AB	B	A	AB	AB	AB	AB	AB	AB	No	No			
		FR_MULTIPLATE (RG_MP1)	2	0.001	-	-	-	-	-	-	-	b	-6.81	15.8	-	-	-	-	-	-	-	-	b	-	B	A	-	No	↑			
		FR_FRNTP (RG_FOUSH)	4	0.001	-	-	-	-	-	-	-	b	-10.6	3.05	14.0	44.6	-	-	-	-	-	-	b	C	BC	B	A	↑	↑			
		FR_FR2 (RG_FOUKI)	10	0.001	b	18.3	2.73	-6.76	-2.89	25.1	34.5	16.8	53.5	73.2	115	b	DEF	EFG	G	FG	DE	CD	DEF	BC	B	A	↑	↑				
		FR_FR3 (RG_FOBKS)	7	0.001	b	15.0	-3.73	-18.1	-	-	-	15.0	49.8	56.9	82.7	b	C	CD	D	-	-	-	C	B	AB	A	No	No				
		FR_SCOUTDS (RG_SCOUTDS)	2	0.004	-	-	-	-	-	-	-	-	b	-4.22	-14.3	-	-	-	-	-	-	-	-	-	b	A	B	↓	↓			
		FR_FR4 (RG_FOBSC)	9	0.001	b	7.96	0.873	-22.1	-18.2	14.8	1.67	-	87.2	45.2	49.1	b	BC	C	C	C	ABC	BC	-	A	AB	AB	No	No				
		FR_FRCP1 (RG_FOBBCP)	7	0.001	-	-	-	b	-21.1	11.6	57.1	3.35	1.92	6.72	-8.42	-	-	-	b	C	B	A	BC	BC	BC	BC	No	No				
		FR_FRRD (RG_FRUPO)	7	0.001	-	-	-	b	-2.09	29.7	15.7	16.3	39.0	57.5	31.1	-	-	-	b	DE	BC	CDE	CD	AB	A	BC	No	↓				
		GH_PC2 (RG_FODPO)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		FR_FRABCH (RG_FO22)	7	0.001	-	-	-	b	0.500	14.1	22.5	14.3	22.3	40.1	26.1	-	-	-	b	D	BCD	BC	CD	BC	A	B	No	↓				
		FR_FR5	9	0.001	b	17.8	19.1	6.17	8.33	20.9	24.1	-	32.1	47.8	35.0	b	BCDE	BCDE	DE	CDE	ABCDE	ABCD	-	ABC	A	AB	AB	No	No			
Sulphate	Reference	FR_HC3 (RG_HENUP)	9	0.007	b	3.06	-	29.0	32.5	41.1	32.4	52.0	14.3	28.9	32.3	b	AB	-	AB	AB	AB	AB	A	AB	AB	AB	No	No				
		FR_UFR1 (RG_UFR1)	10	0.009	b	-1.35	4.29	19.2	23.8	15.3	9.49	9.20	12.0	12.7	1.58	b	AB	AB	AB	A	AB	AB	AB	AB	AB	AB	B	No	No			
	Mine-exposed	FR_FR1 (RG_FODHE)	10	0.007	b	45.6	26.3	36.7	17.6	77.4	25.7	35.6	70.4	28.7	41.1	b	AB	AB	AB	AB	A	AB	AB	A	AB	AB	No	No				
		FR_MULTIPLATE (RG_MP1)	2	0.001	-	-	-	-	-	-	-	b	-8.61	15.8	-	-	-	-	-	-	-	-	b	-	B	A	-	No	↑			
		FR_FRNTP (RG_FOUSH)	4	0.001	-	-	-	-	-	-	-	b	-6.18	5.98	18.4	33.7	-	-	-	-	-	-	b	C	BC	B	A	↑	↑			
		FR_FR2 (RG_FOUKI)	10	0.001	b	17.1	9.65	4.54	7.52	20.1	24.8	17.8	32.3	56.4	67.3	b	BCD	BCD	CD	CD	BCD	BC	BCD	B	A	A	No	No				
		FR_FR3 (RG_FOBKS)	7	0.001	b	5.23	-8.21	-7.92	-	-	-	-	3.19	22.7	40.4	39.9	b	BC	C	C	-	-	-	BC	AB	A	A	No	No			
		FR_SCOUTDS (RG_SCOUTDS)	2	0.001	-	-	-	-	-	-	-	-	-	b	2.93	16.6	-	-	-	-	-	-	-	-	b	B	A	↑	↑			
		FR_FR4 (RG_FOBSC)	9	0.001	b	18.7	12.8	2.13	1.75	30.1	19.2	-	78.7	64.4	88.3	b	C	C	C	C	ABC	BC	-	A	AB	A	No	No				
		FR_FRCP1 (RG_FOBBCP)	7	0.001	-	-	-	b	-13.7	11.7	44.7	2.22	-2.29	7.72	13.5	-	-	-	b	C	ABC	A	BC	BC	BC	AB	No	No				
		FR_FRRD (RG_FRUPO)	7	0.001	-	-	-	b	-1.41	20.3	8.83	12.0	17.8	36.2	34.5	-	-	-	b	D	ABC	CD	CD	BC	A	AB	No	No				
		GH_PC2 (RG_FODPO)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		FR_FRABCH (RG_FO22)	7	0.001	-	-	-	b	4.59	10.8	13.1	9.92	9.72	27.1	26.2	-	-	-	b	B	AB	B	B	B	A	A	No	No				
		FR_FR5	9	0.001	b	9.11	10.9	5.23	12.5	19.1	20.9	-	19.7	37.7	31.8	b	BC	ABC	C	ABC	ABC	ABC	-	ABC	A	AB	AB	No	No			
Total Dissolved Solids	Reference	FR_HC3 (RG_HENUP)	9	0.008	b	2.84	-	9.93	7.08	14.7	15.7	22.6	12.2	4.69	14.4	b	AB	-	AB	AB	AB	AB	A	AB	AB	AB	No	No				
		FR_UFR1 (RG_UFR1)	10	0.001	b	5.47	3.61	13.8	11.7	7.64	5.42	7.00	6.96	0.244	-2.41	b	ABC	ABC	A	A	AB	ABC	ABC	AB	BC	C	No	No				
	Mine-exposed	FR_FR1 (RG_FODHE)	10	0.037	b	22.3	10.6	23.2	6.23	34.7	7.38	11.8	35.5	4.87	10.9	b	AB	AB	AB	AB	AB	AB	A	AB	AB	AB	No	No				
		FR_MULTIPLATE (RG_MP1)	2	0.001	-	-	-	-	-	-	-	b	-3.87	9.21	-	-	-	-	-	-	-	-	b	-	B	A	-	No	↑			
		FR_FRNTP (RG_FOUSH)	4	0.001	-	-	-	-	-	-	-	b	-5.15	4.22	12.4	18.4	-	-	-	-	-	-	b	C	BC	AB	A	No	No			
		FR_FR2 (RG_FOUKI)	10	0.001	b	7.10	7.89	5.89	8.70	16.7	19.7	12.6	24.7	37.8	39.7	b	BCD	BCD	CD	CD	BC	BC	BCD	AB	A	A	No	No				
		FR_FR3 (RG_FOBKS)	7	0.001	b	7.72	-0.307	-9.57	-	-	-	-	8.12	22.5	29.8	29.7	b	BC	C	C	-	-	-	BC	AB	A	A	No	No			
		FR_SCOUTDS (RG_SCOUTDS)	2	0.014	-	-	-	-	-	-	-	-	-	b	-0.0165	8.10	-	-	-	-	-	-	-	-	b	B	A	No	↑			
		FR_FR4 (RG_FOBSC)	9	0.001	b	10.0	7.09	-3.64	-1.61	20.7	11.6	-	51.0	38.3	54.5	b	C	C	C	C	BC	C	-	AB	AB	A	No	No				
		FR_FRCP1 (RG_FOBBCP)	7	0.001	-	-	-	b	-9.92	6.23	36.4	3.78	0.526	6.31	8.65	-	-	-	b	B	B	A	B	B	B	B	No	No				
		FR_FRRD (RG_FRUPO)	7	0.001	-	-	-	b	-2.89	12.1	6.02	7.36	13.9	26.5	19.3	-	-	-	b	C	ABC	BC	BC	B	A	AB	No	No				
		GH_PC2 (RG_FODPO)	-	-																												

Table D.2. Temporal Changes in Water Chemistry Constituents at Routine Monitoring Stations, FRO LAEMP, 2012 to 2022

Constituents	Status	Station	Annual Variation ^a		Q1. Is there a positive or negative change in concentrations since the base year (b) of monitoring?													Q2. Is the 2022 annual mean greater or less than all annual historical means (2012 to 2021) and the previous year (2021)? ^c											
			DF	P-Value	Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																								
					2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2022 vs. 2012-2021	2022 vs. 2021	
Uranium (U)-Total	Reference	FR_HC3 (RG_HENUP)	9	0.002	b	5.86	-	8.44	14.3	14.7	15.1	32.3	10.9	12.7	18.0	b	B	-	AB	AB	AB	AB	A	AB	AB	AB	No	No	
		FR_UFR1 (RG_UFR1)	10	0.001	b	6.03	3.17	6.73	9.53	7.25	9.70	10.9	12.5	8.72	7.85	b	AB	AB	AB	A	AB	A	A	A	A	AB	No	No	
	Mine-exposed	FR_FR1 (RG_FODHE)	10	0.015	b	28.4	16.5	25.7	15.0	44.8	12.7	26.5	39.9	23.2	30.5	b	AB	AB	AB	AB	A	AB	AB	A	AB	A	No	No	
		FR_MULTIPLATE (RG_MP1)	2	0.001	-	-	-	-	-	-	b	-	-4.27	14.8	-	-	-	-	-	-	b	-	B	A	-	↑	↑		
		FR_FRNTP (RG_FOUSH)	4	0.001	-	-	-	-	-	-	b	1.57	9.74	22.8	29.8	-	-	-	-	-	b	B	B	A	A	No	No		
		FR_FR2 (RG_FOUKI)	10	0.001	b	12.8	1.04	0.366	13.7	23.5	30.7	27.4	37.1	58.5	62.7	b	CDE	DE	E	CDE	BCD	BC	BC	B	A	A	No	No	
		FR_FR3 (RG_FOBKS)	7	0.001	b	0.182	-7.09	-20.5	-	-	-	-	15.5	28.2	46.1	40.4	b	C	CD	D	-	-	-	BC	AB	A	AB	No	No
		FR_SCOUTDS (RG_SCOUTDS)	2	0.001	-	-	-	-	-	-	-	-	-	b	5.97	14.9	-	-	-	-	-	-	-	-	B	A	↑	↑	
		FR_FR4 (RG_FOBSC)	9	0.001	b	6.43	3.79	-12.5	-1.95	14.8	15.4	-	67.7	55.0	72.9	b	BC	BC	C	BC	BC	B	-	A	A	A	No	No	
		FR_FRCP1 (RG_FOBBCP)	7	0.001	-	-	-	b	-7.82	12.3	58.4	14.3	6.06	17.0	20.9	-	-	-	b	C	BC	A	BC	BC	BC	B	No	No	
		FR_FRRD (RG_FRUPO)	7	0.001	-	-	-	b	-0.263	25.2	18.6	24.1	32.7	52.4	37.5	-	-	-	b	D	BC	C	BC	BC	A	AB	No	No	
		GH_PC2 (RG_FODPO)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		FR_FRABCH (RG_FO22)	7	0.001	-	-	-	b	5.44	14.4	24.1	21.5	25.7	46.9	42.4	-	-	-	b	CD	BC	B	B	B	A	A	No	No	
FR_FR5	9	0.001	b	7.50	3.47	1.80	12.7	16.9	18.7	-	32.5	45.2	44.7	b	C	C	C	BC	BC	BC	-	AB	A	A	No	No			
Zinc (Zn)-Total	Reference	FR_HC3 (RG_HENUP)	1	0.862	b	nc	-	-	-	-	-	-	-	-	b	nc	-	-	-	-	-	-	-	-	-	-	No	No	
		FR_UFR1 (RG_UFR1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Mine-exposed	FR_FR1 (RG_FODHE)	3	0.393	-	b	-	-	-	nc	-	nc	-	nc	-	b	-	-	-	nc	-	-	nc	-	nc	-	nc	No	No
		FR_MULTIPLATE (RG_MP1)	1	0.193	-	-	-	-	-	-	-	-	b	nc	-	-	-	-	-	-	-	-	-	b	B	A	↑	↑	
		FR_FRNTP (RG_FOUSH)	2	0.001	-	-	-	-	-	-	-	-	b	17.9	67.5	-	-	-	-	-	-	-	-	b	B	A	↑	↑	
		FR_FR2 (RG_FOUKI)	7	0.001	b	60.2	-	-	-45.0	0.371	-9.18	-	-1.17	8.53	43.3	b	A	-	-	C	AB	BC	-	B	AB	A	No	No	
		FR_FR3 (RG_FOBKS)	6	0.042	b	48.3	-12.4	-11.9	-	-	-	-	31.0	6.69	51.1	b	A	A	A	-	-	-	-	A	A	A	No	No	
		FR_SCOUTDS (RG_SCOUTDS)	2	0.201	-	-	-	-	-	-	-	-	b	nc	nc	-	-	-	-	-	-	-	-	b	nc	nc	No	No	
		FR_FR4 (RG_FOBSC)	9	0.001	b	21.3	-19.1	-49.0	-46.6	-33.9	-28.8	-	21.5	55.6	23.9	b	ABC	CD	D	D	CD	CD	-	ABC	A	AB	No	No	
		FR_FRCP1 (RG_FOBBCP)	5	0.001	-	-	-	-	-	b	4.79	-20.1	96.7	131	78.8	-	-	-	-	-	b	B	B	A	A	A	No	No	
		FR_FRRD (RG_FRUPO)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		GH_PC2 (RG_FODPO)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		FR_FRABCH (RG_FO22)	3	0.543	-	-	-	-	-	b	-	-	nc	nc	nc	-	-	-	-	-	b	-	-	nc	nc	nc	No	No	
FR_FR5	2	0.264	b	-	nc	-	-	-	-	-	-	-	nc	b	-	nc	-	-	-	-	-	-	-	nc	No	No			

- P-value < 0.05 (annual variation).
- > 20% Decrease in concentration.
- > 33% Decrease in concentration.
- > 43% Decrease in concentration.
- > 50% Decrease in concentration.
- > 25% Increase in concentration.
- > 50% Increase in concentration.
- > 75% Increase in concentration.
- > 100% Increase in concentration.

***Bold** Significant increase or decrease from base year.

Notes: Temporal trends were only conducted for areas that have a complete routine water quality monitoring dataset. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and analyzed together with the biological monitoring area depicted in parenthesis. Only constituents considered mine-related under the Adaptive Management Plan (AMP) and that have early warning triggers, and orthophosphate and total phosphorus were analyzed for temporal trends.

^a The presence of annual variation was determined by a significant Year term (α = 0.05) using an ANOVA with factors Year and Month.

^b Magnitude of Difference (MOD) was calculated as the concentrations in each year minus the concentration in the first year divided by the concentration in the first year × 100.

^c Significance between each year determined using all pairwise comparisons with Tukey correction.

^d "-" insufficient data for comparison, where insufficient data is less than 6 months of recorded data or > 75% LRL data in a given year. "nc" = post-hoc test not conducted because of non-significant year term.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, FRO LAEMP, 2022

Station	Summary Statistic	Total Dissolved Solids (mg/L)	Lab pH	Field pH	Dissolved Oxygen (mg/L)	Alkalinity (mg/L)	Nitrate-N (mg/L)	Nitrite-N (mg/L)	Ammonia (mg/L)	Sulphate (mg/L)	Total Chloride (mg/L)	Total Fluoride (mg/L)	Total Antimony (mg/L)	Total Arsenic (mg/L)	Total Barium (mg/L)	Total Beryllium (mg/L)	Total Boron (mg/L)	Total Chromium (mg/L)	Total Cobalt (ug/L)	
FR_HC3 (RG_HIENUP)	n	15	15	26	39	15	15	15	15	15	15	15	13	13	13	13	13	13	13	
	Annual Minimum	121	7.7	7.3	8.6	92	0.12	<0.001	<0.005	12	<0.1	0.15	<0.0001	<0.0001	0.0078	<0.00002	<0.01	<0.0001	<0.0001	
	Annual Maximum	294	8.4	9.7	86	134	0.3	0.0013	<0.005	93	1.5	0.42	<0.0001	0.00018	0.016	<0.00002	<0.01	0.00027	<0.0001	
	Annual Mean	204	8.1	8.2	34	110	0.23	0.001	<0.005	62	0.31	0.32	<0.0001	0.00011	0.014	<0.00002	<0.01	0.00018	<0.0001	
	Annual Median	197	8.2	8.2	11	108	0.25	0.001	<0.005	70	0.24	0.33	<0.0001	0.00011	0.015	<0.00002	<0.01	0.00018	<0.0001	
	% < LRL	0%	0%	0%	0%	0%	0%	93%	100%	0%	13%	0%	100%	46%	0%	100%	100%	8%	100%	
	% > BCWQG ^a	-	-	4%	0%	0%	0%	0%	0%	0%	0%	0%	-	0%	-	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	0%	-	0%	-	-	-	-	-	-	-	0%
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	-	0%	-	-	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	-	0%	-	-	-	-	-	-	-	-	-	
RG_FO26	n	2	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	Annual Minimum	141	8.1	7.8	10	120	0.027	<0.001	<0.005	10	<0.1	0.11	<0.0001	<0.0001	0.028	<0.00002	<0.01	0.00012	<0.0001	
	Annual Maximum	206	8.3	8.6	87	145	0.045	<0.001	<0.005	46	0.14	0.17	<0.0001	0.00011	0.043	<0.00002	<0.01	0.00019	<0.0001	
	Annual Mean	174	8.2	8.2	48	132	0.036	<0.001	<0.005	28	0.12	0.14	<0.0001	0.0001	0.035	<0.00002	<0.01	0.00016	<0.0001	
	Annual Median	174	8.2	8.2	47	132	0.036	<0.001	<0.005	28	0.12	0.14	<0.0001	0.0001	0.035	<0.00002	<0.01	0.00016	<0.0001	
	% < LRL	0%	0%	0%	0%	0%	0%	100%	100%	0%	50%	0%	100%	50%	0%	100%	100%	0%	100%	
	% > BCWQG ^a	-	-	0%	0%	0%	0%	0%	0%	0%	0%	-	0%	-	0%	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	0%	0%	-	0%	-	-	-	-	-	0%
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-	
FR_UFR1 (RG_UFR1)	n	36	36	44	78	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
	Annual Minimum	106	7.9	6.7	8.2	69	<0.005	<0.001	<0.005	7.2	<0.1	0.027	<0.0001	0.0001	0.034	<0.00002	<0.01	<0.0001	<0.0001	
	Annual Maximum	225	8.4	10	1149	169	0.18	0.0028	0.025	49	0.24	0.16	0.00014	0.00064	0.086	0.000092	<0.01	0.0017	0.00083	
	Annual Mean	174	8.3	8.3	55	133	0.066	0.0011	0.0062	33	0.14	0.12	0.0001	0.00015	0.06	0.000022	<0.01	0.00024	0.00013	
	Annual Median	182	8.3	8.2	12	138	0.04	0.001	0.005	42	0.14	0.11	0.0001	0.00012	0.065	0.00002	<0.01	0.00017	0.0001	
	% < LRL	0%	0%	0%	0%	0%	2.8%	92%	81%	0%	22%	0%	97%	8%	0%	94%	100%	3%	92%	
	% > BCWQG ^a	-	-	2%	0%	0%	0%	0%	0%	0%	0%	-	0%	-	0%	0%	0%	3%	0%	
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	0%	0%	-	0%	-	-	-	-	-	0%
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-	
RG_FRGHC	n	6	6	5	12	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
	Annual Minimum	724	7.8	7.3	9.8	226	22	0.0023	<0.005	225	2.1	<0.1	<0.0001	<0.0001	0.066	<0.00002	0.013	0.00013	<0.0001	
	Annual Maximum	1120	8.1	7.6	82	282	32	0.0023	0.0064	469	19	0.16	0.00012	0.00014	0.1	<0.00002	0.018	0.00018	<0.0001	
	Annual Mean	961	8	7.4	45	259	27	0.0023	0.0053	377	5.6	0.13	0.0001	0.00011	0.091	<0.00002	0.016	0.00016	<0.0001	
	Annual Median	988	8	7.4	43	261	27	0.0023	0.005	411	3	0.12	0.0001	0.0001	0.093	<0.00002	0.017	0.00016	<0.0001	
	% < LRL	0%	0%	0%	0%	0%	0.0%	83%	67%	0%	0%	17%	50%	67%	0%	100%	0%	0%	100%	
	% > BCWQG ^a	-	-	0%	0%	0%	100%	0%	0%	33%	0%	-	0%	-	0%	0%	0%	0%	0%	
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	0%	0%	-	0%	-	-	-	-	-	0%
	% > Level 1 Benchmark/UEC	50%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-		
FR_FR1 (RG_FODHE)	n	23	23	25	38	23	23	23	23	23	23	23	23	23	23	23	23	23	23	
	Annual Minimum	147	7.3	8	8.9	86	0.52	<0.001	<0.005	24	<0.1	0.1	<0.0001	<0.0001	0.022	<0.00002	<0.01	<0.0001	<0.0001	
	Annual Maximum	427	8.4	8.4	100	162	6.5	0.0031	0.0084	191	0.91	0.24	0.00016	0.00064	0.06	0.000085	<0.01	0.0021	0.00088	
	Annual Mean	259	8.2	8.3	37	128	2.2	0.0016	0.0054	87	0.21	0.17	0.00011	0.00016	0.039	0.000023	<0.01	0.00037	0.00014	
	Annual Median	258	8.2	8.3	12	127	2	0.0013	0.005	85	0.18	0.17	0.0001	0.00013	0.04	0.00002	<0.01	0.00019	0.0001	
	% < LRL	0%	0%	0%	0%	0%	0.0%	30%	83%	0%	13%	0%	83%	13%	0%	96%	100%	9%	83%	
	% > BCWQG ^a	-	-	0%	0%	0%	17%	0%	0%	0%	0%	-	0%	-	0%	0%	0%	9%	0%	
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	0%	0%	-	0%	-	-	-	-	-	0%
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-		

> 5% of samples exceed the guideline or benchmark.
 > 50% of samples exceed the guideline or benchmark.
 > 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate and Sulphate, Proposed Benchmark for Dissolved Nickel, Level 1 Screening Value for Total Dissolved Solids, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

^a Long-term average BCWQG for the Protection of Aquatic Life.
^b Short-term maximum BCWQG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, FRO LAEMP, 2022

Station	Summary Statistic	Total Dissolved Solids (mg/L)	Lab pH	Field pH	Dissolved Oxygen (mg/L)	Alkalinity (mg/L)	Nitrate-N (mg/L)	Nitrite-N (mg/L)	Ammonia (mg/L)	Sulphate (mg/L)	Total Chloride (mg/L)	Total Fluoride (mg/L)	Total Antimony (mg/L)	Total Arsenic (mg/L)	Total Barium (mg/L)	Total Beryllium (mg/L)	Total Boron (mg/L)	Total Chromium (mg/L)	Total Cobalt (ug/L)	
FR_FOUCL (RG_FOUCL)	n	3	3	3	6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	Annual Minimum	152	8	7.7	9.3	113	0.99	<0.001	<0.005	34	0.23	0.15	<0.0001	0.0001	0.029	<0.00002	<0.01	0.00011	<0.0001	
	Annual Maximum	464	8.2	8.2	101	165	5.4	0.0037	0.011	206	0.31	0.2	<0.0001	0.00011	0.088	<0.00002	<0.01	0.00013	<0.0001	
	Annual Mean	336	8.1	7.9	49	141	3.8	0.0021	0.0071	130	0.27	0.18	<0.0001	0.00011	0.062	<0.00002	<0.01	0.00012	<0.0001	
	Annual Median	391	8	7.9	46	145	5.1	0.0017	0.005	150	0.28	0.18	<0.0001	0.00011	0.068	<0.00002	<0.01	0.00012	<0.0001	
	% < LRL	0%	0%	0%	0%	0%	0%	0%	33%	67%	0%	0%	0%	100%	0%	0%	100%	100%	0%	100%
	% > BCWQG ^a	-	-	0%	0%	0%	0%	67%	0%	0%	0%	0%	-	0%	-	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	0%	-	0%	0%	-	0%	-	-	-	-	0%
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-	
RG_FOUNGD	n	3	3	3	6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	Annual Minimum	187	8.1	7.9	10	117	2.7	<0.001	<0.005	50	0.16	0.15	<0.0001	<0.0001	0.029	<0.00002	<0.01	0.0001	<0.0001	
	Annual Maximum	762	8.3	8	315	188	28	0.01	0.006	378	1.1	0.19	0.0002	0.00014	0.099	<0.00002	0.012	0.00019	<0.0001	
	Annual Mean	547	8.2	8	97	163	17	0.0041	0.0053	233	0.68	0.17	0.00016	0.00012	0.067	<0.00002	0.011	0.00014	<0.0001	
	Annual Median	692	8.1	8	79	184	21	0.005	0.005	272	0.75	0.18	0.00018	0.00012	0.073	<0.00002	0.01	0.00012	<0.0001	
	% < LRL	0%	0%	0%	0%	0%	0%	0%	67%	67%	0%	0%	0%	33%	33%	0%	100%	67%	0%	100%
	% > BCWQG ^a	-	-	0%	0%	0%	0%	67%	0%	0%	0%	0%	-	0%	-	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	0%	-	0%	0%	-	0%	-	-	-	-	0%
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-	
FR_FRABEC1 (RG_FODNGD)	n	15	15	14	24	15	15	15	15	15	15	14	15	15	15	15	15	15	15	
	Annual Minimum	190	8.1	7.6	8.7	119	2.6	<0.001	<0.005	48	0.14	0.13	<0.0001	<0.0001	0.029	<0.00002	0.01	<0.0001	<0.0001	
	Annual Maximum	947	8.4	8.5	89	203	36	0.027	0.047	408	3.7	0.2	0.00052	0.00017	0.11	<0.00002	0.016	0.00026	0.00042	
	Annual Mean	721	8.2	8.1	41	180	24	0.012	0.011	295	1.3	0.16	0.00025	0.00013	0.078	<0.00002	0.011	0.00013	0.00014	
	Annual Median	814	8.2	8.1	12	192	28	0.012	0.0069	358	1.1	0.17	0.00025	0.00013	0.084	<0.00002	0.011	0.00012	0.0001	
	% < LRL	0%	0%	0%	0%	0%	0%	0%	7%	47%	0%	0%	0%	7%	7%	0%	100%	33%	20%	67%
	% > BCWQG ^a	-	-	0%	0%	0%	0%	93%	7%	0%	0%	0%	-	0%	-	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	-	20%	0%	0%	0%	-	0%	0%	-	0%	-	-	-	-	0%
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	20%	-	-	0%	-	-	-	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-	
FR_MULTIPATE (RG_MP1)	n	13	13	14	25	17	13	13	13	13	13	13	13	13	13	13	13	13	13	
	Annual Minimum	209	7.8	8	8.4	118	3.4	<0.001	<0.005	55	0.19	0.12	0.00013	0.00011	0.031	<0.00002	<0.01	<0.0001	<0.0001	
	Annual Maximum	948	8.4	8.4	102	212	33	0.032	0.052	441	2.8	0.2	0.0014	0.013	1.3	0.0017	0.031	0.027	0.02	
	Annual Mean	823	8.1	8.2	41	192	28	0.017	0.023	368	1.6	0.16	0.00042	0.0013	0.2	0.0002	0.014	0.0026	0.0019	
	Annual Median	874	8.1	8.2	12	198	31	0.018	0.016	405	1.6	0.16	0.00032	0.00016	0.098	0.00002	0.012	0.0002	0.00015	
	% < LRL	0%	0%	0%	0%	0%	0%	0%	8%	23%	0%	0%	0%	0%	0%	85%	15%	15%	23%	
	% > BCWQG ^a	-	-	0%	0%	0%	0%	100%	15%	0%	23%	0%	-	0%	8%	15%	0%	15%	8%	
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	0%	-	0%	0%	-	8%	-	-	-	-	0%
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	15%	-	-	0%	-	-	-	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-	
FR_FRNTP (RG_FOUSH)	n	41	41	27	45	41	41	41	41	41	41	41	41	41	41	41	41	41	41	
	Annual Minimum	200	7.4	7.4	9.2	120	2.6	<0.001	0.005	46	0.17	0.12	<0.0001	0.0001	0.03	<0.00002	<0.01	<0.0001	<0.0001	
	Annual Maximum	981	8.4	10	102	217	36	0.062	0.11	440	2	0.2	0.00088	0.00085	0.17	0.00013	0.015	0.0021	0.0011	
	Annual Mean	670	8.2	8.2	40	178	21	0.013	0.014	285	1.1	0.15	0.00027	0.00018	0.079	0.000024	0.011	0.00027	0.00024	
	Annual Median	773	8.2	8.2	12	194	25	0.01	0.005	348	1.3	0.16	0.00026	0.00015	0.09	0.00002	0.01	0.00017	0.00012	
	% < LRL	0%	0%	0%	0%	0%	0%	0%	2%	51%	0%	0%	0%	2%	2%	0%	90%	41%	5%	46%
	% > BCWQG ^a	-	-	4%	0%	0%	0%	98%	15%	0%	10%	0%	-	0%	-	0%	0%	0%	2%	0%
	% > BCWQG ^b	-	-	-	0%	-	7%	2%	0%	0%	-	0%	0%	-	0%	-	-	-	-	0%
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	5%	-	-	0%	-	-	-	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-	

> 5% of samples exceed the guideline or benchmark.
 > 50% of samples exceed the guideline or benchmark.
 > 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate and Sulphate, Proposed Benchmark for Dissolved Nickel, Level 1 Screening Value for Total Dissolved Solids, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

^a Long-term average BCQWG for the Protection of Aquatic Life.
^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, FRO LAEMP, 2022

Station	Summary Statistic	Total Dissolved Solids (mg/L)	Lab pH	Field pH	Dissolved Oxygen (mg/L)	Alkalinity (mg/L)	Nitrate-N (mg/L)	Nitrite-N (mg/L)	Ammonia (mg/L)	Sulphate (mg/L)	Total Chloride (mg/L)	Total Fluoride (mg/L)	Total Antimony (mg/L)	Total Arsenic (mg/L)	Total Barium (mg/L)	Total Beryllium (mg/L)	Total Boron (mg/L)	Total Chromium (mg/L)	Total Cobalt (ug/L)	
FR_FR2 (RG_FOUKI)	n	49	49	49	81	49	49	49	49	49	49	49	49	49	49	49	49	49	49	
	Annual Minimum	219	7.8	6.7	7.2	122	3.6	0.0011	<0.005	57	0.23	0.12	0.00011	<0.0001	0.032	<0.00002	0.01	<0.0001	0.0001	
	Annual Maximum	1028	8.6	9	623	227	31	0.08	0.11	442	6.3	0.24	0.00081	0.0003	0.13	0.000027	0.014	0.00051	0.00088	
	Annual Mean	655	8.2	8.2	48	186	20	0.012	0.015	277	1.6	0.16	0.00025	0.00015	0.076	0.00002	0.012	0.00018	0.0002	
	Annual Median	761	8.2	8.2	12	203	26	0.0071	0.0052	360	1.8	0.16	0.00024	0.00013	0.092	0.00002	0.012	0.00016	0.00012	
	% < LRL	0%	0%	0%	0%	0%	0%	0.0%	4%	49%	0%	0%	0%	0%	8%	0%	98%	37%	12%	45%
	% > BCWQG ^a	-	-	0%	3%	0%	100%	6%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	2%	0%	-	0%	0%	-	-	0%	-	-	-	-	0%
	% > Level 1 Benchmark/UEC	2%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-	
FR_FR3 (RG_FOBKS)	n	28	28	78	104	29	28	28	28	28	28	28	28	28	28	28	28	28	28	
	Annual Minimum	213	7.8	8.1	8.6	125	3.6	<0.001	<0.005	60	0.19	0.11	0.00013	0.0001	0.032	<0.00002	<0.01	<0.0001	<0.0001	
	Annual Maximum	1140	8.4	9.5	108	234	31	0.094	0.069	423	3.6	0.2	0.00074	0.00027	0.1	<0.00002	0.014	0.00036	0.00062	
	Annual Mean	653	8.2	8.4	31	185	19	0.01	0.01	270	1.5	0.16	0.00023	0.00015	0.075	<0.00002	0.012	0.00018	0.00016	
	Annual Median	748	8.3	8.3	12	204	22	0.007	0.005	316	1.6	0.16	0.00022	0.00014	0.089	<0.00002	0.012	0.00014	0.0001	
	% < LRL	0%	0%	0%	0%	0%	0.0%	14%	57%	0%	0%	0%	0%	0%	11%	0%	100%	39%	7%	50%
	% > BCWQG ^a	-	-	3%	0%	0%	100%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	4%	0%	-	0%	0%	-	-	0%	-	-	-	-	0%
	% > Level 1 Benchmark/UEC	4%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-	
FR_SCOUTDS (RG_SCOUTDS)	n	60	60	73	87	60	72	63	60	60	60	60	60	60	60	60	60	60	60	
	Annual Minimum	208	7.9	8	4.1	89	2	0.001	<0.005	71	0.24	0.061	0.00013	0.0001	0.032	<0.00002	0.01	<0.0001	0.0001	
	Annual Maximum	1510	8.5	9	104	329	31	0.076	0.064	714	23	0.4	0.00081	0.00031	0.12	<0.00002	0.016	0.00043	0.00069	
	Annual Mean	864	8.3	8.3	24	220	18	0.01	0.0095	401	6.2	0.16	0.00026	0.00014	0.07	<0.00002	0.012	0.00015	0.00015	
	Annual Median	975	8.3	8.3	12	236	20	0.0067	0.005	462	5.3	0.17	0.00024	0.00012	0.079	<0.00002	0.012	0.00013	0.0001	
	% < LRL	0%	0%	0%	0%	0%	0.0%	11%	50%	0%	0%	2%	0%	0%	13%	0%	100%	25%	10%	45%
	% > BCWQG ^a	-	-	0%	2%	0%	99%	2%	0%	55%	0%	-	0%	-	0%	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	1%	-	0%	0%	0%	-	0%	0%	-	-	0%	-	-	-	-	0%
	% > Level 1 Benchmark/UEC	48%	-	-	-	-	14%	-	-	10%	-	-	-	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	11%	-	-	0%	-	-	-	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	6%	-	-	0%	-	-	-	-	-	-	-	-	-	-	
FR_FR4 (RG_FOBSC)	n	45	45	40	55	45	45	45	45	45	45	45	45	45	45	45	45	45	45	
	Annual Minimum	156	8.2	7.4	9.6	112	0.58	0.0013	<0.005	23	0.11	0.11	<0.0001	0.0001	0.029	<0.00002	0.01	<0.0001	<0.0001	
	Annual Maximum	1340	8.5	9.4	102	318	31	0.081	0.071	644	17	0.39	0.00078	0.00029	0.11	0.000026	0.017	0.0013	0.00077	
	Annual Mean	859	8.4	8.4	32	219	19	0.012	0.013	385	5.6	0.17	0.00027	0.00014	0.071	0.00002	0.012	0.00021	0.00018	
	Annual Median	938	8.4	8.4	12	230	20	0.0086	0.0051	438	4.6	0.17	0.00024	0.00012	0.08	0.00002	0.012	0.00017	0.00011	
	% < LRL	0%	0%	0%	0%	0%	0.0%	2%	47%	0%	0%	0%	2%	13%	0%	98%	27%	9%	40%	
	% > BCWQG ^a	-	-	3%	0%	0%	98%	7%	0%	56%	0%	-	0%	-	0%	0%	0%	2%	0%	
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	0%	0%	-	-	0%	-	-	-	-	0%
	% > Level 1 Benchmark/UEC	42%	-	-	-	-	2%	-	-	4%	-	-	-	-	-	-	-	-	-	
	% > Level 2 Benchmark/UEC	-	-	-	-	-	2%	-	-	0%	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	2%	-	-	0%	-	-	-	-	-	-	-	-	-		
FR_FRCP1 (RG_FOBSCP)	n	47	47	48	75	47	47	47	47	47	47	47	47	47	47	47	47	47	47	
	Annual Minimum	311	8	6.6	8.9	145	6.6	0.001	<0.005	94	0.45	<0.1	0.00015	0.0001	0.033	<0.00002	<0.01	<0.0001	0.0001	
	Annual Maximum	1490	8.5	11	111	384	31	0.075	0.082	762	30	0.2	0.00083	0.00024	0.12	<0.00002	0.016	0.0028	0.00076	
	Annual Mean	862	8.3	8.3	38	225	20	0.012	0.013	391	6.5	0.16	0.00028	0.00015	0.074	<0.00002	0.013	0.00024	0.00018	
	Annual Median	892	8.3	8.3	12	225	20	0.0083	0.0054	394	5.4	0.17	0.00025	0.00014	0.08	<0.00002	0.013	0.00014	0.0001	
	% < LRL	0%	0%	0%	0%	0%	0.0%	4%	43%	0%	0%	4%	0%	4%	0%	100%	23%	13%	51%	
	% > BCWQG ^a	-	-	2%	0%	0%	100%	4%	0%	45%	0%	-	0%	-	0%	0%	0%	4%	0%	
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	0%	0%	-	-	0%	-	-	-	-	0%
	% > Level 1 Benchmark/UEC	36%	-	-	-	-	2%	-	-	4%	-	-	-	-	-	-	-	-	-	
	% > Level 2 Benchmark/UEC	-	-	-	-	-	2%	-	-	0%	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-		

> 5% of samples exceed the guideline or benchmark.
 > 50% of samples exceed the guideline or benchmark.
 > 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate and Sulphate, Proposed Benchmark for Dissolved Nickel, Level 1 Screening Value for Total Dissolved Solids, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

^a Long-term average BCQWG for the Protection of Aquatic Life.
^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, FRO LAEMP, 2022

Station	Summary Statistic	Total Dissolved Solids (mg/L)	Lab pH	Field pH	Dissolved Oxygen (mg/L)	Alkalinity (mg/L)	Nitrate-N (mg/L)	Nitrite-N (mg/L)	Ammonia (mg/L)	Sulphate (mg/L)	Total Chloride (mg/L)	Total Fluoride (mg/L)	Total Antimony (mg/L)	Total Arsenic (mg/L)	Total Barium (mg/L)	Total Beryllium (mg/L)	Total Boron (mg/L)	Total Chromium (mg/L)	Total Cobalt (ug/L)
FR_FRCP1SW (RG_FRCP1SW)	n	2	2	3	7	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Annual Minimum	380	8.2	0	0	176	8.5	0.0038	<0.005	109	0.86	0.17	0.00018	0.00014	0.034	<0.00002	<0.01	<0.0001	<0.0001
	Annual Maximum	893	8.4	8.4	87	248	20	0.0056	<0.005	388	7.2	0.18	0.00025	0.00014	0.086	<0.00002	0.014	0.00012	<0.0001
	Annual Mean	636	8.3	5.4	42	212	14	0.0047	<0.005	248	4	0.17	0.00022	0.00014	0.06	<0.00002	0.012	0.00011	<0.0001
	Annual Median	636	8.3	7.7	12	212	14	0.0047	<0.005	248	4	0.17	0.00022	0.00014	0.06	<0.00002	0.012	0.00011	<0.0001
	% < LRL	0%	0%	0%	0%	0%	0.0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	50%	50%	100%
	% > BCWQG ^a	-	-	33%	14%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	14%	-	0%	0%	0%	-	0%	0%	-	0%	-	-	-	-	-
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	
RG_FRSC2	n	6	6	6	12	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	Annual Minimum	401	7.9	7.2	7.7	187	11	0.0028	<0.005	137	1.1	0.11	<0.0001	<0.0001	0.042	<0.00002	<0.01	0.00011	<0.0001
	Annual Maximum	1100	8.2	8.1	83	272	30	0.0072	0.031	473	7.6	0.16	0.00022	0.00021	0.089	<0.00002	0.014	0.00022	0.00025
	Annual Mean	870	8	7.6	40	246	24	0.0035	0.0096	363	3.6	0.13	0.00014	0.00012	0.077	<0.00002	0.012	0.00016	0.00013
	Annual Median	912	7.9	7.6	36	255	27	0.0028	0.0052	389	3.4	0.13	0.00013	0.0001	0.082	<0.00002	0.012	0.00016	0.0001
	% < LRL	0%	0%	0%	0%	0%	0.0%	67%	50%	0%	0%	0%	50%	33%	0%	100%	17%	0%	67%
	% > BCWQG ^a	-	-	0%	8%	0%	100%	0%	0%	17%	0%	-	0%	-	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	0%	0%	-	0%	-	-	-	-	-
	% > Level 1 Benchmark/UEC	33%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	
FR_FRRD (RG_FRUPO)	n	20	20	21	35	20	20	20	20	20	20	20	20	20	20	20	20	20	20
	Annual Minimum	388	7.9	6.5	9	171	9.7	0.0018	<0.005	113	1.1	0.11	<0.0001	<0.0001	0.039	<0.00002	<0.01	0.00011	<0.0001
	Annual Maximum	1200	8.5	8.9	92	299	36	0.034	0.1	478	18	0.19	0.00019	0.00024	0.12	<0.00002	0.019	0.00028	0.00026
	Annual Mean	839	8.2	7.8	41	251	24	0.0055	0.012	332	5.6	0.15	0.00012	0.00013	0.084	<0.00002	0.015	0.00017	0.00011
	Annual Median	890	8.1	7.8	11	273	23	0.0042	0.005	378	3.2	0.15	0.0001	0.0001	0.09	<0.00002	0.016	0.00016	0.0001
	% < LRL	0%	0%	0%	0%	0%	0.0%	55%	70%	0%	0%	0%	45%	55%	0%	100%	15%	0%	85%
	% > BCWQG ^a	-	-	0%	0%	0%	100%	0%	0%	20%	0%	-	0%	-	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	-	20%	0%	0%	-	0%	0%	-	0%	-	-	-	-	-
	% > Level 1 Benchmark/UEC	25%	-	-	-	-	10%	-	-	0%	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	
GH_PC2 (RG_FODPO)	n	17	19	17	28	19	17	17	19	19	19	19	19	19	19	19	19	19	19
	Annual Minimum	356	7	7.5	8.8	156	8.8	0.0016	<0.005	125	1	<0.1	<0.0001	<0.0001	0.041	<0.00002	<0.01	0.00011	<0.0001
	Annual Maximum	1060	8.5	8.4	86	294	28	0.021	0.071	458	7.2	0.18	0.00042	0.00031	0.1	0.000023	0.014	0.00044	0.00038
	Annual Mean	818	8.1	7.8	37	243	22	0.0055	0.01	353	3.5	0.14	0.00015	0.00014	0.083	0.00002	0.012	0.00018	0.00014
	Annual Median	901	8.1	7.8	11	252	23	0.0043	0.005	385	3.3	0.14	0.00012	0.00011	0.088	0.00002	0.012	0.00014	0.0001
	% < LRL	0%	0%	0%	0%	0%	0.0%	53%	74%	0%	0%	5%	16%	42%	0%	95%	11%	0%	79%
	% > BCWQG ^a	-	-	0%	0%	0%	100%	0%	0%	26%	0%	-	0%	-	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	0%	0%	-	0%	-	-	-	-	-
	% > Level 1 Benchmark/UEC	6%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	
FR_FRABCH (RG_F022)	n	49	49	61	99	49	66	59	49	49	49	49	49	49	49	49	49	49	49
	Annual Minimum	377	7.6	6.8	4.8	158	6.9	0.0011	<0.005	115	0.87	<0.1	<0.0001	<0.0001	0.041	<0.00002	0.01	<0.0001	<0.0001
	Annual Maximum	1070	8.5	10	91	281	30	0.026	0.11	440	9.3	0.19	0.00032	0.00033	0.13	0.000037	0.016	0.00084	0.00038
	Annual Mean	793	8.2	8	37	236	21	0.0064	0.012	328	3.7	0.14	0.00015	0.00014	0.089	0.00002	0.012	0.0002	0.00013
	Annual Median	870	8.2	8	11	248	23	0.0057	0.005	356	3.3	0.14	0.00014	0.00011	0.096	0.00002	0.012	0.00015	0.0001
	% < LRL	0%	0%	0%	0%	0%	0.0%	41%	53%	0%	0%	6%	20%	33%	0%	98%	16%	6%	69%
	% > BCWQG ^a	-	-	2%	2%	0%	100%	2%	0%	4%	0%	-	0%	-	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	1%	-	0%	0%	0%	-	0%	0%	-	0%	-	-	-	-	-
	% > Level 1 Benchmark/UEC	4%	-	-	-	-	21%	-	-	0%	-	-	-	-	-	-	-	-	-
% > Level 2 Benchmark/UEC	-	-	-	-	-	17%	-	-	0%	-	-	-	-	-	-	-	-	-	
% > Level 3 Benchmark/UEC	-	-	-	-	-	2%	-	-	0%	-	-	-	-	-	-	-	-	-	

> 5% of samples exceed the guideline or benchmark.
 > 50% of samples exceed the guideline or benchmark.
 > 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate and Sulphate, Proposed Benchmark for Dissolved Nickel, Level 1 Screening Value for Total Dissolved Solids, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

^a Long-term average BCQWG for the Protection of Aquatic Life.
^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, FRO LAEMP, 2022

Station	Summary Statistic	Total Dissolved Solids (mg/L)	Lab pH	Field pH	Dissolved Oxygen (mg/L)	Alkalinity (mg/L)	Nitrate-N (mg/L)	Nitrite-N (mg/L)	Ammonia (mg/L)	Sulphate (mg/L)	Total Chloride (mg/L)	Total Fluoride (mg/L)	Total Antimony (mg/L)	Total Arsenic (mg/L)	Total Barium (mg/L)	Total Beryllium (mg/L)	Total Boron (mg/L)	Total Chromium (mg/L)	Total Cobalt (ug/L)	
RG_FOUW	n	5	5	6	12	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
	Annual Minimum	760	8.2	7.9	10	213	19	<0.005	<0.005	286	2	0.1	<0.0001	<0.0001	0.092	<0.00002	<0.01	0.00012	0.0001	
	Annual Maximum	953	8.4	8.2	83	259	28	0.0073	0.017	429	7.2	0.16	0.00011	0.00014	0.12	<0.00002	0.012	0.0003	0.0001	
	Annual Mean	840	8.3	8.1	46	240	24	0.0059	0.0083	362	4.1	0.13	0.0001	0.00011	0.1	<0.00002	0.012	0.00019	0.0001	
	Annual Median	848	8.3	8.1	45	242	25	0.0052	0.005	354	3.8	0.14	0.0001	0.0001	0.1	<0.00002	0.012	0.00018	0.0001	
	% < LRL	0%	0%	0%	0%	0%	0.0%	40%	60%	0%	0%	0%	40%	60%	0%	100%	20%	0%	80%	
	% > BCWQG ^a	-	-	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	0%	-	0%	-	-	0%	-	-	-	-	0%
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-	
FR_FR5	n	11	11	12	20	11	11	11	11	11	11	11	11	11	11	11	11	11	11	
	Annual Minimum	332	7.8	6.8	7.6	155	7.8	0.0016	<0.005	112	1.3	0.12	<0.0001	<0.0001	0.056	<0.00002	<0.01	0.00012	<0.0001	
	Annual Maximum	814	8.3	8.4	102	250	22	0.02	0.013	338	6.6	0.22	0.00024	0.00033	0.12	0.000033	0.012	0.00041	0.00042	
	Annual Mean	640	8.2	7.9	40	219	17	0.0061	0.0065	259	3.2	0.15	0.00013	0.00015	0.096	0.000021	0.011	0.00022	0.00014	
	Annual Median	691	8.2	8	12	229	19	0.0058	0.005	292	2.9	0.14	0.00012	0.00014	0.1	0.00002	0.011	0.00017	0.0001	
	% < LRL	0%	0%	0%	0%	0%	0.0%	18%	64%	0%	0%	0%	36%	36%	0%	91%	36%	0%	73%	
	% > BCWQG ^a	-	-	0%	5%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% > BCWQG ^b	-	-	-	0%	-	0%	0%	0%	-	0%	0%	-	-	0%	-	-	-	-	0%
	% > Level 1 Benchmark/UEC	0%	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
	% > Level 2 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-
% > Level 3 Benchmark/UEC	-	-	-	-	-	0%	-	-	0%	-	-	-	-	-	-	-	-	-	-	

> 5% of samples exceed the guideline or benchmark.
 > 50% of samples exceed the guideline or benchmark.
 > 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate and Sulphate, Proposed Benchmark for Dissolved Nickel, Level 1 Screening Value for Total Dissolved Solids, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis.

RG_FR5 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

^a Long-term average BCQWG for the Protection of Aquatic Life.
^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, FRO LAEMP, 2022

Station	Summary Statistic	Total Iron (mg/L)	Total Lead (mg/L)	Total Lithium (mg/L)	Total Manganese (mg/L)	Total Mercury (mg/L)	Total Molybdenum (mg/L)	Total Nickel (ug/L)	Total Selenium (ug/L)	Total Silver (mg/L)	Total Thallium (mg/L)	Total Uranium (mg/L)	Total Zinc (mg/L)	Dissolved Aluminum (mg/L)	Dissolved Cadmium (ug/L)	Dissolved Copper (mg/L)	Dissolved Iron (mg/L)	Dissolved Nickel (mg/L)		
FR_HC3 (RG_HENUP)	n	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	
	Annual Minimum	<0.01	<0.00005	<0.001	<0.0001	<0.0000005	0.00041	<0.5	0.47	<0.00001	<0.00001	0.00048	<0.003	<0.001	<0.005	<0.0002	<0.01	<0.5		
	Annual Maximum	0.012	<0.00005	0.0014	0.00051	<0.000005	0.0016	0.65	1.3	<0.00001	<0.00001	0.00099	<0.003	0.0044	0.0067	0.00025	<0.01	<0.5		
	Annual Mean	0.01	<0.00005	0.0011	0.00021	<0.0000005	0.0007	0.52	1	<0.00001	<0.00001	0.00084	<0.003	0.002	0.0055	0.0002	<0.01	<0.5		
	Annual Median	0.01	<0.00005	0.001	0.0001	<0.0000005	0.0006	0.5	1.1	<0.00001	<0.00001	0.0009	<0.003	0.0018	0.005	0.0002	<0.01	<0.5		
	% < LRL	92%	100%	62%	54%	100%	0%	85%	0%	100%	100%	0%	100%	15%	69%	92%	100%	100%		
	% > BCWQG ^a	-	0%	-	0%	69%	0%	-	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	0%	0%	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	0%
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	
RG_FO26	n	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	Annual Minimum	<0.01	<0.00005	0.0014	0.00019	<0.000005	0.00058	<0.5	0.39	<0.00001	<0.00001	0.00035	<0.003	<0.001	<0.005	<0.0002	<0.01	<0.5		
	Annual Maximum	0.028	<0.00005	0.0023	0.0019	<0.000005	0.00068	<0.5	0.8	<0.00001	<0.00001	0.00047	<0.003	0.0026	0.0088	<0.0002	<0.01	<0.5		
	Annual Mean	0.019	<0.00005	0.0018	0.0011	<0.000005	0.00063	<0.5	0.59	<0.00001	<0.00001	0.00041	<0.003	0.0018	0.0069	<0.0002	<0.01	<0.5		
	Annual Median	0.019	<0.00005	0.0018	0.0011	<0.000005	0.00063	<0.5	0.59	<0.00001	<0.00001	0.00041	<0.003	0.0018	0.0069	<0.0002	<0.01	<0.5		
	% < LRL	50%	100%	0%	0%	100%	0%	100%	0%	100%	100%	0%	100%	50%	50%	100%	100%	100%	100%	
	% > BCWQG ^a	-	0%	-	0%	100%	0%	-	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	0%	0%	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	0%
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	
FR_UFR1 (RG_UFR1)	n	36	36	36	36	35	36	36	36	36	36	36	36	36	36	36	36	36	12	
	Annual Minimum	<0.01	<0.00005	0.0011	0.00015	<0.0000005	0.00046	<0.5	0.39	<0.00001	<0.00001	0.00029	<0.003	<0.001	<0.005	<0.0002	<0.01	<0.5		
	Annual Maximum	0.85	0.001	0.0021	0.05	0.000014	0.00078	3.6	1.1	0.000079	0.000078	0.00055	0.032	0.064	0.055	0.00083	0.085	0.78		
	Annual Mean	0.071	0.00009	0.0015	0.0039	0.0000013	0.00061	0.62	0.76	0.000013	0.000012	0.00043	0.0043	0.0076	0.012	0.00025	0.015	0.52		
	Annual Median	0.026	0.00005	0.0015	0.001	0.00000063	0.0006	0.5	0.78	0.00001	0.00001	0.00045	0.003	0.0028	0.0092	0.0002	0.01	0.5		
	% < LRL	25%	78%	3%	0%	69%	0%	86%	0%	92%	89%	0%	86%	25%	3%	69%	78%	92%		
	% > BCWQG ^a	-	0%	-	0%	71%	0%	-	0%	3%	0%	0%	3%	3%	0%	0%	0%	-	-	
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	0%	0%	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	0%
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	
RG_FRGHC	n	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
	Annual Minimum	<0.01	<0.00005	0.052	0.00018	<0.0000005	0.00065	<0.5	70	<0.00001	<0.00001	0.0033	<0.003	<0.001	0.03	<0.0002	<0.01	<0.5		
	Annual Maximum	0.011	<0.00005	0.075	0.00046	<0.000005	0.00095	<0.5	119	<0.00001	<0.00001	0.0053	<0.003	0.022	0.048	0.018	<0.01	<0.5		
	Annual Mean	0.01	<0.00005	0.063	0.00029	<0.0000005	0.00078	<0.5	97	<0.00001	<0.00001	0.0045	<0.003	0.0045	0.041	0.0033	<0.01	<0.5		
	Annual Median	0.01	<0.00005	0.061	0.00023	<0.0000005	0.00078	<0.5	93	<0.00001	<0.00001	0.0048	<0.003	0.001	0.044	0.0002	<0.01	<0.5		
	% < LRL	83%	100%	0%	0%	100%	0%	100%	0%	100%	100%	0%	100%	83%	0%	67%	100%	100%		
	% > BCWQG ^a	-	0%	-	0%	50%	0%	-	100%	0%	0%	0%	0%	0%	0%	33%	-	-		
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	0%	-	-	-	0%	0%	0%	17%	0%	-	-	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	0%
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	
FR_FR1 (RG_FODHE)	n	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	9	
	Annual Minimum	<0.01	<0.00005	0.0029	0.00078	0.0000011	0.00053	<0.5	3.9	<0.00001	<0.00001	0.00048	<0.003	<0.001	0.0071	<0.0002	<0.01	<0.5		
	Annual Maximum	1	0.001	0.021	0.044	0.000013	0.0036	4.1	35	0.00008	0.000078	0.0016	0.017	0.052	0.057	0.00083	0.076	0.86		
	Annual Mean	0.091	0.00011	0.007	0.0056	0.0000027	0.00085	1	15	0.000014	0.000014	0.00089	0.0044	0.0096	0.021	0.00033	0.016	0.63		
	Annual Median	0.038	0.00005	0.0065	0.0029	0.0000028	0.0007	0.62	14	0.00001	0.00001	0.00084	0.003	0.0044	0.018	0.00024	0.01	0.56		
	% < LRL	26%	65%	0%	0%	83%	0%	22%	0%	87%	83%	0%	74%	9%	0%	39%	74%	22%		
	% > BCWQG ^a	-	0%	-	0%	96%	0%	-	100%	0%	0%	0%	0%	4%	0%	4%	-	-		
	% > BCWQG ^b	4%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	0%	-	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	0%
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	

> 5% of samples exceed the guideline or benchmark.
 > 50% of samples exceed the guideline or benchmark.
 > 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate and Sulphate, Proposed Benchmark for Dissolved Nickel, Level 1 Screening Value for Total Dissolved Solids, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

^a Long-term average BCQWG for the Protection of Aquatic Life.
^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, FRO LAEMP, 2022

Station	Summary Statistic	Total Iron (mg/L)	Total Lead (mg/L)	Total Lithium (mg/L)	Total Manganese (mg/L)	Total Mercury (mg/L)	Total Molybdenum (mg/L)	Total Nickel (ug/L)	Total Selenium (ug/L)	Total Silver (mg/L)	Total Thallium (mg/L)	Total Uranium (mg/L)	Total Zinc (mg/L)	Dissolved Aluminum (mg/L)	Dissolved Cadmium (ug/L)	Dissolved Copper (mg/L)	Dissolved Iron (mg/L)	Dissolved Nickel (mg/L)	
FR_FOUCL (RG_FOUCL)	n	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	Annual Minimum	<0.01	<0.00005	0.0034	0.00071	<0.000005	0.00063	0.66	6.2	<0.00001	<0.00001	0.00054	<0.003	<0.001	0.012	0.0002	<0.01	<0.5	
	Annual Maximum	0.034	<0.00005	0.012	0.0029	<0.000005	0.00078	1.4	37	<0.00001	<0.00001	0.0014	<0.003	0.003	0.027	0.0002	<0.01	1.3	
	Annual Mean	0.018	<0.00005	0.008	0.0015	<0.000005	0.00069	1	24	<0.00001	<0.00001	0.0011	<0.003	0.0018	0.02	0.0002	<0.01	0.84	
	Annual Median	0.01	<0.00005	0.0086	0.00083	<0.000005	0.00065	1	29	<0.00001	<0.00001	0.0012	<0.003	0.0013	0.021	0.0002	<0.01	0.68	
	% < LRL	67%	100%	0%	0%	100%	0%	0%	0%	100%	100%	0%	100%	33%	0%	67%	100%	33%	
	% > BCWQG ^a	-	0%	-	0%	100%	0%	-	100%	0%	0%	0%	0%	0%	0%	0%	-	-	
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	0%	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	0%
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	
RG_FOUNGD	n	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	Annual Minimum	<0.01	<0.00005	0.011	0.00044	<0.000005	0.00064	1.7	10	<0.00001	<0.00001	0.0008	<0.003	<0.001	0.024	<0.0002	<0.01	1.3	
	Annual Maximum	0.086	0.000062	0.089	0.0048	<0.000005	0.0011	7.9	76	<0.00001	0.00001	0.0042	0.006	0.0032	0.08	0.00022	<0.01	7.8	
	Annual Mean	0.043	0.000057	0.055	0.0026	<0.000005	0.00092	5.3	48	<0.00001	0.00001	0.0028	0.004	0.0019	0.061	0.00021	<0.01	5.1	
	Annual Median	0.032	0.00006	0.065	0.0027	<0.000005	0.00098	6.2	58	<0.00001	0.00001	0.0033	0.0032	0.0014	0.079	0.0002	<0.01	6.1	
	% < LRL	33%	33%	0%	0%	100%	0%	0%	0%	100%	67%	0%	33%	33%	0%	33%	100%	0%	
	% > BCWQG ^a	-	0%	-	0%	100%	0%	-	100%	0%	0%	0%	0%	0%	0%	0%	-	-	
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	0%	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	67%
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	
FR_FRABEC1 (RG_FODNGD)	n	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	12	
	Annual Minimum	<0.01	<0.00005	0.01	0.00051	<0.0000005	0.00063	2.6	10	<0.00001	<0.00001	0.00081	0.0032	0.001	0.024	<0.0002	<0.01	1.8	
	Annual Maximum	0.19	0.00015	0.13	0.033	0.0000014	0.0026	16	109	<0.00001	0.000017	0.0062	0.011	0.0037	0.24	0.0018	<0.01	16	
	Annual Mean	0.031	0.000059	0.07	0.0042	0.00000078	0.0013	8.6	72	<0.00001	0.000011	0.0037	0.0061	0.0018	0.11	0.00033	<0.01	8.3	
	Annual Median	0.013	0.00005	0.083	0.0016	0.00000058	0.0013	8.3	76	<0.00001	0.00001	0.0043	0.0046	0.0015	0.1	0.0002	<0.01	8.1	
	% < LRL	33%	80%	0%	0%	80%	0%	0%	0%	100%	53%	0%	0%	33%	0%	47%	100%	0%	
	% > BCWQG ^a	-	0%	-	0%	67%	0%	-	100%	0%	0%	0%	0%	0%	0%	7%	-	-	
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	0%	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	92%
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	
FR_MULTIPATE (RG_MP1)	n	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	4	
	Annual Minimum	<0.01	<0.00005	0.011	0.0011	<0.0000005	0.00067	2.3	12	<0.00001	0.00001	0.00086	<0.003	<0.001	0.03	<0.0002	<0.01	1.6	
	Annual Maximum	27	0.037	0.095	0.45	0.000023	0.014	84	100	0.00098	0.00063	0.0076	0.3	0.028	0.1	0.0029	0.032	8.7	
	Annual Mean	2.6	0.0035	0.079	0.046	0.0000024	0.0027	14	82	0.0001	0.00069	0.0047	0.032	0.0037	0.082	0.00044	0.012	5.6	
	Annual Median	0.035	0.000052	0.087	0.0042	0.0000006	0.0018	7.9	88	0.00001	0.00001	0.0048	0.0051	0.0013	0.093	0.00022	0.01	5.9	
	% < LRL	23%	46%	0%	0%	46%	0%	0%	0%	77%	31%	0%	8%	15%	0%	38%	92%	0%	
	% > BCWQG ^a	-	8%	-	0%	38%	0%	-	100%	0%	0%	0%	8%	0%	0%	23%	-	-	
	% > BCWQG ^b	15%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	-	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	75%
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	
FR_FRNTP (RG_FOUSH)	n	41	41	41	41	41	41	41	42	41	41	41	41	41	41	41	41	12	
	Annual Minimum	<0.01	<0.00005	0.011	0.001	<0.0000005	0.00061	1.7	10	<0.00001	<0.00001	0.00087	<0.003	<0.001	0.019	<0.0002	<0.01	2.2	
	Annual Maximum	1.5	0.0018	0.099	0.025	0.0000064	0.0042	16	107	0.00053	0.00066	0.0051	0.019	0.02	0.21	0.0042	0.06	13	
	Annual Mean	0.11	0.00014	0.059	0.0058	0.0000011	0.0015	7.1	68	0.00012	0.00013	0.0034	0.0062	0.0033	0.093	0.00045	0.012	6.6	
	Annual Median	0.038	0.00005	0.069	0.0044	0.00000069	0.0014	7.2	81	0.00001	0.00001	0.0041	0.0049	0.0025	0.084	0.00026	0.01	6.7	
	% < LRL	15%	54%	0%	0%	78%	0%	0%	0%	90%	51%	0%	5%	22%	0%	39%	90%	0%	
	% > BCWQG ^a	-	0%	-	0%	76%	0%	-	100%	0%	0%	0%	0%	0%	0%	5%	-	-	
	% > BCWQG ^b	2%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	-	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	75%
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	

> 5% of samples exceed the guideline or benchmark.
 > 50% of samples exceed the guideline or benchmark.
 > 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate and Sulphate, Proposed Benchmark for Dissolved Nickel, Level 1 Screening Value for Total Dissolved Solids, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

^a Long-term average BCQWG for the Protection of Aquatic Life.
^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, FRO LAEMP, 2022

Station	Summary Statistic	Total Iron (mg/L)	Total Lead (mg/L)	Total Lithium (mg/L)	Total Manganese (mg/L)	Total Mercury (mg/L)	Total Molybdenum (mg/L)	Total Nickel (ug/L)	Total Selenium (ug/L)	Total Silver (mg/L)	Total Thallium (mg/L)	Total Uranium (mg/L)	Total Zinc (mg/L)	Dissolved Aluminum (mg/L)	Dissolved Cadmium (ug/L)	Dissolved Copper (mg/L)	Dissolved Iron (mg/L)	Dissolved Nickel (mg/L)	
FR_FR2 (RG_FOUKI)	n	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	12
	Annual Minimum	0.01	<0.00005	0.012	0.0026	<0.0000005	0.00069	2.1	13	<0.00001	<0.00001	0.00096	<0.003	<0.001	0.033	<0.0002	<0.01	2.3	
	Annual Maximum	0.45	0.00043	0.094	0.041	0.000009	0.0045	14	110	0.000012	0.000019	0.0051	0.013	0.0073	3.8	0.002	0.029	12	
	Annual Mean	0.087	0.000083	0.057	0.014	0.0000084	0.0015	5.9	62	0.00001	0.000011	0.0034	0.0051	0.0026	0.16	0.00031	0.014	5.8	
	Annual Median	0.053	0.00005	0.074	0.014	0.0000062	0.0014	5.8	77	0.00001	0.00001	0.004	0.0043	0.0023	0.076	0.00026	0.011	5.8	
	% < LRL	0%	55%	0%	0%	76%	0%	0%	0%	94%	65%	0%	12%	20%	0%	29%	47%	0%	
	% > BCWQG ^a	-	0%	-	0%	59%	0%	-	100%	0%	0%	0%	0%	0%	2%	4%	-	-	
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	2%	0%	0%	-	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	2%	-	-	-	75%
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	
FR_FR3 (RG_FOBKS)	n	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	12
	Annual Minimum	0.017	<0.00005	0.011	0.003	<0.0000005	0.00074	2.4	14	<0.00001	<0.00001	0.0009	<0.003	<0.001	0.027	<0.0002	<0.01	1.7	
	Annual Maximum	0.26	0.00021	0.091	0.023	0.0000015	0.0054	11	94	<0.00001	0.000014	0.0052	0.0098	0.0076	0.15	0.00086	0.028	11	
	Annual Mean	0.079	0.000077	0.056	0.012	0.00000075	0.0015	5	59	<0.00001	0.00001	0.0034	0.0044	0.0023	0.064	0.00029	0.015	5.2	
	Annual Median	0.047	0.00005	0.064	0.011	0.0000061	0.0013	5.2	72	<0.00001	0.00001	0.0037	0.0036	0.0018	0.063	0.00022	0.01	5.3	
	% < LRL	0%	61%	0%	0%	71%	0%	0%	0%	100%	86%	0%	29%	21%	0%	39%	54%	0%	
	% > BCWQG ^a	-	0%	-	0%	68%	0%	-	100%	0%	0%	0%	0%	0%	0%	4%	-	-	
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	-	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	67%
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	
FR_SCOUTS (RG_SCOUTS)	n	60	60	60	60	60	60	60	72	60	60	60	60	60	60	60	60	60	12
	Annual Minimum	0.011	<0.00005	0.013	0.003	<0.0000005	0.0011	2.4	14	<0.00001	<0.00001	0.001	<0.003	<0.001	0.023	<0.0002	<0.01	2.5	
	Annual Maximum	0.22	0.00021	0.12	0.04	0.0000019	0.014	16	206	<0.00001	0.000023	0.0086	0.077	0.0092	0.26	0.0013	0.079	13	
	Annual Mean	0.05	0.000058	0.063	0.011	0.00000073	0.0048	7.5	73	<0.00001	0.000011	0.0047	0.0093	0.0035	0.094	0.00027	0.015	7.6	
	Annual Median	0.04	0.00005	0.074	0.01	0.0000051	0.0049	7	74	<0.00001	0.00001	0.0054	0.0052	0.0031	0.077	0.00024	0.01	7.8	
	% < LRL	0%	82%	0%	0%	53%	0%	0%	0%	100%	65%	0%	8%	30%	0%	73%	50%	0%	
	% > BCWQG ^a	-	0%	-	0%	22%	0%	-	100%	0%	0%	2%	0%	0%	0%	3%	-	-	
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	-	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	75%
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	
FR_FR4 (RG_FOBSC)	n	45	45	45	45	35	45	45	45	45	45	45	45	45	45	45	45	45	12
	Annual Minimum	0.018	<0.00005	0.0026	0.0033	<0.0000005	0.00048	<0.5	3.6	<0.00001	<0.00001	0.00051	<0.003	<0.001	0.0083	<0.0002	<0.01	3.5	
	Annual Maximum	0.43	0.00039	0.11	0.024	0.0000062	0.01	16	142	0.000012	0.00002	0.0073	0.011	0.022	0.21	0.00058	0.027	12	
	Annual Mean	0.063	0.000064	0.063	0.01	0.00000096	0.0046	7.9	77	0.00001	0.000012	0.0046	0.0059	0.0034	0.1	0.00028	0.015	7.5	
	Annual Median	0.048	0.00005	0.074	0.0095	0.0000051	0.0046	7.6	77	0.00001	0.00001	0.0054	0.0052	0.0027	0.091	0.00024	0.013	7.8	
	% < LRL	0%	73%	0%	0%	86%	0%	2%	0%	98%	58%	0%	11%	22%	0%	27%	44%	0%	
	% > BCWQG ^a	-	0%	-	0%	80%	0%	-	100%	0%	0%	0%	0%	0%	0%	9%	-	-	
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	-	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	75%
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	
FR_FRCP1 (RG_FOBSP)	n	47	47	47	47	39	47	47	47	47	47	47	47	47	47	47	47	47	11
	Annual Minimum	<0.01	<0.00005	0.021	0.0025	<0.0000005	0.0012	2.5	25	<0.00001	<0.00001	0.0016	<0.003	<0.001	0.035	0.0002	<0.01	3.3	
	Annual Maximum	0.29	0.00019	0.1	0.027	0.000002	0.015	15	132	0.00001	0.00002	0.0088	0.016	0.007	0.19	0.0012	0.036	13	
	Annual Mean	0.066	0.000069	0.065	0.0093	0.00000072	0.0049	7.5	77	0.00001	0.000011	0.0047	0.0056	0.0025	0.091	0.00032	0.013	7	
	Annual Median	0.039	0.00005	0.07	0.0074	0.000005	0.0049	7.5	76	0.00001	0.00001	0.0049	0.0047	0.002	0.082	0.00026	0.01	7	
	% < LRL	2%	68%	0%	0%	87%	0%	0%	0%	98%	66%	0%	13%	17%	0%	15%	57%	0%	
	% > BCWQG ^a	-	0%	-	0%	74%	0%	-	100%	0%	0%	2%	0%	0%	0%	4%	-	-	
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	-	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	73%
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	

> 5% of samples exceed the guideline or benchmark.
 > 50% of samples exceed the guideline or benchmark.
 > 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate and Sulphate, Proposed Benchmark for Dissolved Nickel, Level 1 Screening Value for Total Dissolved Solids, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis. RG_FR2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

^a Long-term average BCWQG for the Protection of Aquatic Life.
^b Short-term maximum BCWQG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, FRO LAEMP, 2022

Station	Summary Statistic	Total Iron (mg/L)	Total Lead (mg/L)	Total Lithium (mg/L)	Total Manganese (mg/L)	Total Mercury (mg/L)	Total Molybdenum (mg/L)	Total Nickel (ug/L)	Total Selenium (ug/L)	Total Silver (mg/L)	Total Thallium (mg/L)	Total Uranium (mg/L)	Total Zinc (mg/L)	Dissolved Aluminum (mg/L)	Dissolved Cadmium (ug/L)	Dissolved Copper (mg/L)	Dissolved Iron (mg/L)	Dissolved Nickel (mg/L)	
FR_FRCP1SW (RG_FRCP1SW)	n	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	Annual Minimum	0.02	<0.00005	0.026	0.0034	<0.000005	0.0014	3.6	31	<0.00001	<0.00001	0.002	<0.003	<0.001	0.055	<0.0002	<0.01	3.3	
	Annual Maximum	0.069	0.00007	0.07	0.0066	<0.000005	0.0051	6.2	65	<0.00001	<0.00001	0.0047	0.0041	0.003	0.081	0.00026	0.012	5.8	
	Annual Mean	0.044	0.00006	0.048	0.005	<0.000005	0.0033	4.9	48	<0.00001	<0.00001	0.0033	0.0036	0.002	0.068	0.00023	0.011	4.6	
	Annual Median	0.044	0.00006	0.048	0.005	<0.000005	0.0033	4.9	48	<0.00001	<0.00001	0.0033	0.0036	0.002	0.068	0.00023	0.011	4.6	
	% < LRL	0%	50%	0%	0%	100%	0%	0%	0%	100%	100%	0%	50%	50%	0%	50%	50%	50%	0%
	% > BCWQG ^a	-	0%	-	0%	100%	0%	-	100%	0%	0%	0%	0%	0%	0%	0%	0%	-	-
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	50%
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%
RG_FRSch2	n	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
	Annual Minimum	<0.01	<0.00005	0.028	0.00021	<0.0000005	0.00074	<0.5	35	<0.00001	<0.00001	0.0021	<0.003	<0.001	0.02	<0.0002	<0.01	<0.5	
	Annual Maximum	0.24	0.00031	0.061	0.024	0.00000055	0.0025	3.7	109	<0.00001	<0.00001	0.0048	0.0058	0.0036	0.064	0.00064	<0.01	2.6	
	Annual Mean	0.057	0.0001	0.051	0.0049	0.00000052	0.0013	1.5	88	<0.00001	<0.00001	0.004	0.0035	0.0016	0.036	0.00027	<0.01	1.1	
	Annual Median	0.01	0.00005	0.054	0.001	0.0000005	0.001	1	97	<0.00001	<0.00001	0.0042	0.003	0.001	0.033	0.0002	<0.01	0.87	
	% < LRL	67%	67%	0%	0%	83%	0%	17%	0%	100%	100%	0%	83%	67%	0%	83%	100%	33%	
	% > BCWQG ^a	-	0%	-	0%	50%	0%	-	100%	0%	0%	0%	0%	0%	0%	0%	0%	-	
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	0%	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	0%
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%
FR_FRRD (RG_FRUPO)	n	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	
	Annual Minimum	<0.01	<0.00005	0.026	0.00036	<0.0000005	0.00062	<0.5	36	<0.00001	<0.00001	0.002	<0.003	<0.001	0.036	<0.0002	<0.01	<0.5	
	Annual Maximum	0.16	0.00012	0.072	0.013	<0.000005	0.0018	5.3	119	<0.00001	0.00001	0.0051	0.0064	0.0043	0.08	0.00065	<0.01	4.4	
	Annual Mean	0.033	0.000059	0.056	0.0026	<0.0000005	0.00096	1.3	86	<0.00001	0.00001	0.004	0.0033	0.0016	0.047	0.00025	<0.01	1.1	
	Annual Median	0.01	0.00005	0.062	0.00078	<0.0000005	0.00078	0.5	86	<0.00001	0.00001	0.0042	0.003	0.001	0.044	0.0002	<0.01	0.5	
	% < LRL	65%	80%	0%	0%	100%	0%	60%	0%	100%	95%	0%	80%	60%	0%	65%	100%	58%	
	% > BCWQG ^a	-	0%	-	0%	70%	0%	-	100%	0%	0%	0%	0%	0%	0%	10%	-	-	
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	0%	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	0%
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%
GH_PC2 (RG_FODPO)	n	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	
	Annual Minimum	<0.01	<0.00005	0.022	0.00051	<0.0000005	0.00095	<0.5	35	<0.00001	<0.00001	0.0019	<0.003	<0.001	0.023	<0.0002	<0.01	<0.5	
	Annual Maximum	0.41	0.00033	0.067	0.029	<0.000005	0.0031	8	117	<0.00001	0.000016	0.0054	0.0096	0.0029	0.096	0.00032	<0.01	7.1	
	Annual Mean	0.057	0.00008	0.048	0.0044	<0.0000005	0.0017	2.3	87	<0.00001	0.00001	0.0038	0.004	0.0013	0.047	0.00022	<0.01	2.3	
	Annual Median	0.01	0.00005	0.05	0.0014	<0.0000005	0.0014	1.2	94	<0.00001	0.00001	0.004	0.003	0.001	0.037	0.0002	<0.01	2	
	% < LRL	53%	84%	0%	0%	100%	0%	11%	0%	100%	89%	0%	74%	58%	0%	74%	100%	17%	
	% > BCWQG ^a	-	0%	-	0%	58%	0%	-	100%	0%	0%	0%	0%	0%	0%	5%	-	-	
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	0%	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	8%
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%
FR_FRABCH (RG_FO22)	n	49	49	49	49	48	49	49	60	49	49	49	49	49	49	49	49	49	
	Annual Minimum	0.011	<0.00005	0.024	0.0033	<0.0000005	0.00076	0.52	31	<0.00001	<0.00001	0.0018	<0.003	<0.001	0.026	<0.0002	<0.01	<0.5	
	Annual Maximum	0.53	0.00049	0.063	0.04	0.0000053	0.0052	5.6	121	0.00001	0.000016	0.0046	0.016	0.0084	0.08	0.0024	0.096	4	
	Annual Mean	0.074	0.000086	0.045	0.01	0.00000064	0.0014	2.1	82	0.00001	0.00001	0.0036	0.0041	0.002	0.044	0.00029	0.013	1.7	
	Annual Median	0.032	0.00005	0.048	0.0074	0.0000005	0.0012	1.7	88	0.00001	0.00001	0.0037	0.003	0.0013	0.04	0.0002	0.01	1.5	
	% < LRL	0%	76%	0%	0%	94%	0%	0%	0%	98%	92%	0%	67%	41%	0%	61%	61%	8%	
	% > BCWQG ^a	-	0%	-	0%	62%	0%	-	100%	0%	0%	0%	0%	0%	0%	4%	-	-	
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	0%	
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	0%
% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%

> 5% of samples exceed the guideline or benchmark.
 > 50% of samples exceed the guideline or benchmark.
 > 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate and Sulphate, Proposed Benchmark for Dissolved Nickel, Level 1 Screening Value for Total Dissolved Solids, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis. RG_FRSch2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

^a Long-term average BCWQG for the Protection of Aquatic Life.
^b Short-term maximum BCWQG for the Protection of Aquatic Life.

Table D.3: Summary of Water Chemistry Data for Key Constituents at Monitoring Stations Monitoring Stations, FRO LAEMP, 2022

Station	Summary Statistic	Total Iron (mg/L)	Total Lead (mg/L)	Total Lithium (mg/L)	Total Manganese (mg/L)	Total Mercury (mg/L)	Total Molybdenum (mg/L)	Total Nickel (ug/L)	Total Selenium (ug/L)	Total Silver (mg/L)	Total Thallium (mg/L)	Total Uranium (mg/L)	Total Zinc (mg/L)	Dissolved Aluminum (mg/L)	Dissolved Cadmium (ug/L)	Dissolved Copper (mg/L)	Dissolved Iron (mg/L)	Dissolved Nickel (mg/L)	
RG_FOUW	n	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	Annual Minimum	0.011	<0.00005	0.04	0.0034	<0.0000005	0.00068	0.52	67	<0.00001	<0.00001	0.003	<0.003	<0.001	0.021	<0.0002	<0.01	<0.5	
	Annual Maximum	0.088	0.00013	0.048	0.0082	<0.000005	0.0014	1.2	99	<0.00001	<0.00001	0.004	<0.003	0.0011	0.039	0.00028	<0.01	1.2	
	Annual Mean	0.03	0.000065	0.044	0.0052	<0.0000005	0.00096	0.89	85	<0.00001	<0.00001	0.0036	<0.003	0.001	0.031	0.00022	<0.01	0.73	
	Annual Median	0.017	0.00005	0.043	0.0049	<0.0000005	0.00091	0.91	90	<0.00001	<0.00001	0.0037	<0.003	0.001	0.033	0.0002	<0.01	0.68	
	% < LRL	0%	80%	0%	0%	100%	0%	0%	0%	100%	100%	0%	100%	60%	0%	80%	100%	100%	20%
	% > BCWQG ^a	-	0%	-	0%	40%	0%	-	100%	0%	0%	0%	0%	0%	0%	0%	0%	-	-
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	
FR_FR5	n	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
	Annual Minimum	<0.01	<0.00005	0.018	0.0015	<0.0000005	0.00072	<0.5	31	<0.00001	<0.00001	0.0016	<0.003	<0.001	0.02	<0.0002	<0.01	<0.5	
	Annual Maximum	0.43	0.00045	0.041	0.041	<0.000005	0.0041	3.5	86	<0.00001	0.000013	0.0034	0.0075	0.003	0.058	0.00022	<0.01	3.1	
	Annual Mean	0.077	0.000097	0.034	0.0072	<0.0000005	0.0014	1.7	67	<0.00001	0.00001	0.0028	0.0035	0.0016	0.032	0.0002	<0.01	1.3	
	Annual Median	0.015	0.00005	0.037	0.0022	<0.0000005	0.0012	1.8	72	<0.00001	0.00001	0.003	0.003	0.001	0.028	0.0002	<0.01	1.3	
	% < LRL	27%	73%	0%	0%	100%	0%	9%	0%	100%	91%	0%	64%	55%	0%	82%	100%	100%	18%
	% > BCWQG ^a	-	0%	-	0%	64%	0%	-	100%	0%	0%	0%	0%	0%	0%	0%	0%	-	-
	% > BCWQG ^b	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	0%	0%	0%	0%	-
	% > Level 1 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%
	% > Level 2 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%
% > Level 3 Benchmark/UEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	

- > 5% of samples exceed the guideline or benchmark.
- > 50% of samples exceed the guideline or benchmark.
- > 95% of samples exceed the guideline or benchmark.

Notes: "UEC" = Updated Effects Concentration. "LRL" = laboratory reporting limit. "BCWQG" = British Columbia Working or Accepted Water Quality Guideline. UEC's are shown for Nitrate and Sulphate, Proposed Benchmark for Dissolved Nickel, Level 1 Screening Value for Total Dissolved Solids, and EVWQP benchmarks are shown for all other relevant parameters. For guidelines dependent on other analytes (e.g., hardness or chloride), guidelines were screened using concurrent concentrations. When concurrent hardness or chloride concentrations were not measured, the most conservative concentration observed for that station was used to estimate the guidelines or benchmark. All summary statistics are reported to 3 significant figures. When biological monitoring areas and routine water quality stations were in close proximity to each other and with no additional inputs between them, data collected at the biological monitoring area were combined with routine data and tabulated together with the biological monitoring area depicted in parenthesis. RG_FR5 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

^a Long-term average BCQWG for the Protection of Aquatic Life.

^b Short-term maximum BCQWG for the Protection of Aquatic Life.

Table D.4: Statistical Comparison of Water Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Nitrate (as N)	FR_SCOUTDS (RG_SCOUTDS)	<0.001	<0.001	0.535	<0.001	0.883	2020 2021	0.535	ns
	FR_FR4 (RG_FOBSC)	<0.001	0.076	0.647	0.268	0.999	2018 2019 2020 2021	0.647	ns
	FR_FRCP1 (RG_FOBBCP)	<0.001	<0.001	0.363	<0.001	0.988	2018 2019 2020 2021	0.363	ns
	FR_FRRD (RG_FRUPO)	0.007	<0.001	0.003	<0.001	0.998	2018 2019 2020 2021	0.003	-18
	GH_PC2 (RG_FODPO)	<0.001	<0.001	0.163	0.016	0.997	2018 2019 2020 2021	0.163	ns
	FR_FRABCH (RG_FO22)	<0.001	<0.001	0.003	<0.001	0.998	2018 2019 2020 2021	0.003	-14
	RG_FOU EW	0.006	0.487	-	-	0.008	2018 2019 2020 2021	0.999 0.002 0.96 0.723	ns 139 ns ns
	FR_FR5	<0.001	<0.001	0.084	<0.001	0.952	2018 2019 2020 2021	0.084	-16
	Nitrite (as N)	FR_SCOUTDS (RG_SCOUTDS)	<0.001	0.631	0.275	0.614	0.997	2020 2021	0.275
FR_FR4 (RG_FOBSC)		<0.001	0.244	0.107	0.035	0.999	2018 2019 2020 2021	0.107	ns
FR_FRCP1 (RG_FOBBCP)		0.019	0.299	0.039	<0.001	0.880	2018 2019 2020 2021	0.039	80
FR_FRRD (RG_FRUPO)		0.004	<0.001	0.013	0.995	0.810	2018 2019 2020 2021	0.013	91
GH_PC2 (RG_FODPO)		0.003	<0.001	0.152	0.440	0.997	2018 2019 2020 2021	0.152	ns
FR_FRABCH (RG_FO22)		0.148	<0.001	<0.001	0.125	0.791	2018 2019 2020 2021	<0.001	131
RG_FOU EW		<0.001	<0.001	0.419	0.930	0.913	2018 2019 2020 2021	0.419	ns
FR_FR5		0.002	<0.001	0.022	0.996	0.669	2018 2019 2020 2021	0.022	91

- P-Value < 0.1.
- MOD > 25 %.
- MOD < -25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (ie., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table D.4: Statistical Comparison of Water Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Phosphorus (P)-Total	FR_SCOUTDS (RG_SCOUTDS)	<0.001	0.007	0.013	0.994	0.836	2020 2021	0.013	81
	FR_FR4 (RG_FOBSC)	<0.001	0.006	0.060	0.640	0.999	2018 2019 2020 2021	0.060	59
	FR_FRCP1 (RG_FOBBCP)	<0.001	0.193	0.005	0.899	0.989	2018 2019 2020 2021	0.005	94
	FR_FRRD (RG_FRUPO)	0.007	0.224	0.575	0.753	0.907	2018 2019 2020 2021	0.575	ns
	GH_PC2 (RG_FODPO)	0.002	0.315	0.927	0.999	0.709	2018 2019 2020 2021	0.927	ns
	FR_FRABCH (RG_FO22)	<0.001	0.492	0.969	0.991	0.887	2018 2019 2020 2021	0.969	ns
	RG_FOU EW	0.170	0.131	0.716	0.875	0.752	2018 2019 2020 2021	0.716	ns
	FR_FR5	0.007	0.474	0.530	0.978	0.576	2018 2019 2020 2021	0.530	ns
Orthophosphate	FR_SCOUTDS (RG_SCOUTDS)	<0.001	<0.001	<0.001	0.774	0.502	2020 2021	<0.001	596
	FR_FR4 (RG_FOBSC)	0.145	<0.001	<0.001	0.770	0.876	2018 2019 2020 2021	<0.001	256
	FR_FRCP1 (RG_FOBBCP)	0.665	0.033	<0.001	0.969	0.595	2018 2019 2020 2021	<0.001	231
	FR_FRRD (RG_FRUPO)	<0.001	<0.001	0.114	0.267	0.909	2018 2019 2020 2021	0.114	ns
	GH_PC2 (RG_FODPO)	<0.001	<0.001	0.844	0.027	0.995	2018 2019 2020 2021	0.844	ns
	FR_FRABCH (RG_FO22)	<0.001	0.001	0.492	0.036	0.935	2018 2019 2020 2021	0.492	ns
	RG_FOU EW	0.005	0.655	0.467	0.167	0.956	2018 2019 2020 2021	0.467	ns
	FR_FR5	0.002	0.785	0.792	0.057	0.951	2018 2019 2020 2021	0.792	ns

- P-Value < 0.1.
- MOD > 25 %.
- MOD < -25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (ie., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table D.4: Statistical Comparison of Water Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Sulphate	FR_SCOUTDS (RG_SCOUTDS)	<0.001	<0.001	0.979	0.715	0.135	2020 2021	0.979	ns
	FR_FR4 (RG_FOBSC)	<0.001	<0.001	0.647	0.004	0.587	2018 2019 2020 2021	0.647	ns
	FR_FRCP1 (RG_FOBBCP)	0.118	<0.001	0.168	<0.001	0.479	2018 2019 2020 2021	0.168	ns
	FR_FRRD (RG_FRUPO)	<0.001	<0.001	0.699	<0.001	0.934	2018 2019 2020 2021	0.699	ns
	GH_PC2 (RG_FODPO)	0.004	<0.001	0.171	0.022	0.631	2018 2019 2020 2021	0.171	ns
	FR_FRABCH (RG_FO22)	<0.001	<0.001	0.566	<0.001	0.661	2018 2019 2020 2021	0.566	ns
	RG_FOU EW	0.004	0.044	0.570	<0.001	0.161	2018 2019 2020 2021	0.570	ns
	FR_FR5	0.020	0.003	0.360	0.050	0.999	2018 2019 2020 2021	0.360	ns
	Total Dissolved Solids	FR_SCOUTDS (RG_SCOUTDS)	<0.001	<0.001	0.961	0.998	0.262	2020 2021	0.961
FR_FR4 (RG_FOBSC)		<0.001	<0.001	0.311	0.003	0.420	2018 2019 2020 2021	0.311	ns
FR_FRCP1 (RG_FOBBCP)		0.603	<0.001	0.234	<0.001	0.681	2018 2019 2020 2021	0.234	ns
FR_FRRD (RG_FRUPO)		0.042	<0.001	0.995	<0.001	0.720	2018 2019 2020 2021	0.995	ns
GH_PC2 (RG_FODPO)		0.062	<0.001	0.438	0.436	0.671	2018 2019 2020 2021	0.438	ns
FR_FRABCH (RG_FO22)		0.177	<0.001	0.273	<0.001	0.917	2018 2019 2020 2021	0.273	ns
RG_FOU EW		0.060	0.005	0.365	0.002	0.261	2018 2019 2020 2021	0.365	ns
FR_FR5		0.361	0.002	0.241	0.361	0.990	2018 2019 2020 2021	0.241	ns

- P-Value < 0.1.
- MOD > 25 %.
- MOD < -25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (ie., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table D.4: Statistical Comparison of Water Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Antimony (Sb)-Total	FR_SCOUTDS (RG_SCOUTDS)	<0.001	0.009	0.587	0.161	0.954	2020 2021	0.587	ns
	FR_FR4 (RG_FOBSC)	<0.001	0.020	0.613	0.110	0.989	2018 2019 2020 2021	0.613	ns
	FR_FRCP1 (RG_FOBBCP)	<0.001	<0.001	0.582	0.098	0.936	2018 2019 2020 2021	0.582	ns
	FR_FRRD (RG_FRUPO)	<0.001	<0.001	0.551	0.999	0.952	2018 2019 2020 2021	0.551	ns
	GH_PC2 (RG_FODPO)	0.049	<0.001	0.048	0.450	0.994	2018 2019 2020 2021	0.048	35
	FR_FRABCH (RG_FO22)	0.131	<0.001	<0.001	0.075	0.995	2018 2019 2020 2021	<0.001	41
	RG_FOU EW	0.003	<0.001	0.950	0.479	0.999	2018 2019 2020 2021	0.950	ns
	FR_FR5	0.012	<0.001	0.015	0.764	0.973	2018 2019 2020 2021	0.015	39
	Barium (Ba)-Total	FR_SCOUTDS (RG_SCOUTDS)	0.429	<0.001	0.716	0.671	0.994	2020 2021	0.716
FR_FR4 (RG_FOBSC)		0.169	0.005	0.547	0.015	0.929	2018 2019 2020 2021	0.547	ns
FR_FRCP1 (RG_FOBBCP)		0.222	<0.001	0.206	<0.001	0.559	2018 2019 2020 2021	0.206	ns
FR_FRRD (RG_FRUPO)		<0.001	<0.001	0.013	0.675	0.604	2018 2019 2020 2021	0.013	-9.6
GH_PC2 (RG_FODPO)		0.138	<0.001	0.700	0.223	0.990	2018 2019 2020 2021	0.700	ns
FR_FRABCH (RG_FO22)		<0.001	<0.001	0.870	0.185	0.961	2018 2019 2020 2021	0.870	ns
RG_FOU EW		0.959	0.044	-	-	0.021	2018 2019 2020 2021	0.594 <0.001 0.309 0.037	ns 73 ns 39
FR_FR5		0.145	<0.001	0.867	0.960	0.833	2018 2019 2020 2021	0.867	ns

- P-Value < 0.1.
- MOD > 25 %.
- MOD < -25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (ie., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table D.4: Statistical Comparison of Water Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Boron (B)-Total	FR_SCOUTDS (RG_SCOUTDS)	0.375	0.974	0.015	<0.001	0.808	2020 2021	0.015	8.8
	FR_FR4 (RG_FOBSC)	0.518	0.371	0.078	<0.001	0.920	2018 2019 2020 2021	0.078	8.1
	FR_FRCP1 (RG_FOBBCP)	0.141	0.443	0.013	<0.001	0.999	2018 2019 2020 2021	0.013	15
	FR_FRRD (RG_FRUPO)	0.750	<0.001	0.065	<0.001	0.152	2018 2019 2020 2021	0.065	9.7
	GH_PC2 (RG_FODPO)	0.724	0.123	-	-	0.075	2018 2019 2020 2021	0.561 0.144 0.45 0.022	ns ns ns 14
	FR_FRABCH (RG_FO22)	0.523	0.755	-	-	0.005	2018 2019 2020 2021	0.801 0.164 0.03 0.003	ns ns 9.6 13
	RG_FOU EW	0.401	0.044	0.585	<0.001	0.922	2018 2019 2020 2021	0.585	ns
	FR_FR5	0.937	<0.001	0.024	<0.001	0.215	2018 2019 2020 2021	0.024	11
	Iron (Fe)-Total	FR_SCOUTDS (RG_SCOUTDS)	0.336	0.059	0.133	0.932	0.986	2020 2021	0.133
FR_FR4 (RG_FOBSC)		0.940	0.329	0.936	0.851	0.747	2018 2019 2020 2021	0.936	ns
FR_FRCP1 (RG_FOBBCP)		0.117	<0.001	0.711	0.007	0.726	2018 2019 2020 2021	0.711	ns
FR_FRRD (RG_FRUPO)		0.211	<0.001	0.355	0.992	0.790	2018 2019 2020 2021	0.355	ns
GH_PC2 (RG_FODPO)		0.612	<0.001	-	-	0.041	2018 2019 2020 2021	0.455 0.126 0.611 0.123	ns ns ns ns
FR_FRABCH (RG_FO22)		0.247	<0.001	0.784	0.262	0.953	2018 2019 2020 2021	0.784	ns
RG_FOU EW		0.881	<0.001	0.778	0.725	0.783	2018 2019 2020 2021	0.778	ns
FR_FR5		0.666	<0.001	0.328	0.696	0.948	2018 2019 2020 2021	0.328	ns

- P-Value < 0.1.
- MOD > 25 %.
- MOD < -25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (ie., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table D.4: Statistical Comparison of Water Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Lithium (Li)-Total	FR_SCOUTDS (RG_SCOUTDS)	<0.001	<0.001	0.015	<0.001	0.809	2020 2021	0.015	14
	FR_FR4 (RG_FOBSC)	<0.001	0.002	0.193	<0.001	0.982	2018 2019 2020 2021	0.193	ns
	FR_FRCP1 (RG_FOBBCP)	<0.001	<0.001	0.202	<0.001	0.842	2018 2019 2020 2021	0.202	ns
	FR_FRRD (RG_FRUPO)	<0.001	0.018	0.728	<0.001	0.999	2018 2019 2020 2021	0.728	ns
	GH_PC2 (RG_FODPO)	<0.001	0.053	0.877	<0.001	0.998	2018 2019 2020 2021	0.877	ns
	FR_FRABCH (RG_FO22)	<0.001	<0.001	0.917	<0.001	0.929	2018 2019 2020 2021	0.917	ns
	RG_FOU EW	0.001	<0.001	-	-	0.015	2018 2019 2020 2021	0.988 0.003 0.919 0.81	ns 97 ns ns
	FR_FR5	<0.001	<0.001	0.976	<0.001	0.718	2018 2019 2020 2021	0.976	ns
	Manganese (Mn)-Total	FR_SCOUTDS (RG_SCOUTDS)	<0.001	0.033	0.958	0.627	0.955	2020 2021	0.958
FR_FR4 (RG_FOBSC)		<0.001	0.061	0.461	0.140	0.513	2018 2019 2020 2021	0.461	ns
FR_FRCP1 (RG_FOBBCP)		0.988	<0.001	0.145	<0.001	0.469	2018 2019 2020 2021	0.145	ns
FR_FRRD (RG_FRUPO)		0.003	<0.001	0.964	0.999	0.937	2018 2019 2020 2021	0.964	ns
GH_PC2 (RG_FODPO)		0.456	<0.001	-	-	0.072	2018 2019 2020 2021	0.053 0.607 0.085 0.878	196 ns 108 ns
FR_FRABCH (RG_FO22)		0.577	<0.001	0.002	0.176	0.995	2018 2019 2020 2021	0.002	58
RG_FOU EW		0.020	<0.001	0.746	0.099	0.211	2018 2019 2020 2021	0.746	ns
FR_FR5		0.282	<0.001	0.018	0.571	0.698	2018 2019 2020 2021	0.018	82

- P-Value < 0.1.
- MOD > 25 %.
- MOD < -25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (ie., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table D.4: Statistical Comparison of Water Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Molybdenum (Mo)-Total	FR_SCOUTDS (RG_SCOUTDS)	<0.001	<0.001	<0.001	0.944	0.999	2020 2021	<0.001	85
	FR_FR4 (RG_FOBSC)	<0.001	<0.001	<0.001	0.002	0.610	2018 2019 2020 2021	<0.001	106
	FR_FRCP1 (RG_FOBBCP)	<0.001	<0.001	<0.001	<0.001	0.502	2018 2019 2020 2021	<0.001	111
	FR_FRRD (RG_FRUPO)	0.148	<0.001	0.090	0.621	0.995	2018 2019 2020 2021	0.090	21
	GH_PC2 (RG_FODPO)	0.487	0.013	0.007	0.659	0.465	2018 2019 2020 2021	0.007	55
	FR_FRABCH (RG_FO22)	<0.001	<0.001	<0.001	<0.001	0.608	2018 2019 2020 2021	<0.001	70
	RG_FOU EW	0.140	<0.001	0.430	0.556	0.897	2018 2019 2020 2021	0.430 0.430 0.430 0.430	ns ns ns ns
	FR_FR5	0.967	<0.001	<0.001	0.490	0.931	2018 2019 2020 2021	<0.001	77
Nickel (Ni)-Total	FR_SCOUTDS (RG_SCOUTDS)	0.001	<0.001	0.054	0.528	0.648	2020 2021	0.054	-13
	FR_FR4 (RG_FOBSC)	0.653	<0.001	0.651	<0.001	0.799	2018 2019 2020 2021	0.651	ns
	FR_FRCP1 (RG_FOBBCP)	0.332	<0.001	0.066	0.002	0.487	2018 2019 2020 2021	0.066	-28
	FR_FRRD (RG_FRUPO)	0.007	<0.001	0.025	0.973	0.760	2018 2019 2020 2021	0.025	-42
	GH_PC2 (RG_FODPO)	0.211	<0.001	0.190	0.082	0.636	2018 2019 2020 2021	0.190	ns
	FR_FRABCH (RG_FO22)	0.032	<0.001	0.052	<0.001	0.481	2018 2019 2020 2021	0.052	32
	RG_FOU EW	0.825	<0.001	0.261	0.112	0.808	2018 2019 2020 2021	0.261	ns
	FR_FR5	0.402	<0.001	0.201	0.512	0.969	2018 2019 2020 2021	0.201	ns

- P-Value < 0.1.
- MOD > 25 %.
- MOD < -25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (ie., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table D.4: Statistical Comparison of Water Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Selenium (Se)-Total	FR_SCOUTDS (RG_SCOUTDS)	0.664	<0.001	<0.001	0.999	0.247	2020 2021	<0.001	-29
	FR_FR4 (RG_FOBSC)	0.135	<0.001	0.084	0.008	0.624	2018 2019 2020 2021	0.084	-16
	FR_FRCP1 (RG_FOBBCP)	0.410	<0.001	<0.001	<0.001	0.499	2018 2019 2020 2021	<0.001	-46
	FR_FRRD (RG_FRUPO)	0.004	<0.001	<0.001	<0.001	0.705	2018 2019 2020 2021	<0.001	-20
	GH_PC2 (RG_FODPO)	0.001	<0.001	<0.001	0.113	0.737	2018 2019 2020 2021	<0.001	-26
	FR_FRABCH (RG_FO22)	0.002	<0.001	<0.001	<0.001	0.609	2018 2019 2020 2021	<0.001	-21
	RG_FOU EW	<0.001	<0.001	0.002	0.006	0.999	2018 2019 2020 2021	0.002	2.0
	FR_FR5	<0.001	<0.001	0.002	0.059	0.996	2018 2019 2020 2021	0.002	-24
Uranium (U)-Total	FR_SCOUTDS (RG_SCOUTDS)	<0.001	<0.001	0.762	0.212	0.178	2020 2021	0.762	ns
	FR_FR4 (RG_FOBSC)	<0.001	<0.001	0.366	0.005	0.333	2018 2019 2020 2021	0.366	ns
	FR_FRCP1 (RG_FOBBCP)	0.423	<0.001	0.347	<0.001	0.488	2018 2019 2020 2021	0.347	ns
	FR_FRRD (RG_FRUPO)	0.072	<0.001	0.614	<0.001	0.838	2018 2019 2020 2021	0.614	ns
	GH_PC2 (RG_FODPO)	0.094	<0.001	0.587	0.096	0.994	2018 2019 2020 2021	0.587	ns
	FR_FRABCH (RG_FO22)	0.004	<0.001	0.912	<0.001	0.885	2018 2019 2020 2021	0.912	ns
	RG_FOU EW	0.076	0.381	0.123	<0.001	0.282	2018 2019 2020 2021	0.123	ns
	FR_FR5	0.132	0.040	0.835	0.171	0.852	2018 2019 2020 2021	0.835	ns

- P-Value < 0.1.
- MOD > 25 %.
- MOD < -25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (ie., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table D.4: Statistical Comparison of Water Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Zinc (Zn)-Total	FR_SCOUTDS (RG_SCOUTDS)	0.024	<0.001	0.051	0.999	0.912	2020 2021	0.051	-29
	FR_FR4 (RG_FOBSC)	0.163	<0.001	0.046	0.002	0.175	2018 2019 2020 2021	0.046	-20
	FR_FRCP1 (RG_FOBBCP)	0.003	<0.001	0.024	<0.001	0.301	2018 2019 2020 2021	0.024	-18
	FR_FRRD (RG_FRUPO)	0.206	<0.001	0.090	0.336	0.820	2018 2019 2020 2021	0.090	41
	GH_PC2 (RG_FODPO)	0.070	0.035	0.260	0.985	0.998	2018 2019 2020 2021	0.260	ns
	FR_FRABCH (RG_FO22)	0.086	<0.001	0.204	0.503	0.993	2018 2019 2020 2021	0.204	ns
	RG_FOU EW	0.089	<0.001	0.390	0.937	0.999	2018 2019 2020 2021	0.390	ns
	FR_FR5	0.056	0.005	0.468	0.997	0.839	2018 2019 2020 2021	0.468	ns
Cadmium (Cd)-Dissolved	FR_SCOUTDS (RG_SCOUTDS)	0.074	<0.001	-	-	0.098	2020 2021	0.135 <0.001	ns -45
	FR_FR4 (RG_FOBSC)	0.010	<0.001	-	-	<0.001	2018 2019 2020 2021	0.016 0.044 0.607 0.024	122 95 ns -38
	FR_FRCP1 (RG_FOBBCP)	<0.001	0.635	-	-	<0.001	2018 2019 2020 2021	<0.001 <0.001 0.997 0.082	312 160 ns -39
	FR_FRRD (RG_FRUPO)	0.025	0.036	-	-	0.013	2018 2019 2020 2021	0.99 0.849 0.05 <0.001	ns ns -23 -38
	GH_PC2 (RG_FODPO)	0.011	<0.001	-	-	0.026	2018 2019 2020 2021	0.671 0.984 0.94 0.004	ns ns ns -39
	FR_FRABCH (RG_FO22)	<0.001	<0.001	-	-	<0.001	2018 2019 2020 2021	0.534 0.885 0.93 <0.001	ns ns ns -39
	RG_FOU EW	0.013	<0.001	0.324	0.286	0.134	2018 2019 2020 2021	0.324	ns
	FR_FR5	0.009	<0.001	-	-	0.054	2018 2019 2020 2021	0.518 0.979 0.81 0.111	ns ns ns ns

- P-Value < 0.1.
- MOD > 25 %.
- MOD < -25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (ie., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table D.4: Statistical Comparison of Water Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Cobalt (Co)-Dissolved	FR_SCOUTDS (RG_SCOUTDS)	<0.001	0.179	0.052	<0.001	0.989	2020	0.052	47
						2021			
	FR_FR4 (RG_FOBSC)	<0.001	0.632	0.077	<0.001	0.999	2018	0.077	48
						2019			
						2020			
						2021			
	FR_FRCP1 (RG_FOBBCP)	<0.001	0.006	0.018	<0.001	0.999	2018	0.018	87
						2019			
						2020			
						2021			
FR_FRRD (RG_FRUPO)	<0.001	0.004	-	-	<0.001	2018	0.618	ns	
						2019	0.002	-75	
						2020	0.86	ns	
						2021	0.068	140	
GH_PC2 (RG_FODPO)	<0.001	<0.001	-	-	0.003	2018	1	ns	
						2019	0.062	-61	
						2020	0.98	ns	
						2021	0.026	150	
FR_FRABCH (RG_FO22)	<0.001	<0.001	-	-	<0.001	2018	0.658	ns	
						2019	0.008	-52	
						2020	0.34	ns	
						2021	<0.001	286	
RG_FOU EW	<0.001	<0.001	0.778	<0.001	0.263	2018	0.778	ns	
						2019			
						2020			
						2021			
FR_FR5	<0.001	<0.001	-	-	0.003	2018	1	ns	
						2019	0.085	-73	
						2020	0.90	ns	
						2021	1	ns	
Iron (Fe)-Dissolved	FR_SCOUTDS (RG_SCOUTDS)	0.625	0.055	0.877	0.400	0.983	2020	0.877	ns
							2021		
	FR_FR4 (RG_FOBSC)	0.002	0.123	0.336	<0.001	0.856	2018	0.336	ns
							2019		
							2020		
							2021		
	FR_FRCP1 (RG_FOBBCP)	0.040	<0.001	0.940	<0.001	0.745	2018	0.940	ns
							2019		
							2020		
							2021		
FR_FRRD (RG_FRUPO)	0.484	<0.001	0.332	0.005	0.993	2018	0.332	ns	
						2019			
						2020			
						2021			
GH_PC2 (RG_FODPO)	0.370	<0.001	0.264	0.020	0.268	2018	0.264	ns	
						2019			
						2020			
						2021			
FR_FRABCH (RG_FO22)	0.037	<0.001	0.225	0.089	0.912	2018	0.225	ns	
						2019			
						2020			
						2021			
RG_FOU EW	0.388	<0.001	0.219	0.001	0.909	2018	0.219	ns	
						2019			
						2020			
						2021			
FR_FR5	0.555	<0.001	0.287	0.003	0.991	2018	0.287	ns	
						2019			
						2020			
						2021			

- P-Value < 0.1.
- MOD > 25 %.
- MOD < -25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (ie., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table D.4: Statistical Comparison of Water Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Nickel (Ni)-Dissolved	FR_SCOUTDS (RG_SCOUTDS)	0.010	<0.001	0.198	0.331	0.381	2020 2021	0.198	ns
	FR_FR4 (RG_FOBSC)	0.712	<0.001	0.702	<0.001	0.664	2018 2019 2020 2021	0.702	ns
	FR_FRCP1 (RG_FOBBCP)	0.353	<0.001	0.085	0.016	0.393	2018 2019 2020 2021	0.085	-27
	FR_FRRD (RG_FRUPO)	0.010	<0.001	0.036	0.783	0.661	2018 2019 2020 2021	0.036	-43
	GH_PC2 (RG_FODPO)	0.313	<0.001	0.280	0.099	0.860	2018 2019 2020 2021	0.280	ns
	FR_FRABCH (RG_FO22)	0.032	<0.001	0.038	<0.001	0.592	2018 2019 2020 2021	0.038	36
	RG_FOU EW	0.944	<0.001	0.057	0.238	0.982	2018 2019 2020 2021	0.057	-34
	FR_FR5	0.660	<0.001	0.333	0.117	0.575	2018 2019 2020 2021	0.333	ns
Selenium (Se)-Dissolved	FR_SCOUTDS (RG_SCOUTDS)	0.123	<0.001	<0.001	0.999	0.517	2020 2021	<0.001	-35
	FR_FR4 (RG_FOBSC)	0.054	<0.001	0.071	0.009	0.656	2018 2019 2020 2021	0.071	-17
	FR_FRCP1 (RG_FOBBCP)	0.595	<0.001	<0.001	0.001	0.350	2018 2019 2020 2021	<0.001	-46
	FR_FRRD (RG_FRUPO)	<0.001	<0.001	<0.001	<0.001	0.676	2018 2019 2020 2021	<0.001	-20
	GH_PC2 (RG_FODPO)	<0.001	<0.001	<0.001	0.179	0.658	2018 2019 2020 2021	<0.001	-27
	FR_FRABCH (RG_FO22)	0.003	<0.001	<0.001	0.002	0.208	2018 2019 2020 2021	<0.001	-25
	RG_FOU EW	<0.001	<0.001	0.009	0.002	0.984	2018 2019 2020 2021	0.009	3.8
	FR_FR5	<0.001	<0.001	0.003	0.060	0.998	2018 2019 2020 2021	0.003	-25

- P-Value < 0.1.
- MOD > 25 %.
- MOD < -25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (ie., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table D.4: Statistical Comparison of Water Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Ammonia, Total (as N)	FR_SCOUTDS (RG_SCOUTDS)	<0.001	0.231	0.825	0.999	0.999	2020 2021	0.825	ns
	FR_FR4 (RG_FOBSC)	<0.001	0.442	0.280	0.712	0.992	2018 2019 2020 2021	0.280	ns
	FR_FRCP1 (RG_FOBBCP)	<0.001	0.465	0.111	0.028	0.999	2018 2019 2020 2021	0.111	ns
	FR_FRRD (RG_FRUPO)	<0.001	<0.001	0.164	0.695	0.808	2018 2019 2020 2021	0.164	ns
	GH_PC2 (RG_FODPO)	<0.001	<0.001	0.575	0.995	0.960	2018 2019 2020 2021	0.575	ns
	FR_FRABCH (RG_FO22)	<0.001	<0.001	0.004	0.579	0.821	2018 2019 2020 2021	0.004	117
	RG_FOU EW	<0.001	0.030	0.584	0.996	0.973	2018 2019 2020 2021	0.584	ns
	FR_FR5	<0.001	0.002	0.416	0.998	0.711	2018 2019 2020 2021	0.416	ns
	Total Organic Carbon	FR_SCOUTDS (RG_SCOUTDS)	<0.001	0.050	0.030	0.986	0.774	2020 2021	0.030
FR_FR4 (RG_FOBSC)		0.014	0.257	0.453	0.950	0.999	2018 2019 2020 2021	0.453	ns
FR_FRCP1 (RG_FOBBCP)		0.040	0.007	0.134	0.043	0.886	2018 2019 2020 2021	0.134	ns
FR_FRRD (RG_FRUPO)		0.003	<0.001	0.003	0.783	0.833	2018 2019 2020 2021	0.003	-49
GH_PC2 (RG_FODPO)		0.034	<0.001	0.274	0.494	0.917	2018 2019 2020 2021	0.274	ns
FR_FRABCH (RG_FO22)		0.048	<0.001	0.226	0.025	0.480	2018 2019 2020 2021	0.226	ns
RG_FOU EW		0.060	0.005	0.018	0.804	0.982	2018 2019 2020 2021	0.018	-65
FR_FR5		0.128	<0.001	0.440	0.977	0.998	2018 2019 2020 2021	0.440	ns

- P-Value < 0.1.
- MOD > 25 %.
- MOD < -25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (ie., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table D.4: Statistical Comparison of Water Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Dissolved Organic Carbon	FR_SCOUTDS (RG_SCOUTDS)	<0.001	<0.001	0.107	0.750	0.956	2020 2021	0.107	ns
	FR_FR4 (RG_FOBSC)	0.010	0.003	0.442	0.997	0.982	2018 2019 2020 2021	0.442	ns
	FR_FRCP1 (RG_FOBBCP)	0.003	<0.001	0.215	0.003	0.992	2018 2019 2020 2021	0.215	ns
	FR_FRRD (RG_FRUPO)	0.009	0.025	0.054	0.103	0.635	2018 2019 2020 2021	0.054	-27
	GH_PC2 (RG_FODPO)	0.022	<0.001	0.565	0.842	0.997	2018 2019 2020 2021	0.565	ns
	FR_FRABCH (RG_FO22)	0.005	0.166	0.469	0.010	0.831	2018 2019 2020 2021	0.469	ns
	RG_FOU EW	0.208	0.045	0.898	0.800	0.904	2018 2019 2020 2021	0.898	ns
	FR_FR5	0.130	0.047	0.749	0.962	0.997	2018 2019 2020 2021	0.749	ns
	Se(VI) - Selenate	FR_SCOUTDS (RG_SCOUTDS)	0.902	<0.001	<0.001	0.979	0.484	2020 2021	<0.001
FR_FR4 (RG_FOBSC)		0.023	<0.001	0.054	0.016	0.935	2018 2019 2020 2021	0.054	-21
FR_FRCP1 (RG_FOBBCP)		0.610	<0.001	0.004	0.949	0.113	2018 2019 2020 2021	0.004	-55
FR_FRRD (RG_FRUPO)		0.004	<0.001	0.006	0.009	0.625	2018 2019 2020 2021	0.006	-27
GH_PC2 (RG_FODPO)		0.002	<0.001	0.028	0.078	0.574	2018 2019 2020 2021	0.028	-24
FR_FRABCH (RG_FO22)		0.018	<0.001	0.002	0.095	0.634	2018 2019 2020 2021	0.002	-34
RG_FOU EW		0.075	<0.001	<0.001	0.003	0.999	2018 2019 2020 2021	<0.001	-20

P-Value < 0.1.
 MOD > 25%.
 MOD < -25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table D.4: Statistical Comparison of Water Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Se(IV) - Selenite	FR_SCOUTDS (RG_SCOUTDS)	<0.001	<0.001	0.292	0.997	0.999	2020 2021	0.292	ns
	FR_FR4 (RG_FOBSC)	0.015	0.035	0.985	0.936	0.996	2018 2019 2020 2021	0.985	ns
	FR_FRCP1 (RG_FOBBCP)	0.001	0.069	0.951	0.427	0.591	2018 2019 2020 2021	0.951	ns
	FR_FRRD (RG_FRUPO)	0.116	<0.001	0.883	0.922	0.807	2018 2019 2020 2021	0.883	ns
	GH_PC2 (RG_FODPO)	0.477	<0.001	0.770	0.831	0.567	2018 2019 2020 2021	0.770	ns
	FR_FRABCH (RG_FO22)	0.343	<0.001	0.239	0.870	0.600	2018 2019 2020 2021	0.239	ns
	RG_FOU EW	0.247	<0.001	0.101	0.725	0.894	2018 2019 2020 2021	0.101	ns
MeSe(IV) - Methylseleninic Acid	FR_SCOUTDS (RG_SCOUTDS)	<0.001	<0.001	0.121	0.299	0.999	2020 2021	0.121	ns
	FR_FR4 (RG_FOBSC)	0.003	<0.001	0.099	0.886	0.999	2018 2019 2020 2021	0.099	-19
	FR_FRCP1 (RG_FOBBCP)	0.190	0.018	0.226	0.836	0.337	2018 2019 2020 2021	0.226	ns
	FR_FRRD (RG_FRUPO)	0.525	0.066	0.999	0.781	0.999	2018 2019 2020 2021	0.999	ns
	GH_PC2 (RG_FODPO)	0.950	0.697	0.356	0.790	0.760	2018 2019 2020 2021	0.356	ns
	FR_FRABCH (RG_FO22)	0.112	0.946	0.277	0.626	0.114	2018 2019 2020 2021	0.277	ns
	RG_FOU EW	0.248	0.667	0.262	0.663	0.999	2018 2019 2020 2021	0.262	ns

- P-Value < 0.1.
- MOD > 25 %.
- MOD < -25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (ie., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

APPENDIX E
HYDROLOGY

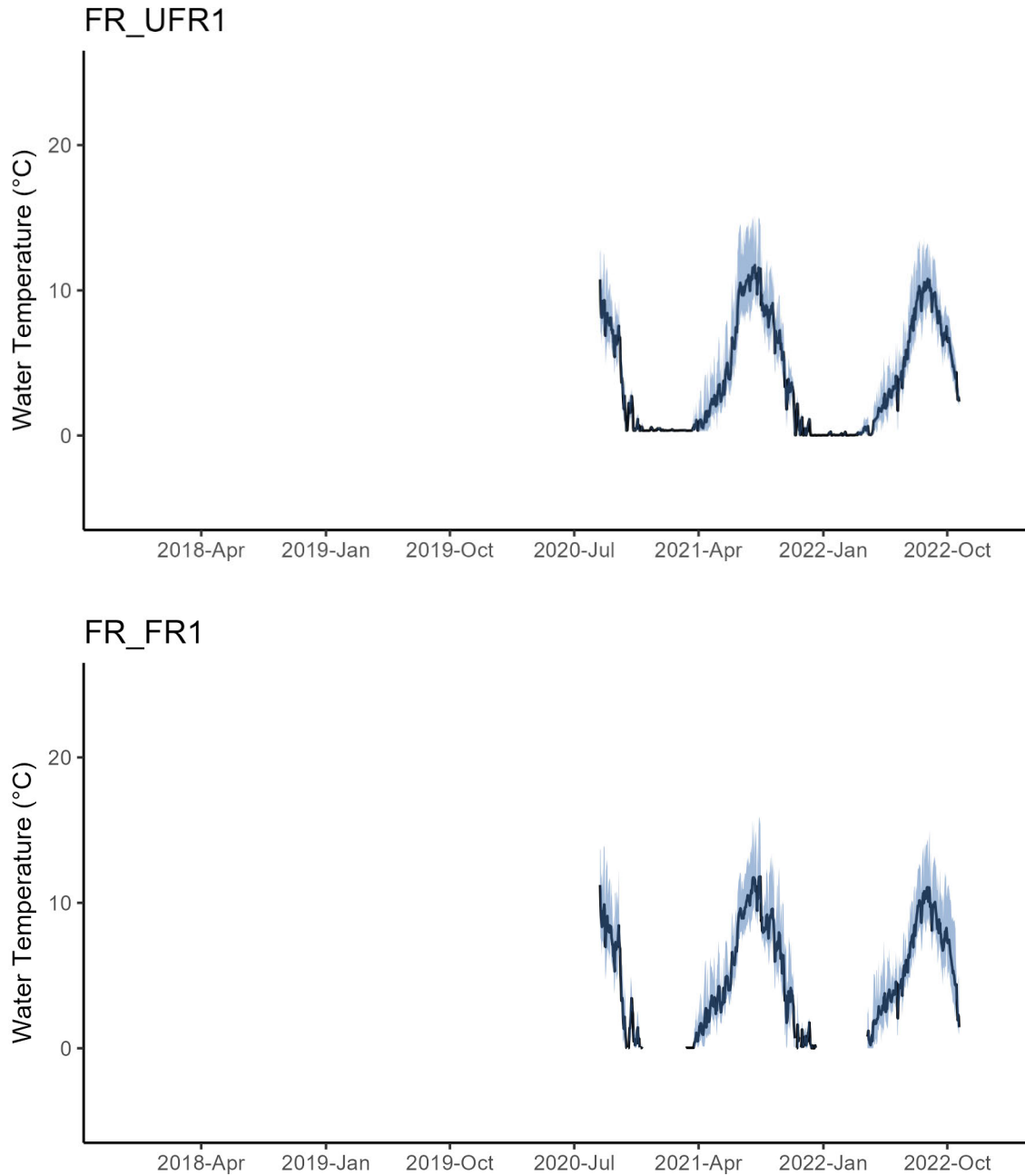


Figure E.1: Continuous Water Temperature Logging in the Fording River, 2022

Notes: Black line represents average daily water temperature. Blue line represents maximum and minimum daily water temperature. Gaps in data are due to logger corruption, loss of logger due to environmental conditions and/or values below 0°C. Areas with a constant temperature of ~0°C during the winter represent periods where the loggers were entombed in ice. Data loggers were installed at FR_UFR1, FR_FR1, FR_FRDSCC1, and FR_SCOUTDS in summer of 2020 and the data logger at FR_FOUCL was installed in the spring of 2021.

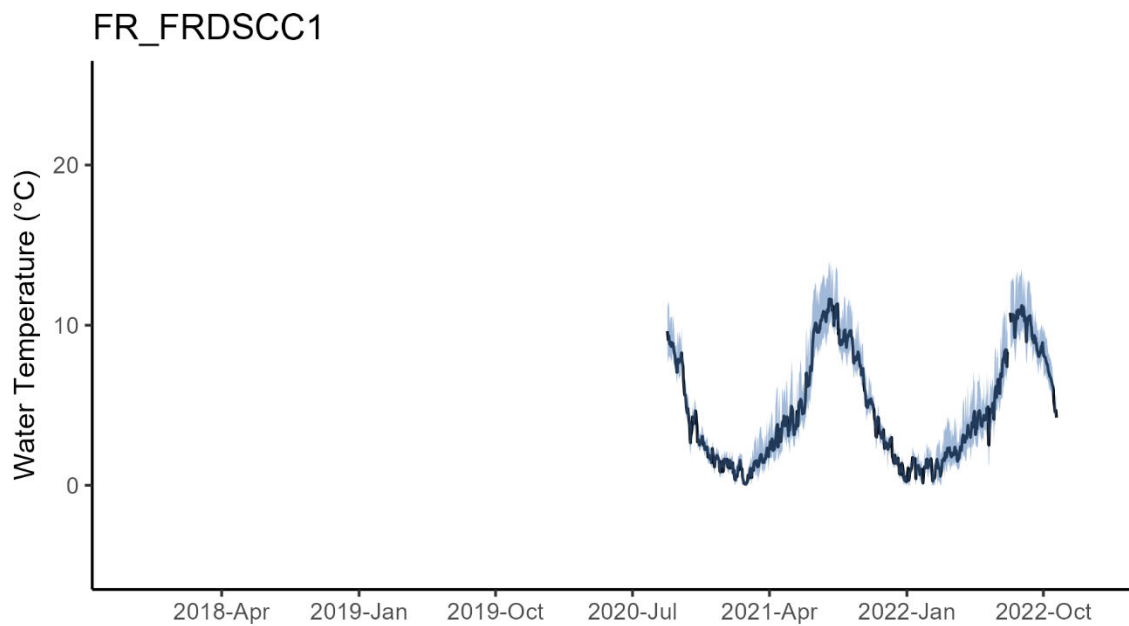
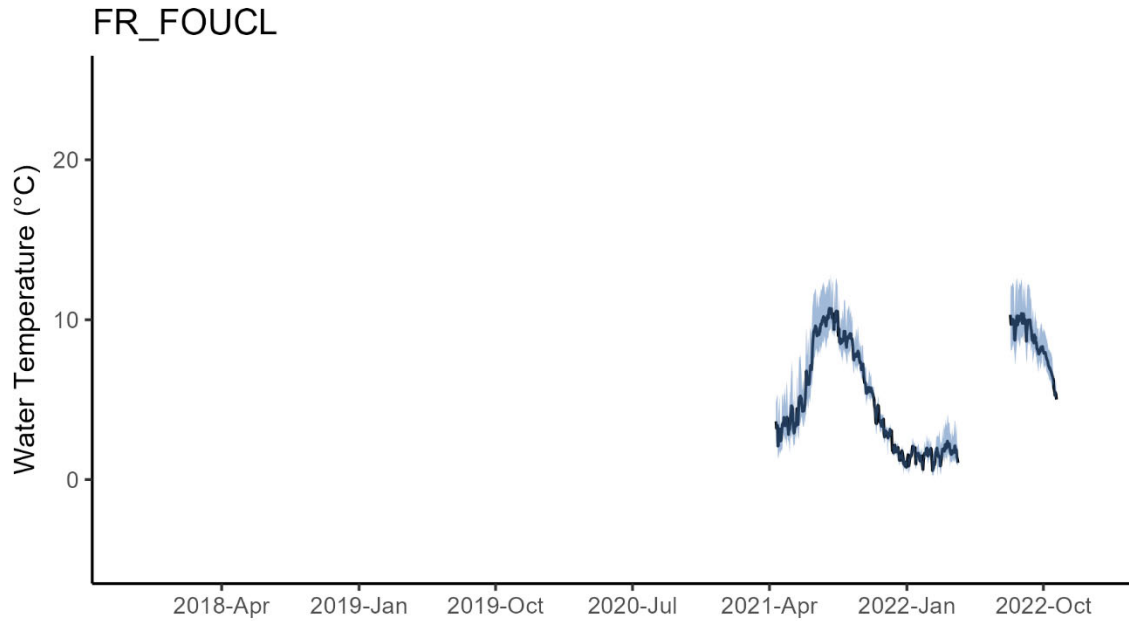


Figure E.1: Continuous Water Temperature Logging in the Fording River, 2022

Notes: Black line represents average daily water temperature. Blue line represents maximum and minimum daily water temperature. Gaps in data are due to logger corruption, loss of logger due to environmental conditions and/or values below 0°C. Areas with a constant temperature of ~0°C during the winter represent periods where the loggers were entombed in ice. Data loggers were installed at FR_UFR1, FR_FR1, FR_FRDSCC1, and FR_SCOUTDS in summer of 2020 and the data logger at FR_FOUCL was installed in the spring of 2021.

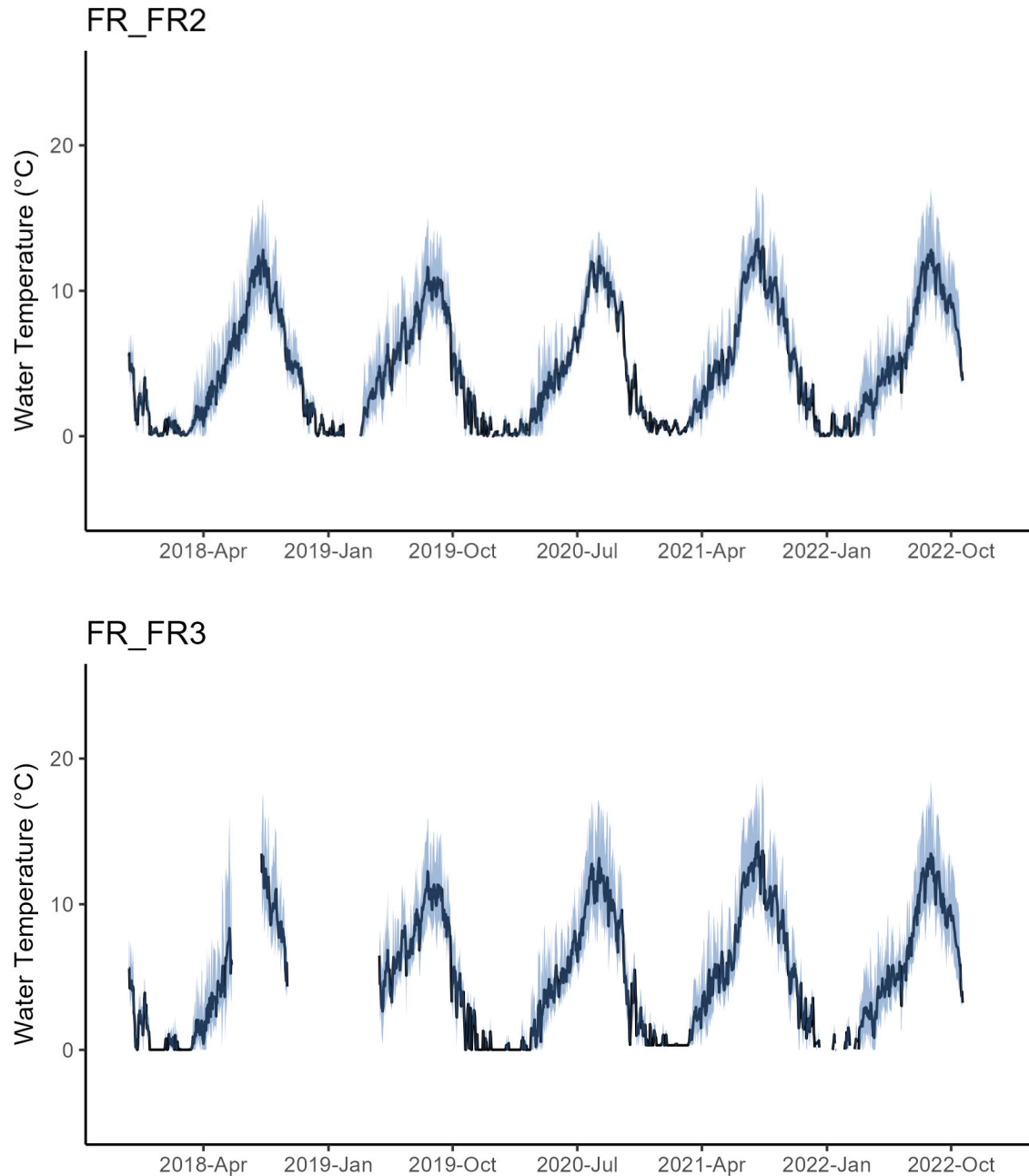


Figure E.1: Continuous Water Temperature Logging in the Fording River, 2022

Notes: Black line represents average daily water temperature. Blue line represents maximum and minimum daily water temperature. Gaps in data are due to logger corruption, loss of logger due to environmental conditions and/or values below 0°C. Areas with a constant temperature of ~0°C during the winter represent periods where the loggers were entombed in ice. Data loggers were installed at FR_UFR1, FR_FR1, FR_FRDSCC1, and FR_SCOUTDS in summer of 2020 and the data logger at FR_FOUCL was installed in the spring of 2021.

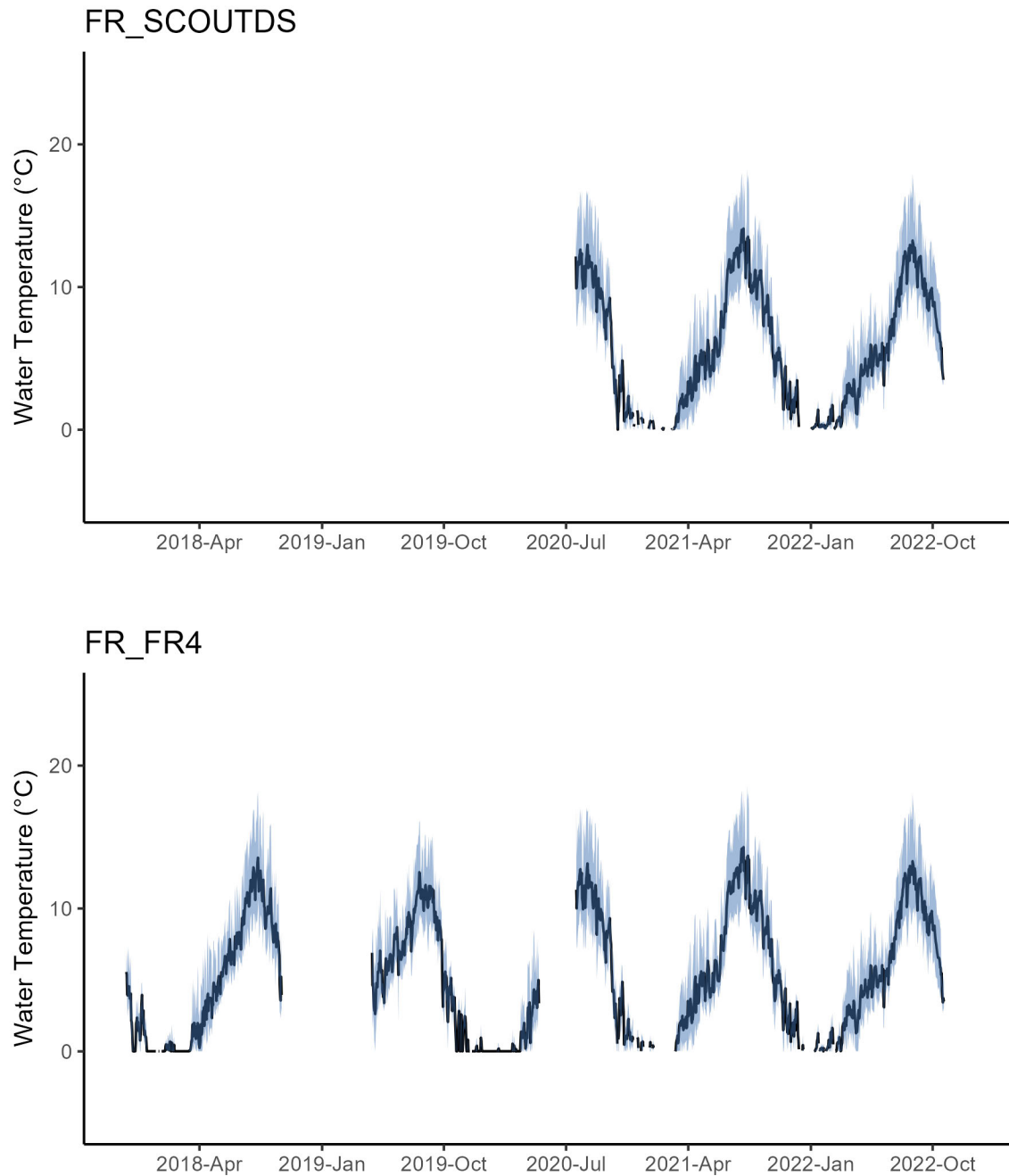


Figure E.1: Continuous Water Temperature Logging in the Fording River, 2022

Notes: Black line represents average daily water temperature. Blue line represents maximum and minimum daily water temperature. Gaps in data are due to logger corruption, loss of logger due to environmental conditions and/or values below 0°C. Areas with a constant temperature of ~0°C during the winter represent periods where the loggers were entombed in ice. Data loggers were installed at FR_UFR1, FR_FR1, FR_FRDSCC1, and FR_SCOUTDS in summer of 2020 and the data logger at FR_FOUCL was installed in the spring of 2021.

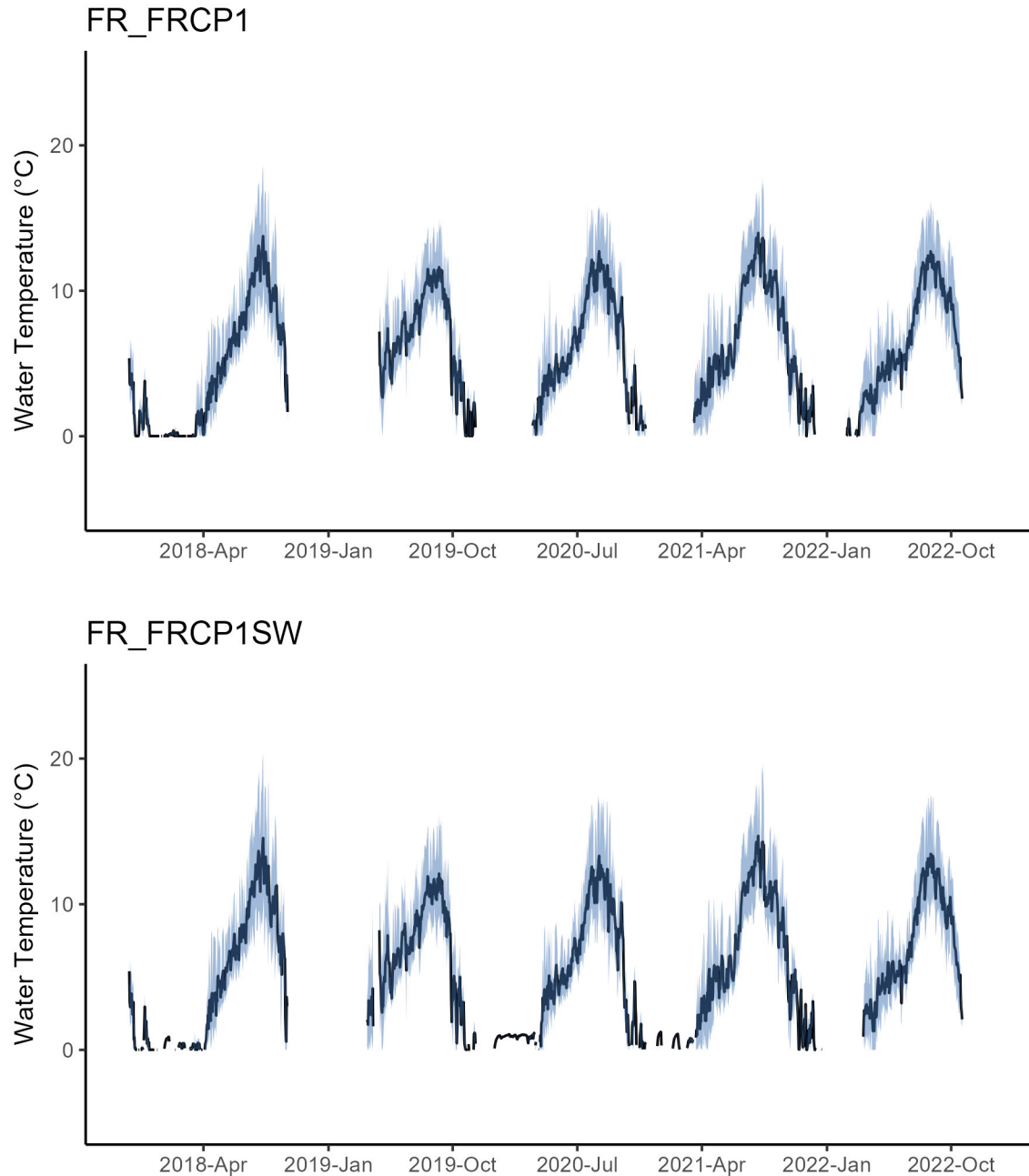


Figure E.1: Continuous Water Temperature Logging in the Fording River, 2022

Notes: Black line represents average daily water temperature. Blue line represents maximum and minimum daily water temperature. Gaps in data are due to logger corruption, loss of logger due to environmental conditions and/or values below 0°C. Areas with a constant temperature of ~0°C during the winter represent periods where the loggers were entombed in ice. Data loggers were installed at FR_UFR1, FR_FR1, FR_FRDSCC1, and FR_SCOUTDS in summer of 2020 and the data logger at FR_FOUCL was installed in the spring of 2021.

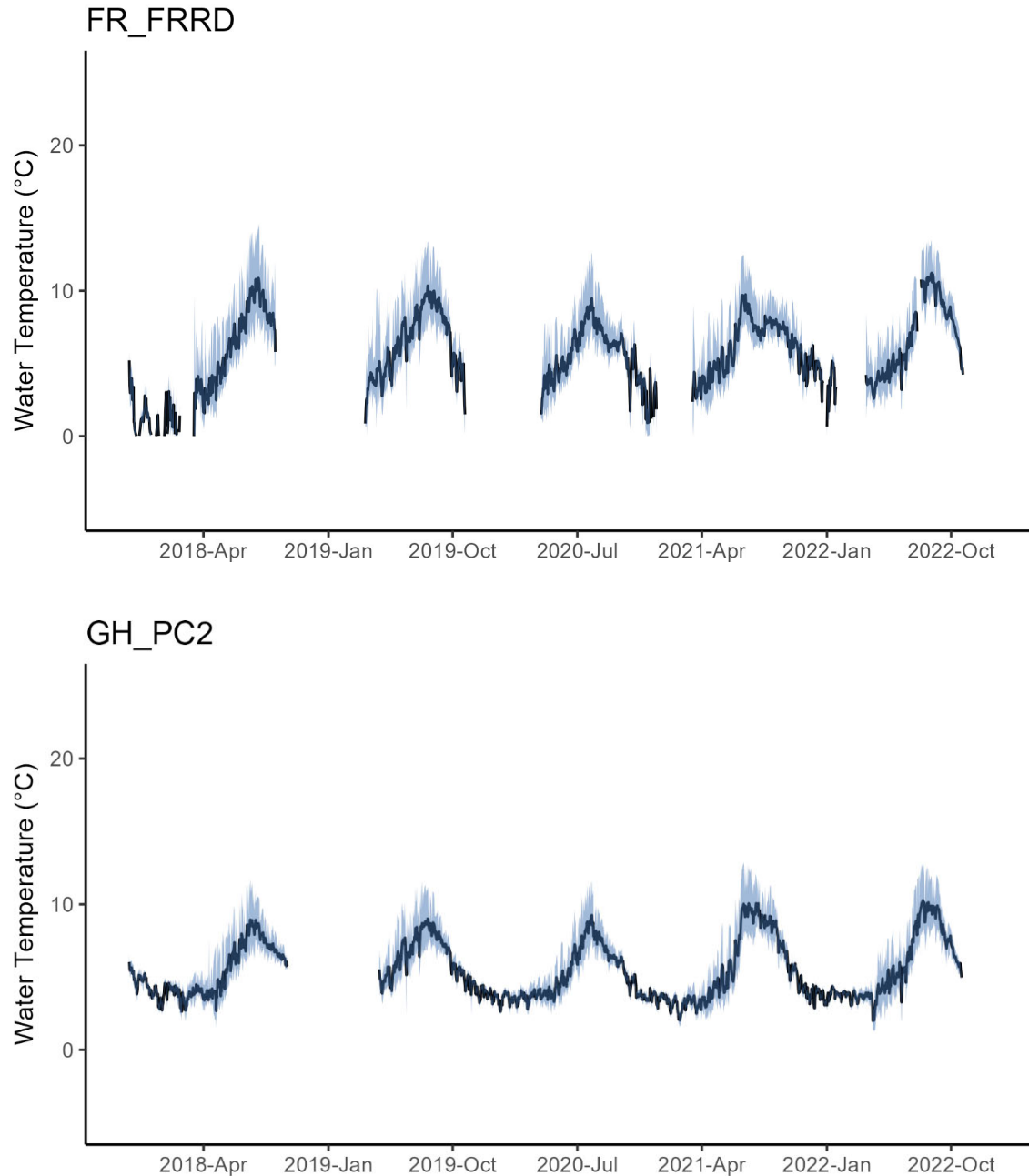


Figure E.1: Continuous Water Temperature Logging in the Fording River, 2022

Notes: Black line represents average daily water temperature. Blue line represents maximum and minimum daily water temperature. Gaps in data are due to logger corruption, loss of logger due to environmental conditions and/or values below 0°C. Areas with a constant temperature of ~0°C during the winter represent periods where the loggers were entombed in ice. Data loggers were installed at FR_UFR1, FR_FR1, FR_FRDSCC1, and FR_SCOUTDS in summer of 2020 and the data logger at FR_FOUCL was installed in the spring of 2021.

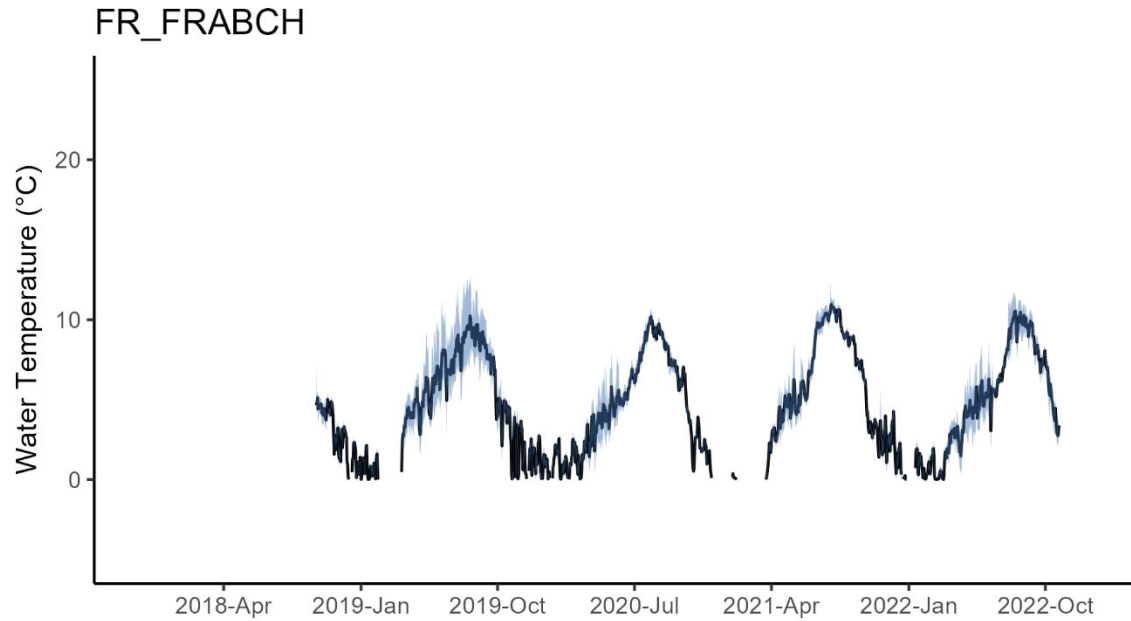


Figure E.1: Continuous Water Temperature Logging in the Fording River, 2022

Notes: Black line represents average daily water temperature. Blue line represents maximum and minimum daily water temperature. Gaps in data are due to logger corruption, loss of logger due to environmental conditions and/or values below 0°C. Areas with a constant temperature of ~0°C during the winter represent periods where the loggers were entombed in ice. Data loggers were installed at FR_UFR1, FR_FR1, FR_FRDSCC1, and FR_SCOUTDS in summer of 2020 and the data logger at FR_FOUCL was installed in the spring of 2021.

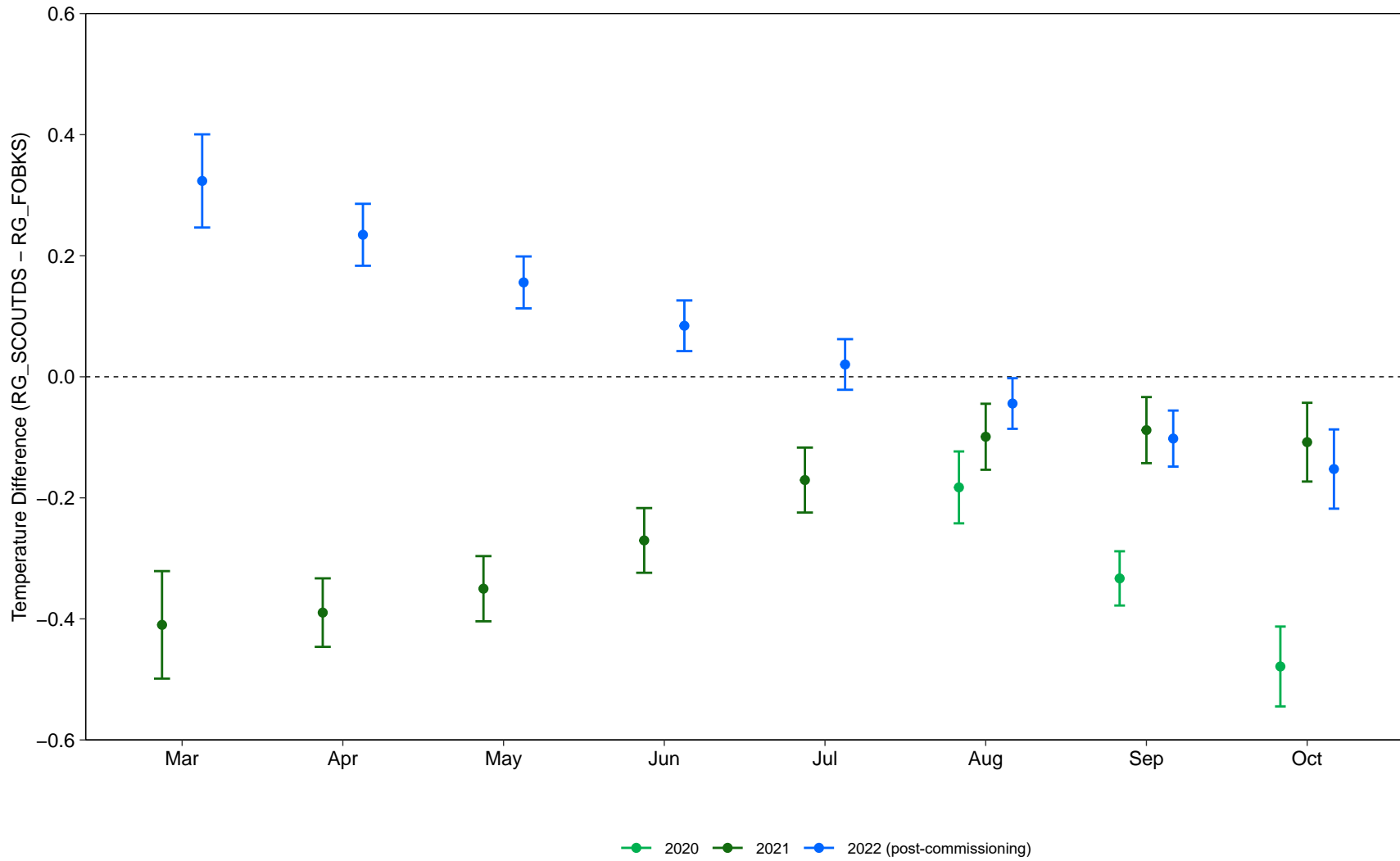


Figure E.2: Predicted Temperature Difference Upstream and Downstream of the

, Fording River,

Notes: Predicted means +/- confidence intervals are plotted for the middle of each month data is available.

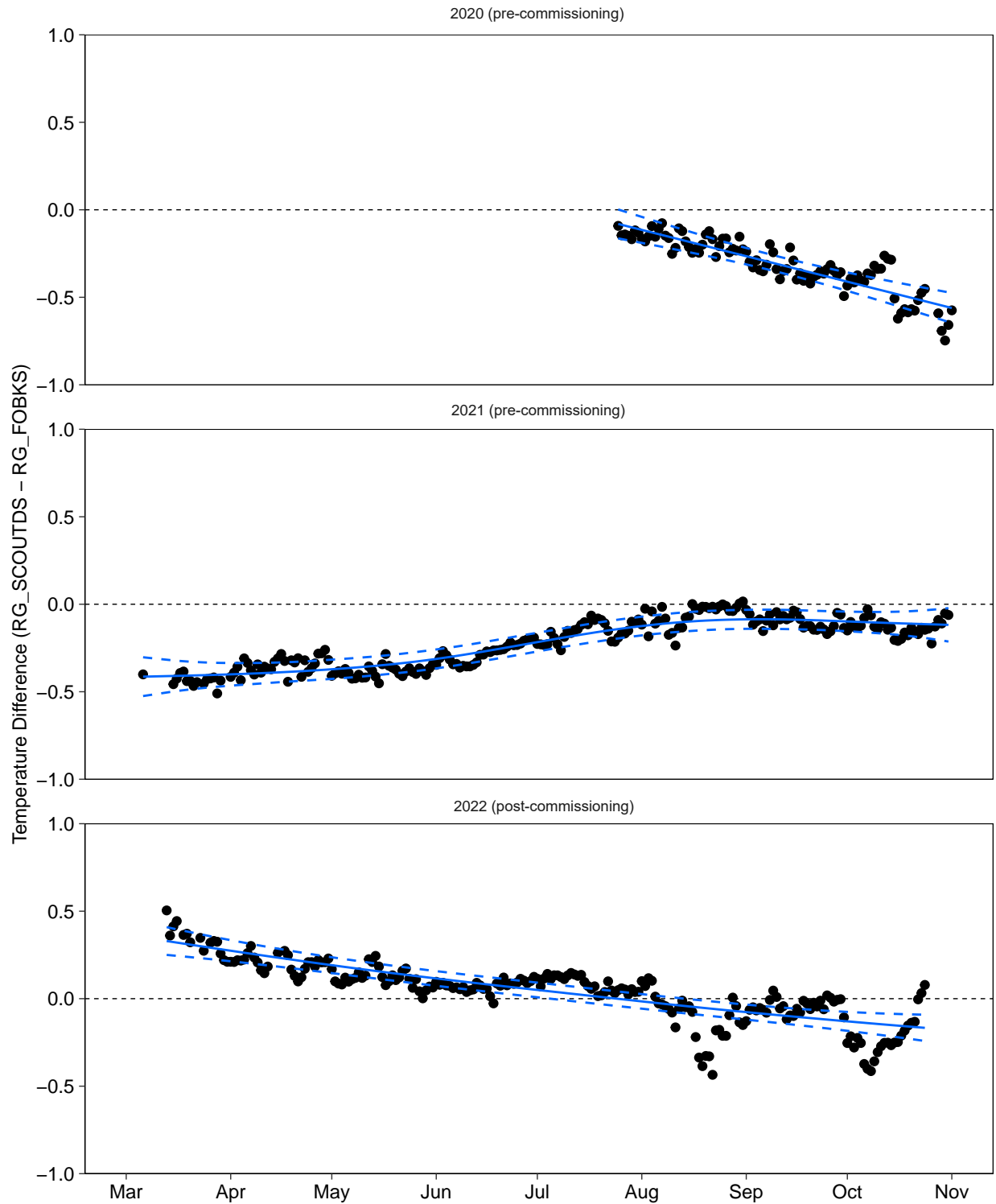


Figure E.3: Temperature Difference Upstream and Downstream of the Fording River, 2020 to 2022

Notes: The solid blue line represents the predicted values from a Generalized Additive Model (GAM) and the dashed lines indicate the corresponding 95 % confidence interval.

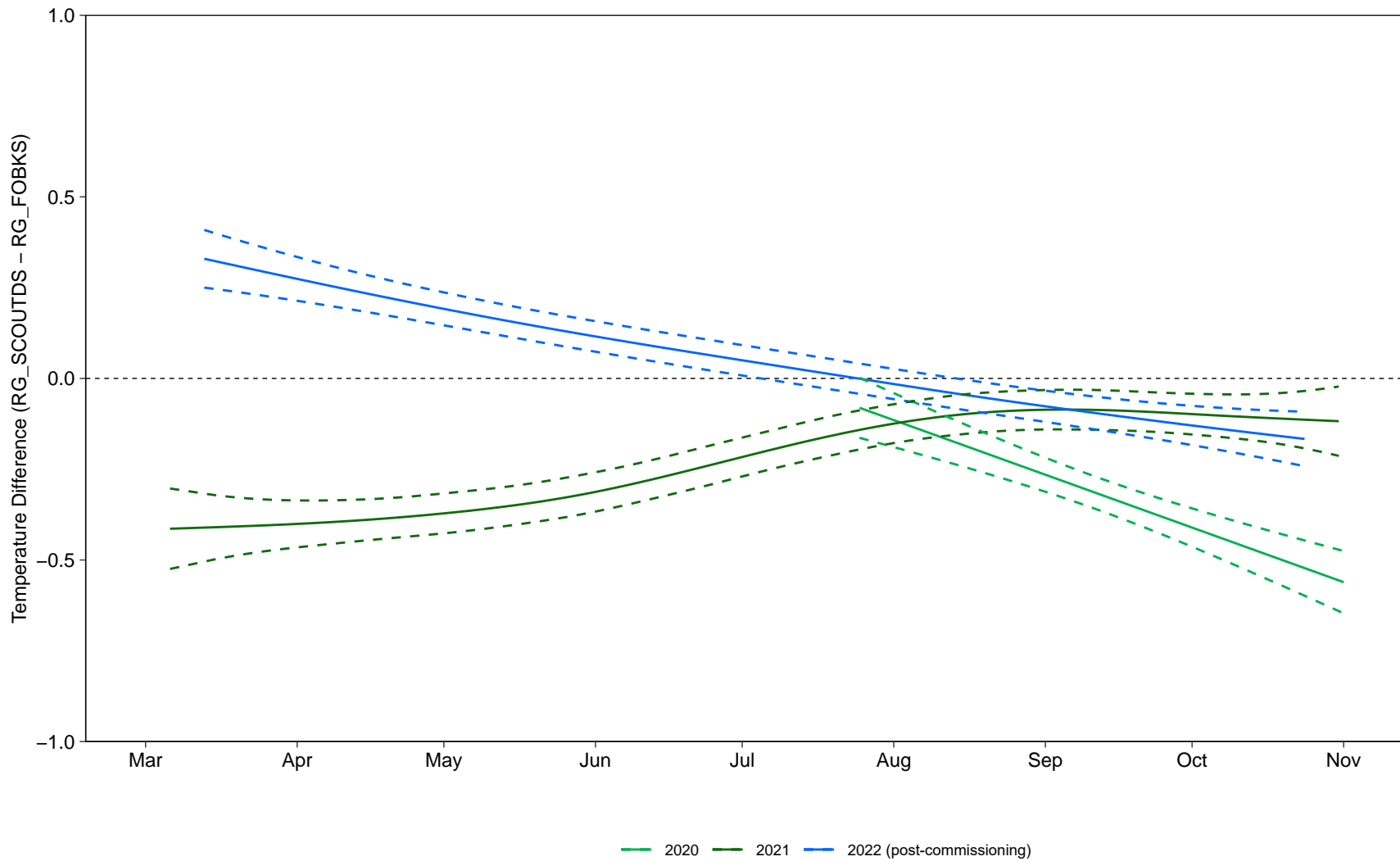
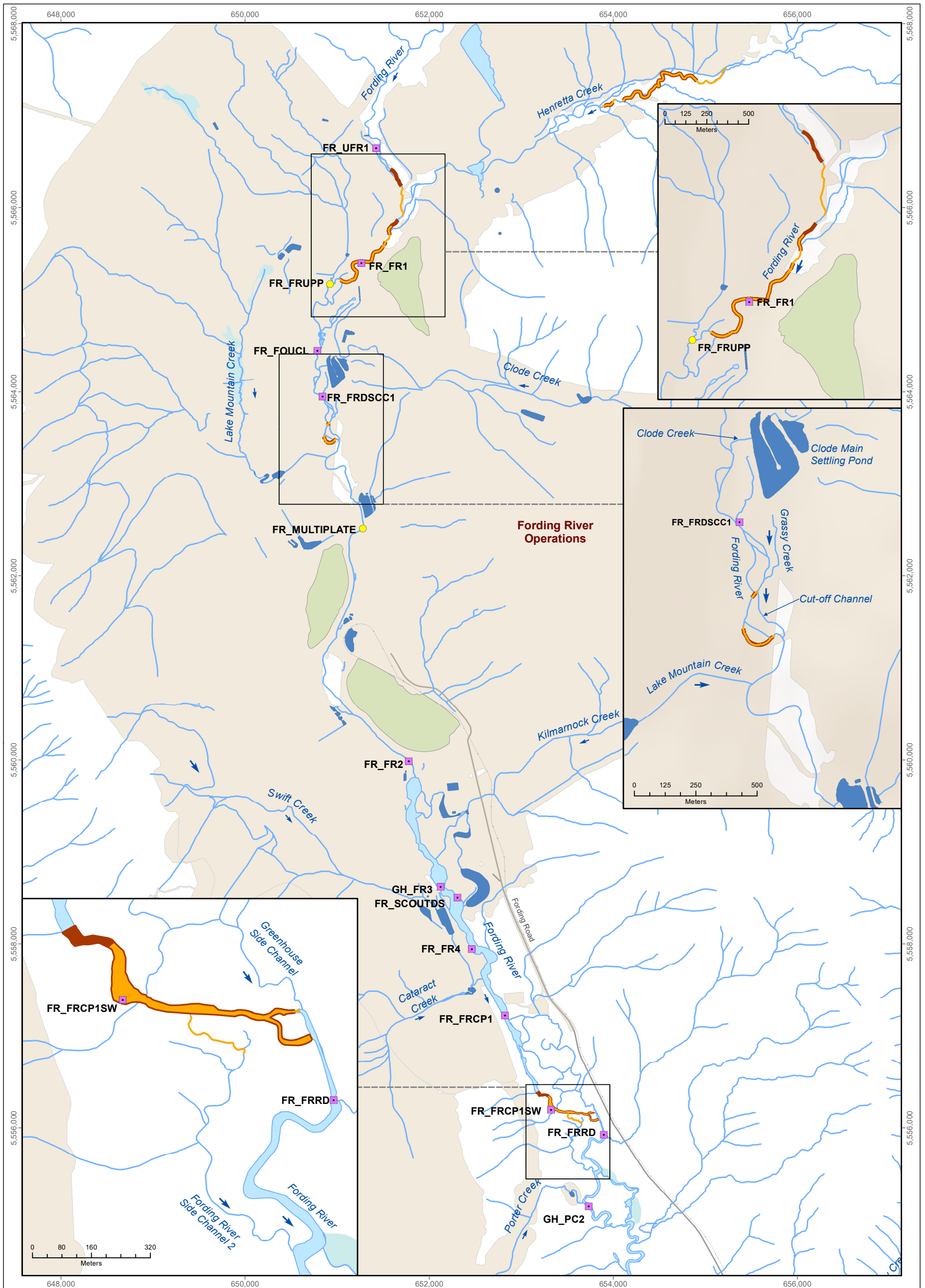


Figure E.4: Predicted

Temperature Difference Upstream and Downstream of the

Fording

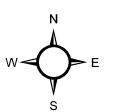
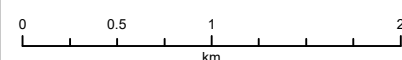
Notes: The solid blue line represents the predicted values from a Generalized Additive Model (GAM) and the dashed lines indicate the corresponding 95 % confidence interval.



- LEGEND**
- Continuous Logger Station
 - Water Quality Monitoring Station
 - Drying Survey (January 4 to 7)
 - Stranding Survey (January 17 to 19)
 - Settling Pond
 - Tailings Pond
 - Teck Coal Mine Operations

Notes: 1. Insets were not shown for areas if drying was not observed.
 2. The Greenhouse Side Channel and Fording River Side Channel 2 were not assessed for drying during stranding surveys.

Drying in the Upper Fording River in January 2022, FRO LAEMP

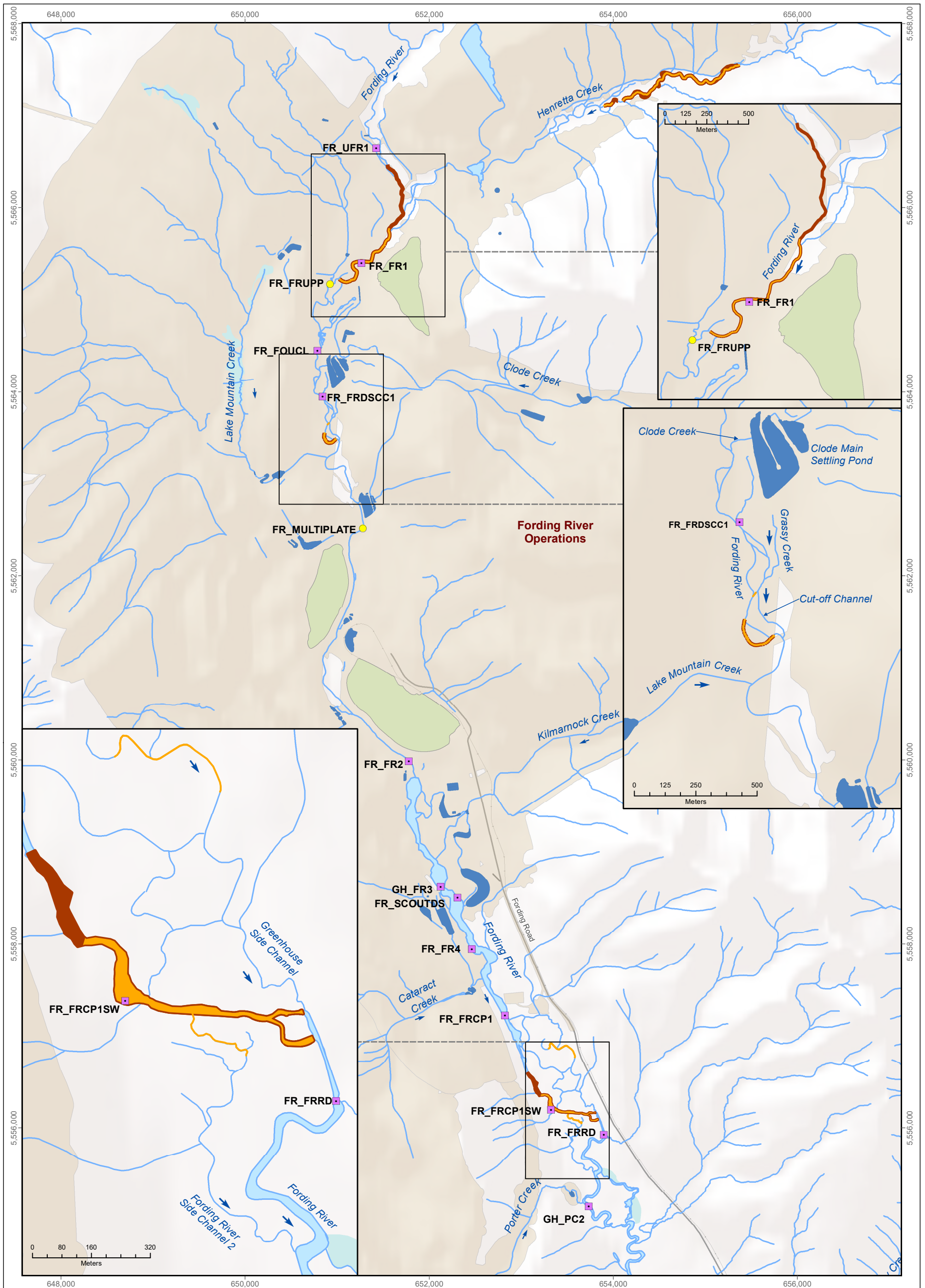


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Figure E.5

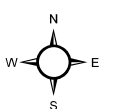


LEGEND

- Continuous Logger Station
- Water Quality Monitoring Station
- Drying Survey (February 14 to 17)
- Stranding Survey February 1 to 3 and February 28 to March 2)
- Settling Pond
- Tailings Pond
- Teck Coal Mine Operations

Notes: 1. Insets were not shown for areas if drying was not observed.
 2. The Greenhouse Side Channel and Fording River Side Channel 2 were not assessed for drying during stranding surveys.

Drying in the Upper Fording River in February 2022, FRO LAEMP

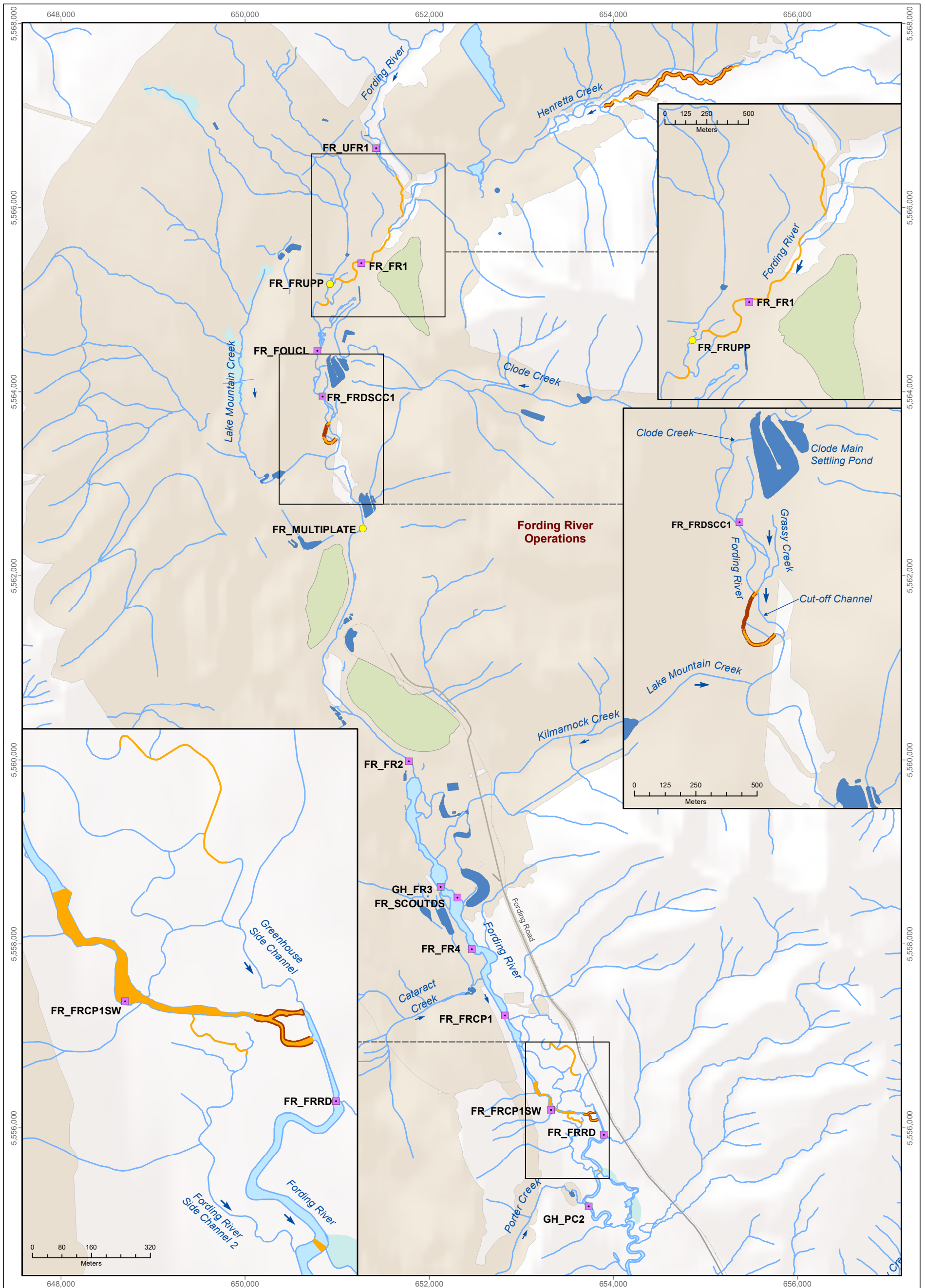


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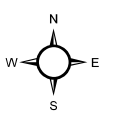
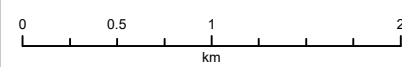
Figure E.6



- LEGEND**
- Continuous Logger Station
 - Water Quality Monitoring Station
 - Drying Survey (March 14 to 17)
 - Stranding Survey (March 28 to 30)
 - Settling Pond
 - Tailings Pond
 - Teck Coal Mine Operations

Notes: 1. Insets were not shown for areas if drying was not observed.
 2. The Greenhouse Side Channel and Fording River Side Channel 2 were not assessed for drying during stranding surveys.

Drying in the Upper Fording River in March 2022, FRO LAEMP

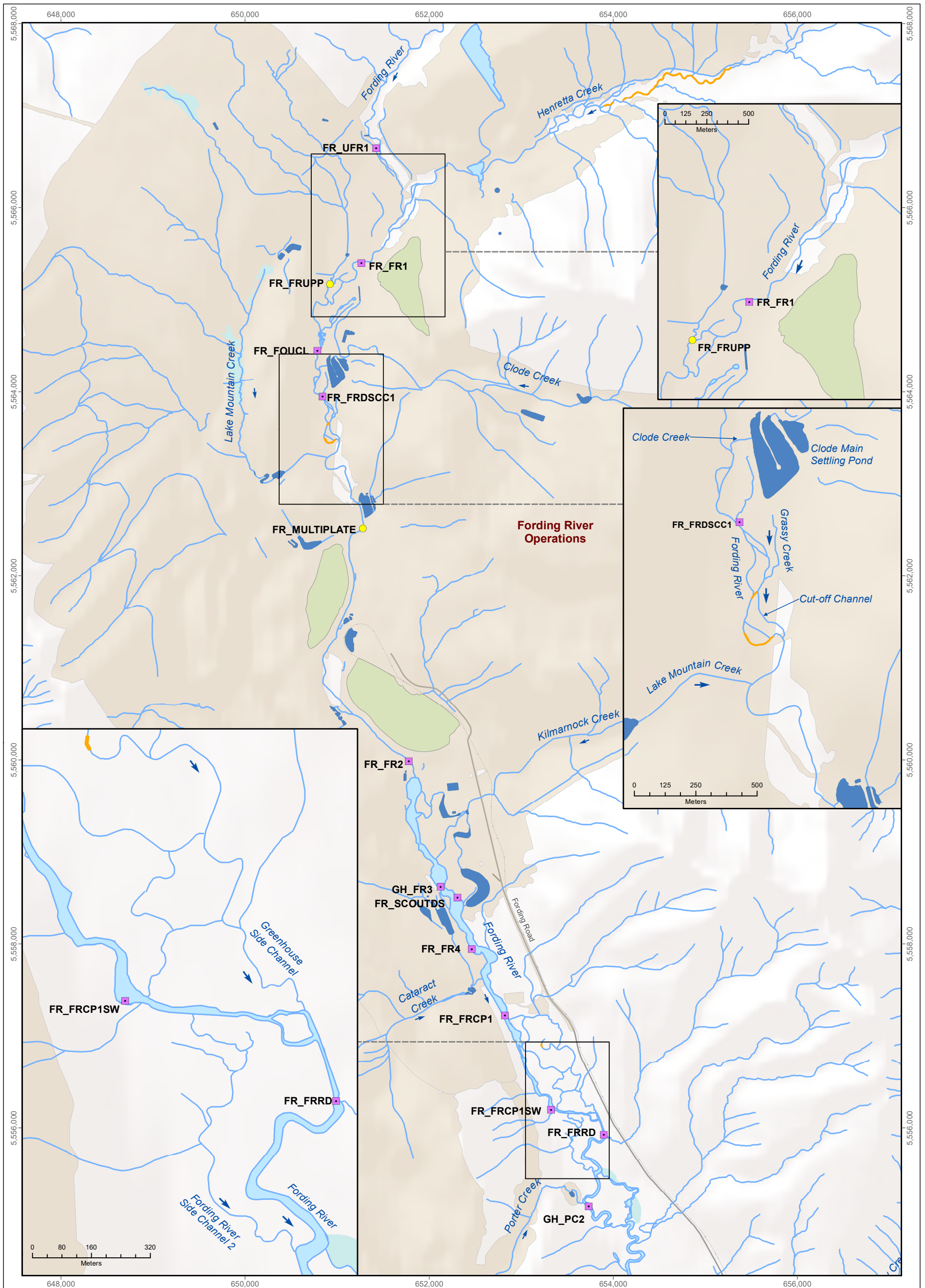


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Figure E.7

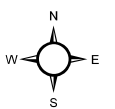


LEGEND

- Continuous Logger Station
- Water Quality Monitoring Station
- Drying Survey (April 11 to 14 and April 28)
- Settling Pond
- Tailings Pond
- Teck Coal Mine Operations

Notes: 1. Insets were not shown for areas if drying was not observed.
 2. The Greenhouse Side Channel and Fording River Side Channel 2 were not assessed for drying during stranding surveys.

Drying in the Upper Fording River in April 2022, FRO LAEMP

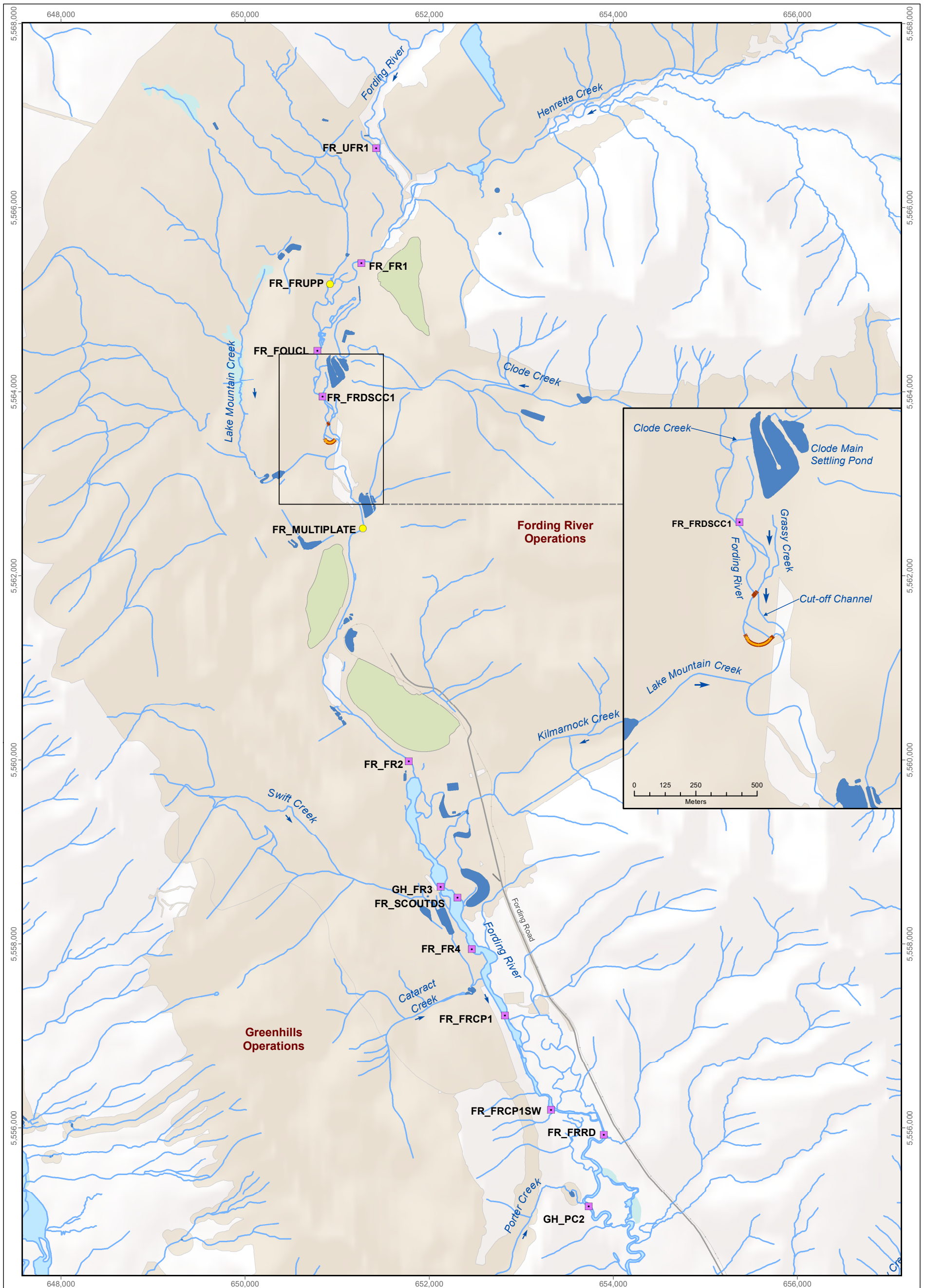


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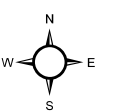
Figure E.8



- LEGEND**
- Continuous Logger Station
 - Water Quality Monitoring Station
 - Drying (August 31)
 - Stranding (August 17)
 - Settling Pond
 - Tailings Pond
 - Teck Coal Mine Operations

Notes: 1. Insets were not shown for areas if drying was not observed.
 2. The Greenhouse Side Channel and Fording River Side Channel 2 were not assessed for drying during stranding surveys.

Drying in the Upper Fording River in August 2022, FRO LAEMP

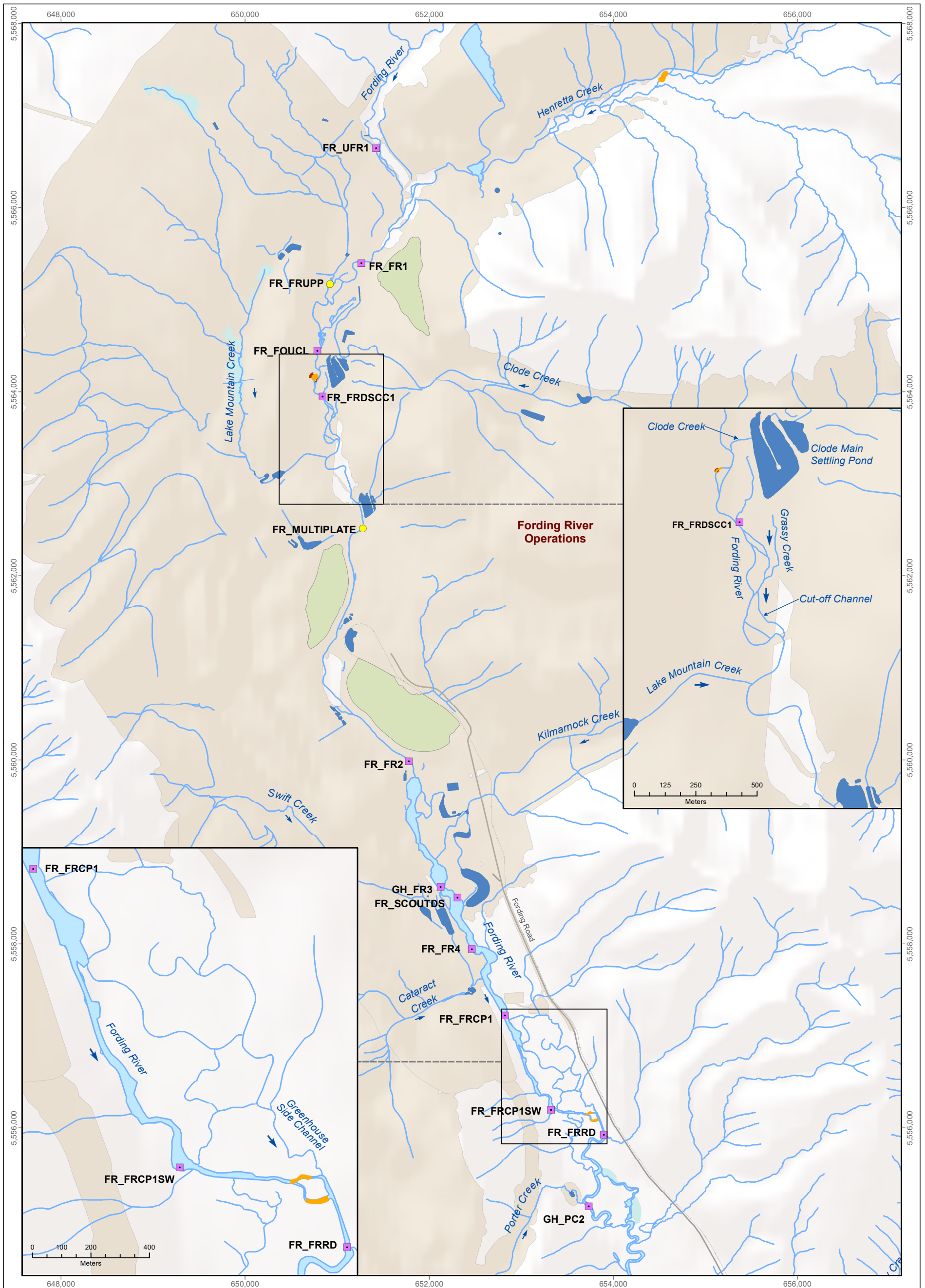


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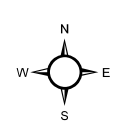
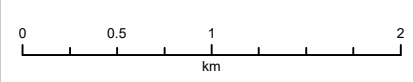
Figure E.9



- LEGEND**
- Continuous Logger Station
 - Water Quality Monitoring Station
 - Drying Survey (September 26 to 29)
 - Stranding Survey (September 12 to 13)
 - Settling Pond
 - Tailings Pond
 - Teck Coal Mine Operations

Notes: 1. Insets were not shown for areas if drying was not observed.
 2. The Greenhouse Side Channel and Fording River Side Channel 2 were not assessed for drying during stranding surveys.

Drying in the Upper Fording River in September 2022, FRO LAEMP

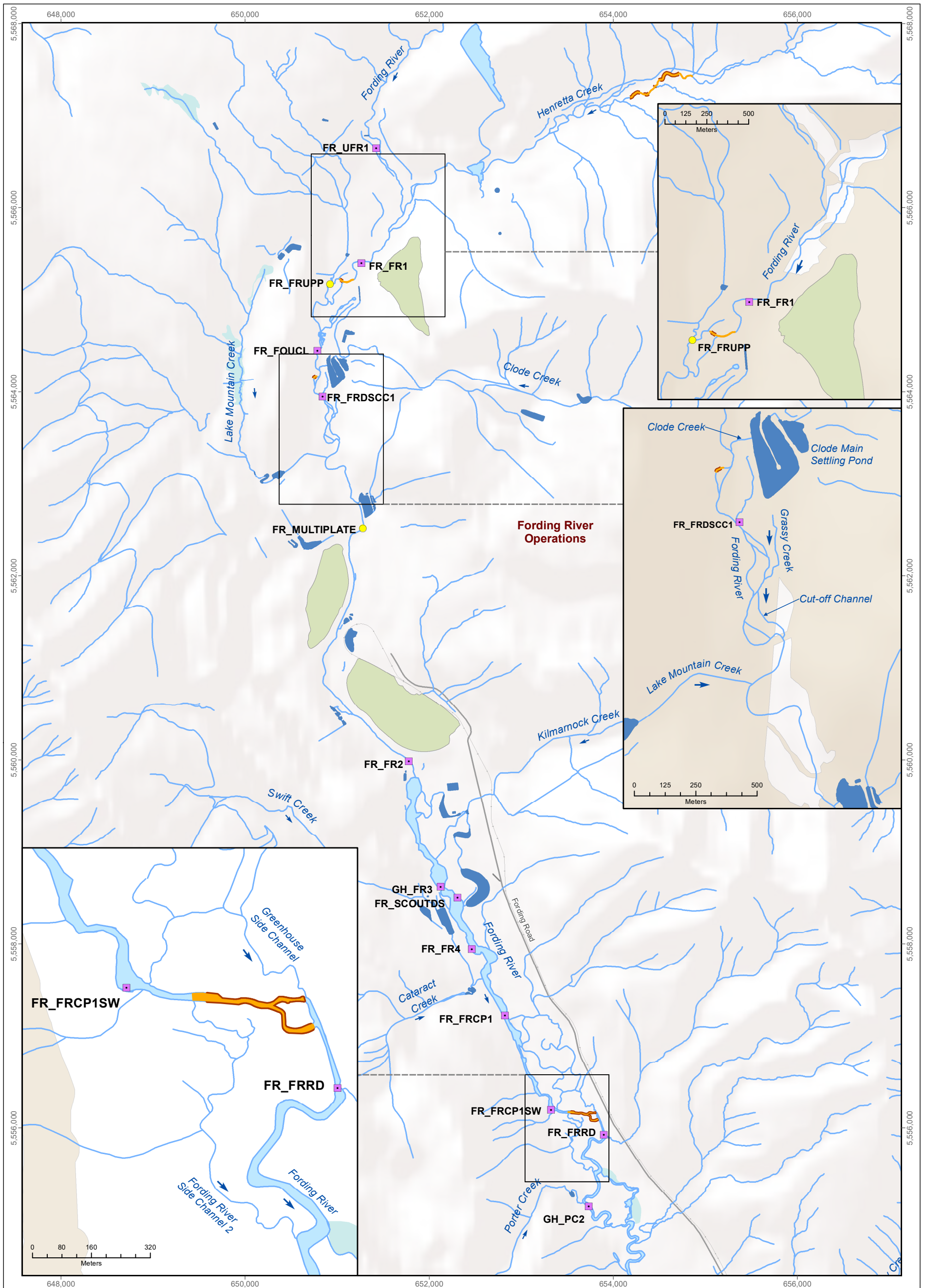


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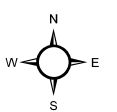
Figure E.10



- LEGEND**
- Continuous Logger Station
 - Water Quality Monitoring Station
 - Drying Survey (October 24 to 27)
 - Stranding Survey (October 11 to 13)
 - Settling Pond
 - Tailings Pond
 - Teck Coal Mine Operations

Notes: 1. Insets were not shown for areas if drying was not observed.
 2. The Greenhouse Side Channel and Fording River Side Channel 2 were not assessed for drying during stranding surveys.

Drying in the Upper Fording River in October 2022, FRO LAEMP

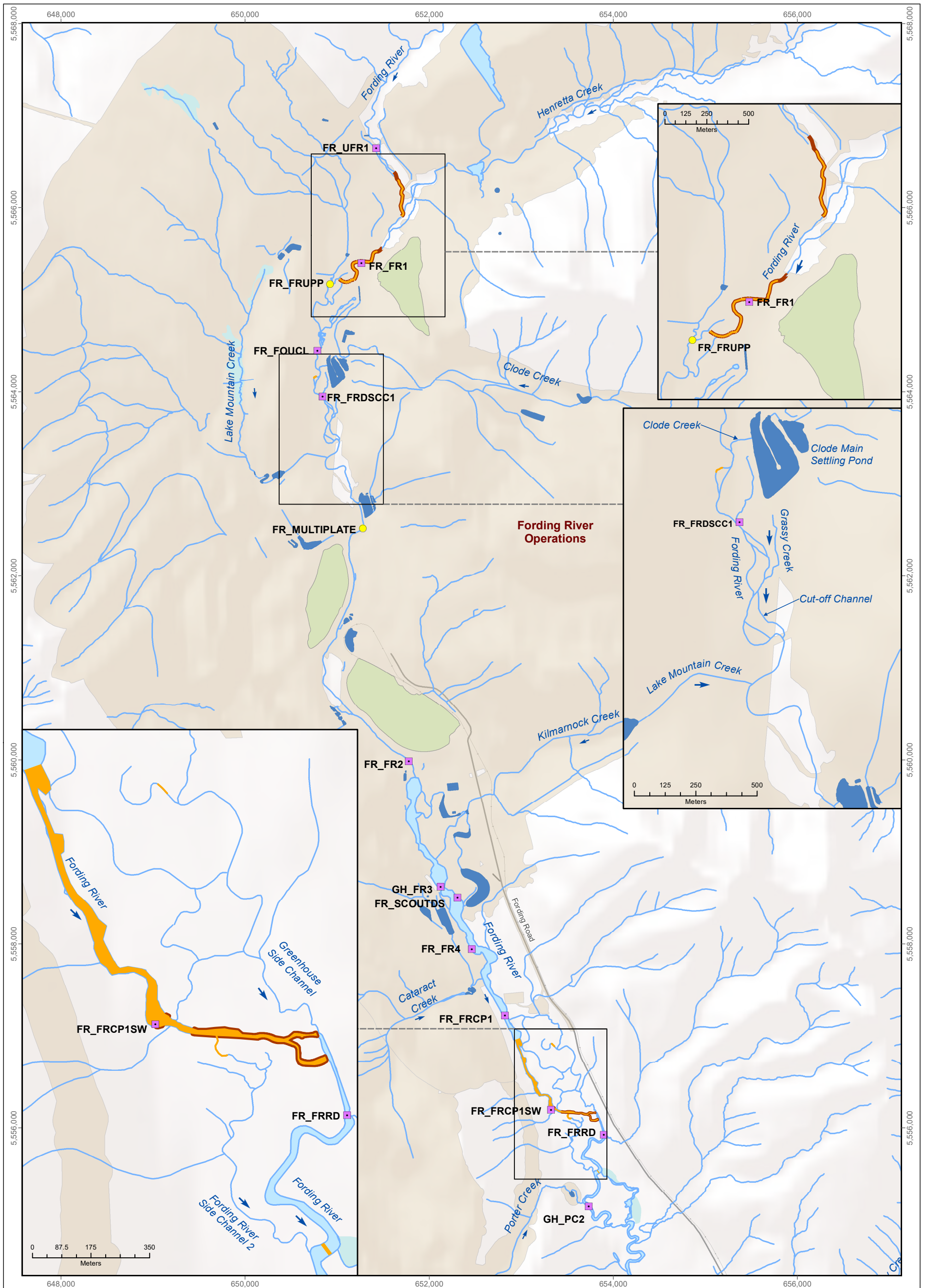


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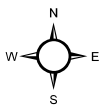
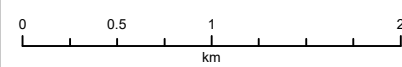
Figure E.11



- LEGEND**
- Continuous Logger Station
 - Water Quality Monitoring Station
 - Drying Survey (November 21 to 23)
 - Stranding (November 7 to 8)
 - Settling Pond
 - Tailings Pond
 - Teck Coal Mine Operations

Notes: 1. Insets were not shown for areas if drying was not observed.
 2. The Greenhouse Side Channel and Fording River Side Channel 2 were not assessed for drying during stranding surveys.

Drying in the Upper Fording River in November 2022, FRO LAEMP

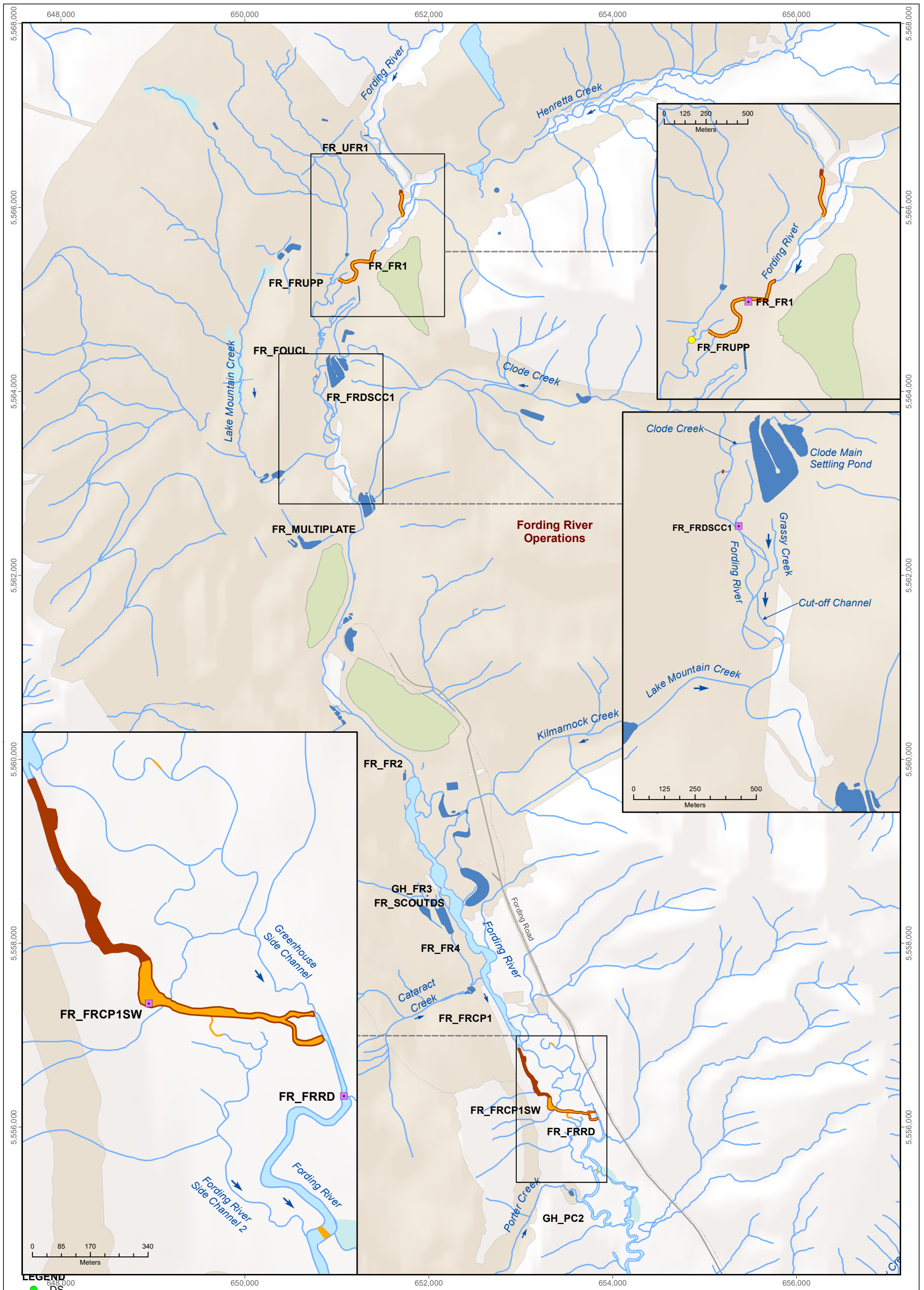


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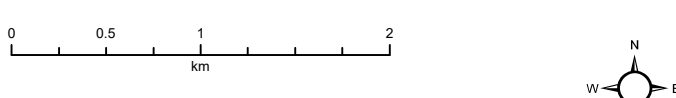
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Figure E.12



Drying in the Upper Fording River in December 2022, FRO LAEMP



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Figure E.13

Notes: 1. Insets were not shown for areas if drying was not observed.
 2. The Greenhouse Side Channel and Fording River Side Channel 2 were not assessed for drying during stranding surveys.

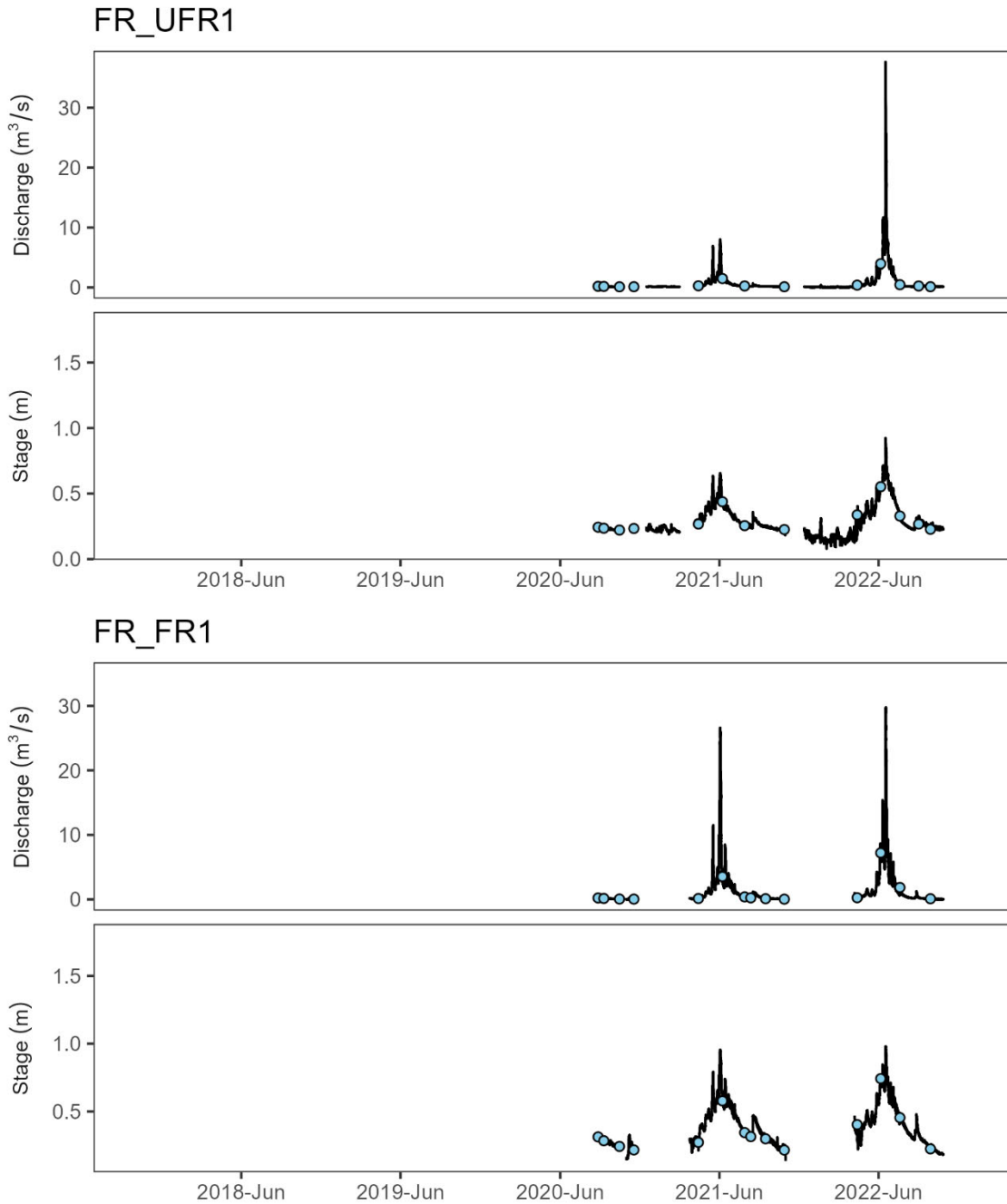


Figure E.14: Continuous Stage and Discharge Logging in the Fording River, 2022

Notes: Black line represents stage and calculated discharge record. Blue dots represent manual stage and discharge measurements. Data gaps represent loss of logger data or removed data due to ice effects. Data loggers were installed at FR_UFR1, FR_FR1, FR_FRDSCC1, and FR_SCOUTDS in summer of 2020 and the data logger at FR_FOUCL was installed in the spring of 2021.

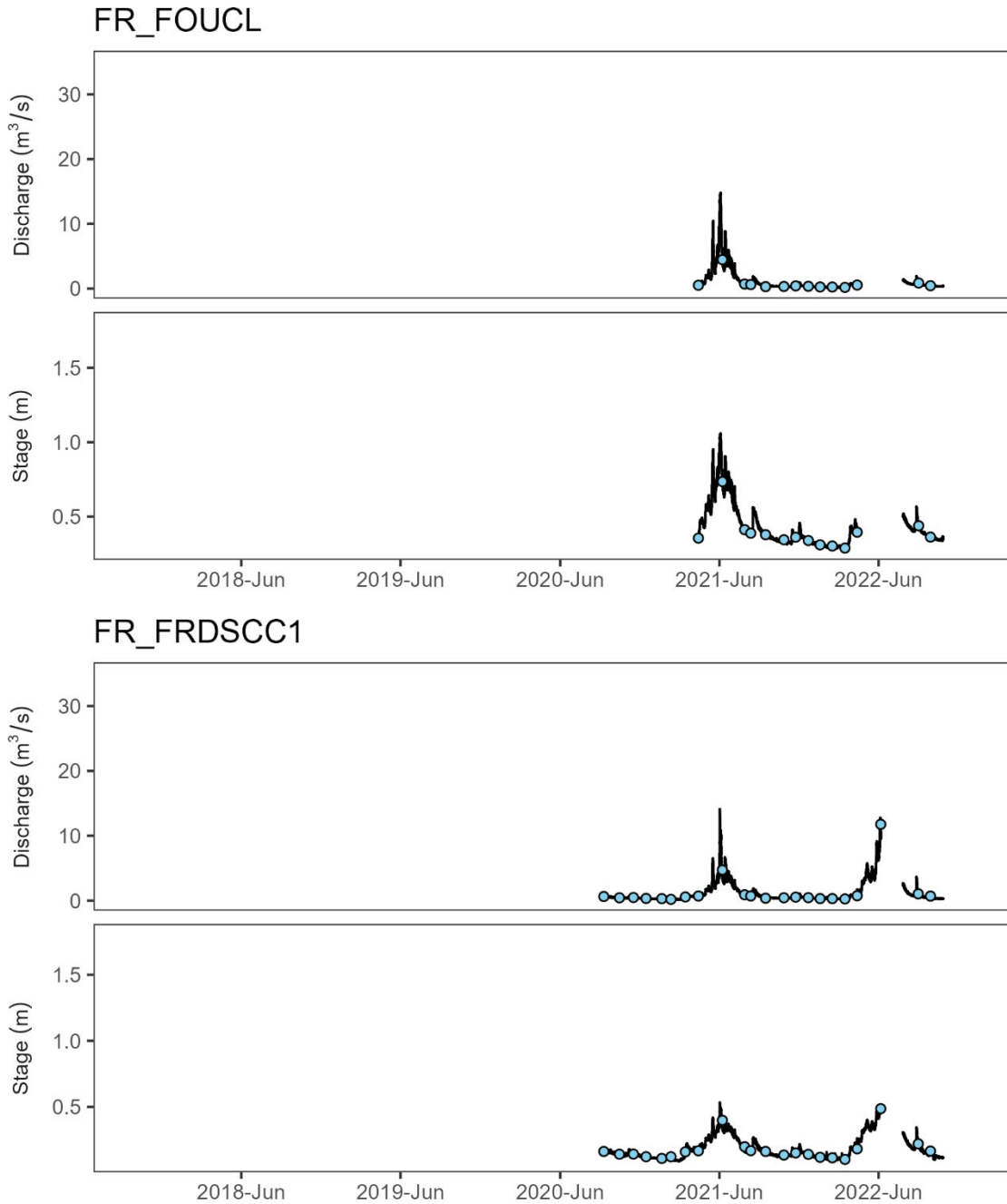


Figure E.14: Continuous Stage and Discharge Logging in the Fording River, 2022

Notes: Black line represents stage and calculated discharge record. Blue dots represent manual stage and discharge measurements. Data gaps represent loss of logger data or removed data due to ice effects. Data loggers were installed at FR_UFR1, FR_FR1, FR_FRDSCC1, and FR_SCOUTDS in summer of 2020 and the data logger at FR_FOUCL was installed in the spring of 2021.

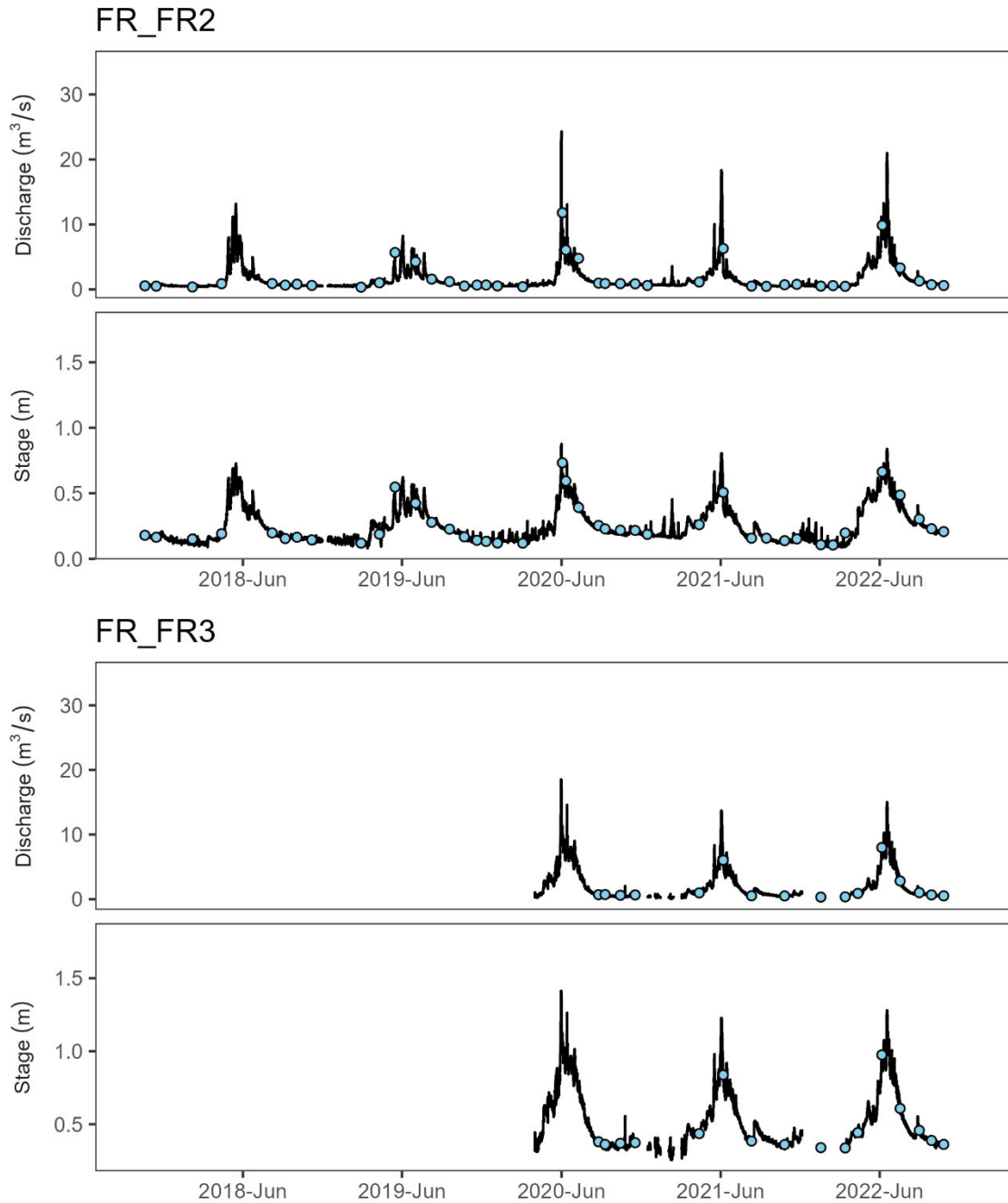


Figure E.14: Continuous Stage and Discharge Logging in the Fording River, 2022

Notes: Black line represents stage and calculated discharge record. Blue dots represent manual stage and discharge measurements. Data gaps represent loss of logger data or removed data due to ice effects. Data loggers were installed at FR_UFR1, FR_FR1, FR_FRDSCC1, and FR_SCOUTDS in summer of 2020 and the data logger at FR_FOUCL was installed in the spring of 2021.

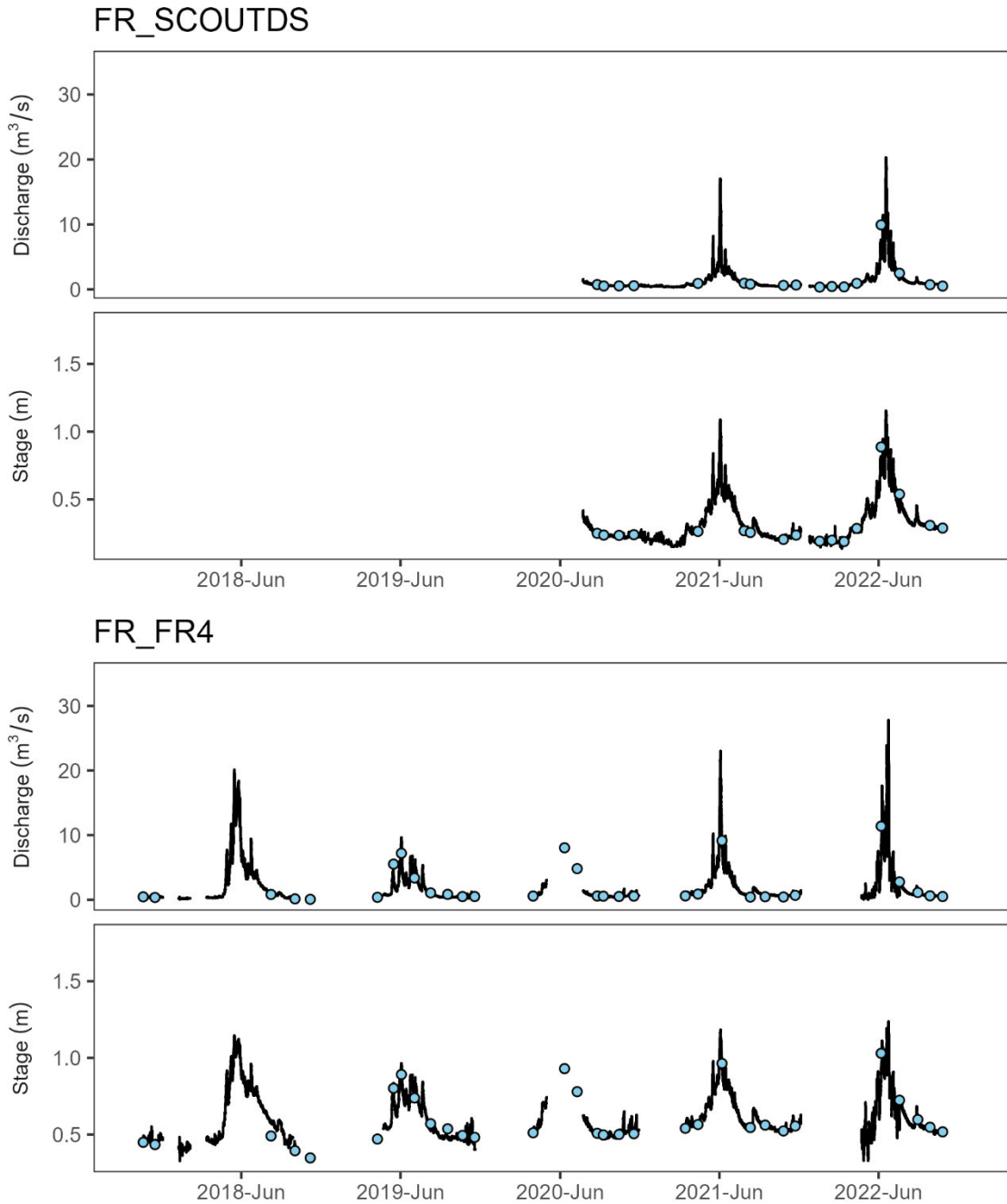


Figure E.14: Continuous Stage and Discharge Logging in the Fording River, 2022

Notes: Black line represents stage and calculated discharge record. Blue dots represent manual stage and discharge measurements. Data gaps represent loss of logger data or removed data due to ice effects. Data loggers were installed at FR_UFR1, FR_FR1, FR_FRDSCC1, and FR_SCOUTDS in summer of 2020 and the data logger at FR_FOUCL was installed in the spring of 2021.

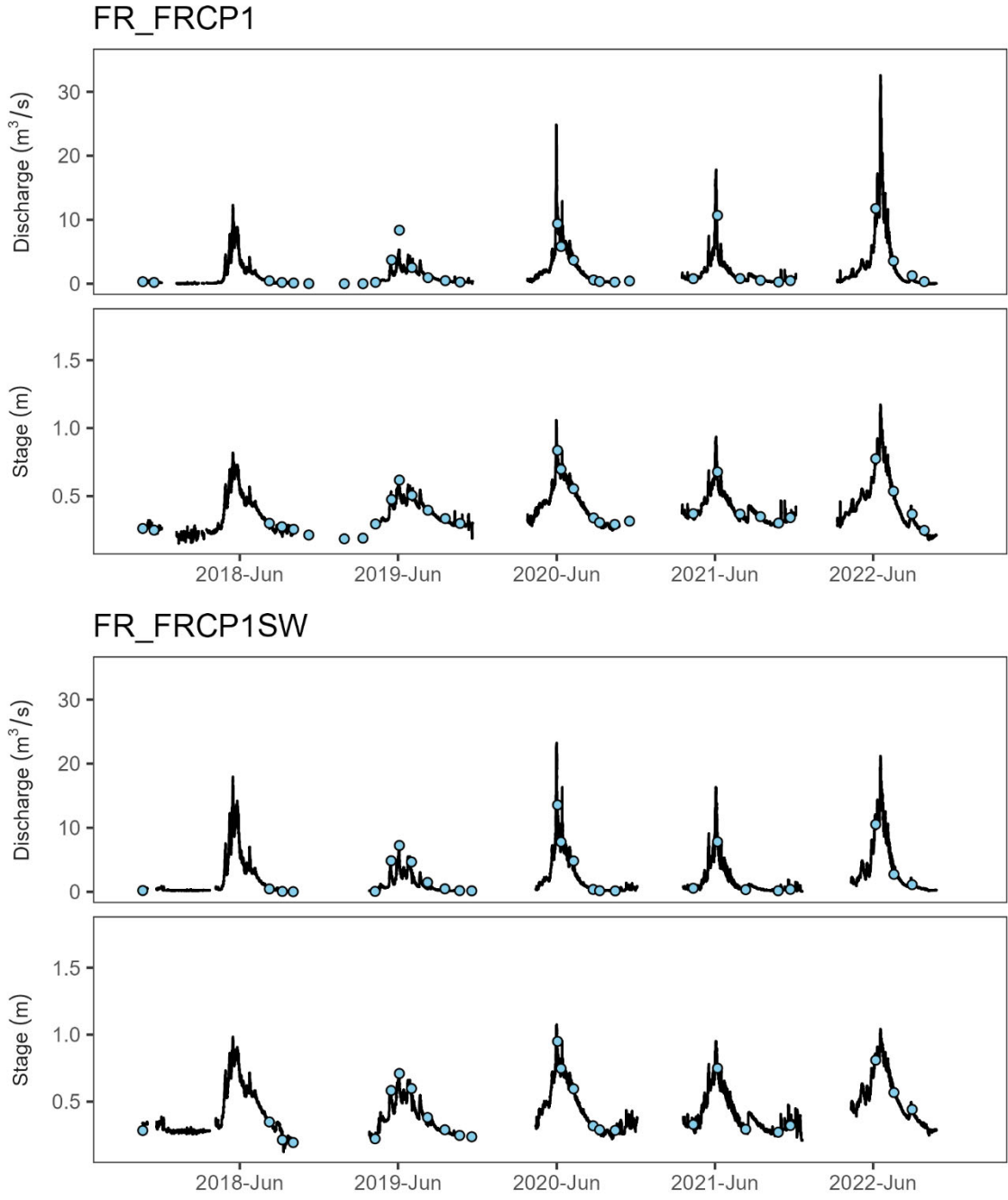


Figure E.14: Continuous Stage and Discharge Logging in the Fording River, 2022

Notes: Black line represents stage and calculated discharge record. Blue dots represent manual stage and discharge measurements. Data gaps represent loss of logger data or removed data due to ice effects. Data loggers were installed at FR_UFR1, FR_FR1, FR_FRDSCC1, and FR_SCOUTDS in summer of 2020 and the data logger at FR_FOUCL was installed in the spring of 2021.

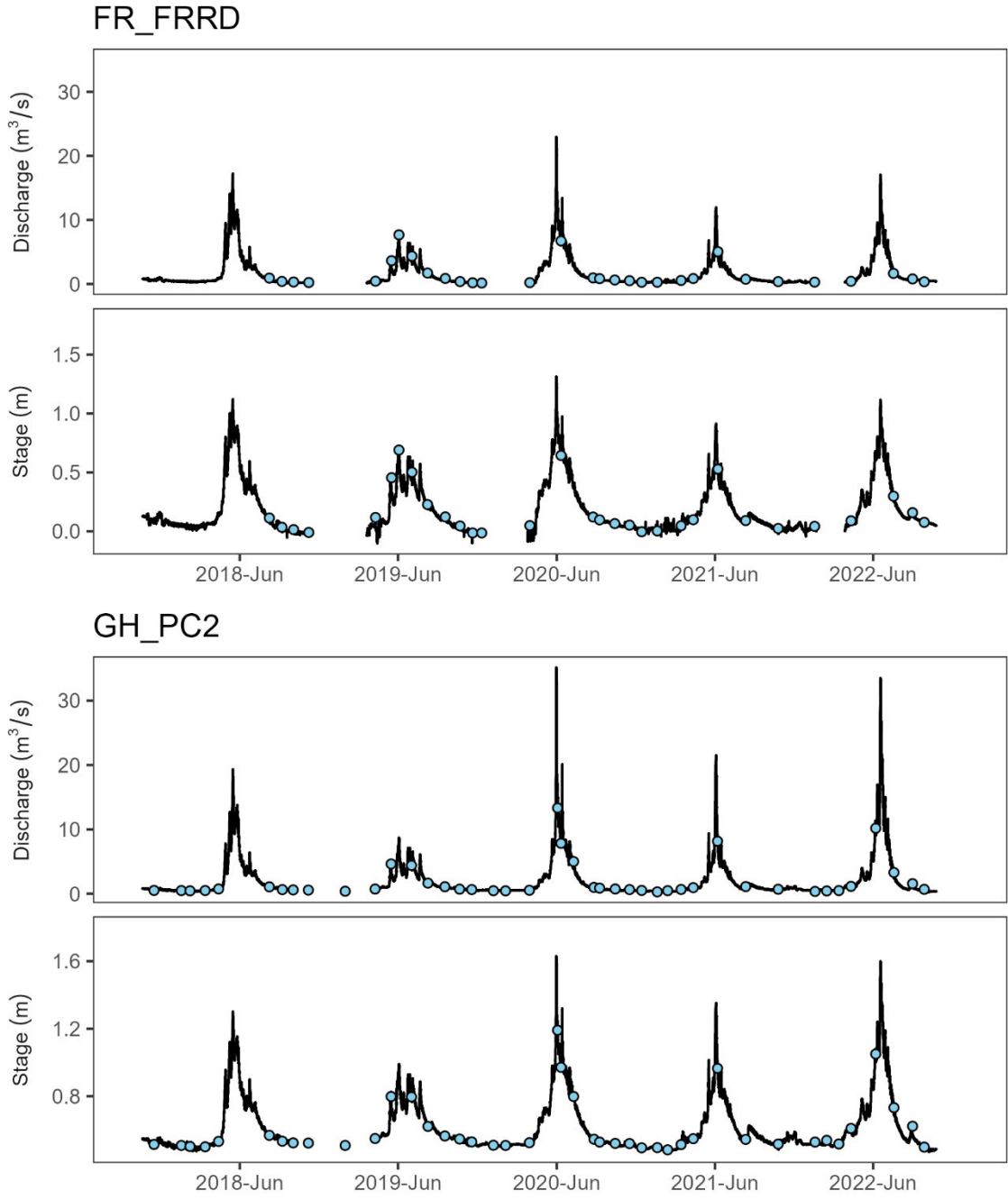


Figure E.14: Continuous Stage and Discharge Logging in the Fording River, 2022

Notes: Black line represents stage and calculated discharge record. Blue dots represent manual stage and discharge measurements. Data gaps represent loss of logger data or removed data due to ice effects. Data loggers were installed at FR_UFR1, FR_FR1, FR_FRDSCC1, and FR_SCOUTDS in summer of 2020 and the data logger at FR_FOUCL was installed in the spring of 2021.

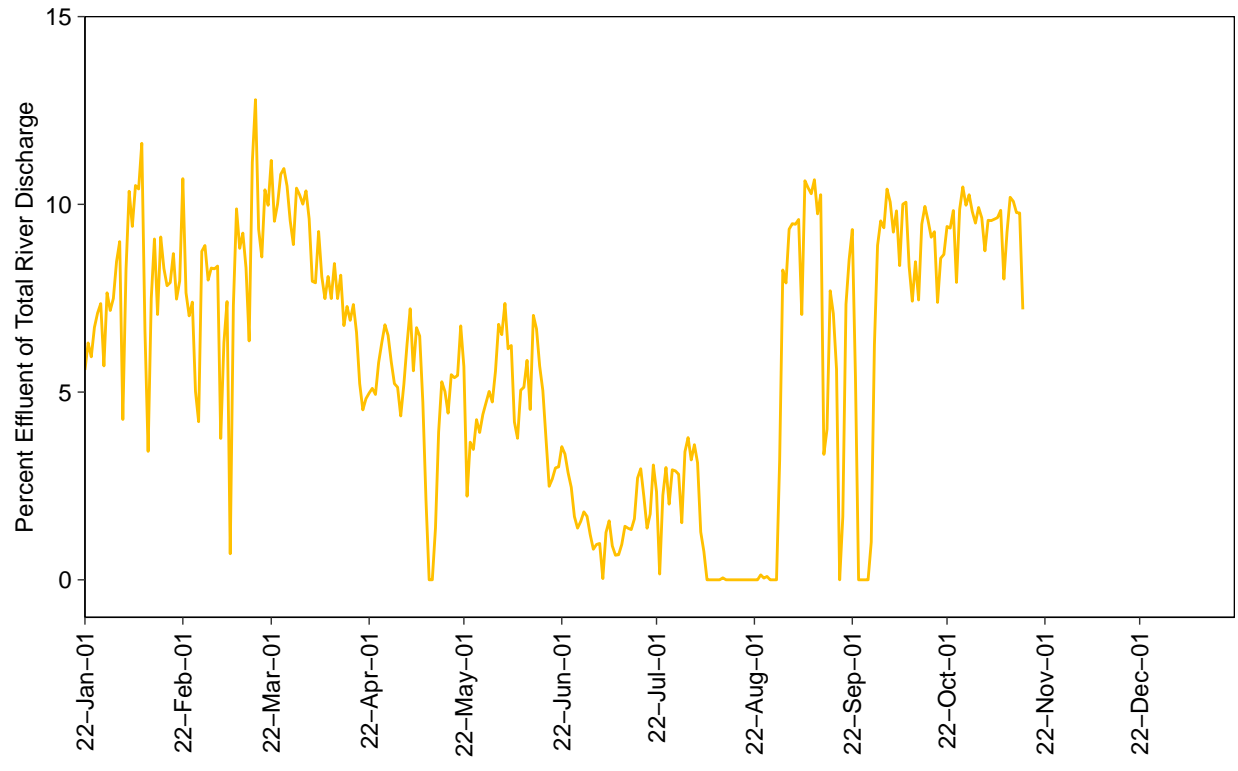


Figure .1 : Percent Effluent of Total Fording River Discharge at the Fording River Outfall, FRO LAEMP, 2022

Table E.1: Seasonal Kendall Trend Analysis For Water Temperature in the Fording River, 2017 to 2022

Constituent	Units	Reference	Mine-exposed											
		RG_UFR1 (FR_UFR1)	RG_FODHE (FR_FR1)	RG_FOUCL (FR_FOUCL)	FR_FRDSCC1 (FR_FRDSCC1)	RG_FOUKI (FR_FR2)	RG_FOBKS (FR_FR3)	RG_SCOUTDS (FR_SCOUTDS)	RG_FOBSC (FR_FR4)	RG_FOBPCP (FR_FRCP1)	RG_FRCP1SW (FR_FRCP1SW)	RG_FRUPO (FR_FRRD)	RG_FODPO (GH_PC2)	RG_FO22 (FR_FRABCH)
Temperature	°C	NS	NS	-	NS	2.8	5.6	NS	4.3	NS	NS	NS	NS	NS



P-value < 0.05.



Significant decreasing temporal trend (Seasonal Kendall test for monotonic trend at $\alpha = 0.05$). Value reported is the Sen's slope reported as a percentage of the median concentration or value.




Significant increasing temporal trend (Seasonal Kendall test for monotonic trend at $\alpha = 0.05$). Value reported is the Sen's slope reported as a percentage of the median concentration or value.


Notes: "NS" = no significant temporal trend (Seasonal Kendall test for monotonic trend at $\alpha = 0.05$). "-" = no data or insufficient data ($n < 5$) to test for trend. RG_FOUCL had insufficient data for analysis, RG_UFR1, RG_FODHE, FR_FRDSCC1, and RG_SCOUTDS had a maximum of three years of data for a given month, and the remaining stations had a maximum of five years of data for a given month. Logger stations associated with biological monitoring areas are outlined in brackets.

Table E.2: Predicted Water Temperature Differences Upstream and Downstream of the FRO-S AWTF Outfall, Fording River 2022 Relative to Pre-Commissioning (2020 and 2021)

Month	Predicted Mean Difference (RG_SCOUTDS - RG_FOBKS)			2022 _{Difference} - Pre-Commissioning Year _{Difference}	
	2020	2021	2022	2022 versus 2020 ^a	2022 versus 2021 ^a
Mar	-	-0.410	0.324	-	0.733
Apr	-	-0.390	0.235	-	0.624
May	-	-0.350	0.156	-	0.506
Jun	-	-0.270	0.0843	-	0.355
Jul	-	-0.171	0.0203	-	0.191
Aug	-0.183	-0.0991	-0.0442	0.139	0.0549
Sep	-0.333	-0.0881	-0.102	0.231	-0.0140
Oct	-0.479	-0.108	-0.152	0.326	-0.0444

Bold Non-overlapping 95 % Confidence Limits in Estimates of Mean differences.

 Temperature difference in 2022 is higher than the temperature difference before AWTF operation.

 Temperature difference in 2022 is lower than the temperature difference before AWTF operation.

^aAbsolute difference between years calculated as 2022_{Difference} - Pre-Commissioning Year_{Difference} - Predicted difference values were calculated using a generalized additive model (GAM) with temperature difference (RG_SCOUTDS - RG_FOBKS) as the response variable, year as a factor, and Julian day as a smoothing factor with a cubic regression spline. An autocorrelation correction with a lag of one was also included in the model.

Table E.3: Mean Daily Temperature Difference Between Downstream (RG_SCOUTDS) and Upstream (RG_FOBKS) of the FRO-S AWTF, 2020 to 2022

Month	Day	FRO LAEMP Logger Temperature Differences (°C)			AWTF Logger Temperature Differences (°C)
		2020	2021	2022	2022
January	1	-	-	-	0.0596
	2	-	-	-	0.0991
	3	-	-	-	0.102
	4	-	-	-	0.105
	5	-	-	-	0.0982
	6	-	-	-	0.0711
	7	-	-	-	0.0589
	8	-	-	-	0.0851
	9	-	-	-	0.0764
	10	-	-	-	0.0714
	11	-	-	-	0.0942
	12	-	-	-0.479	0.101
	13	-	-	-	0.0583
	14	-	-	-	0.0837
	15	-	-	-	0.0991
	16	-	-	-	0.112
	17	-	-	-	0.159
	18	-	-	-	0.166
	19	-	-	-	0.276
	20	-	-	-	0.169
	21	-	-	-	0.100
	22	-	-	-	0.116
	23	-	-	-	0.139
	24	-	-	-	0.106
	25	-	-	-	-
	26	-	-	-	-
	27	-	-	-	0.281
	28	-	-	-	0.294
	29	-	-	-	0.321
	30	-	-	-	0.299
	31	-	-	-	0.247
February	1	-	-	-	0.248
	2	-	-	-	0.280
	3	-	-	-	0.230
	4	-	-	-	0.209
	5	-	-	-	0.192
	6	-	-	-	0.176
	7	-	-	-	0.234
	8	-	-	-	0.248
	9	-	-	-	0.276
	10	-	-	-	0.279
	11	-	-	-	0.315
	12	-	-	-	0.357
	13	-	-	-	0.210
	14	-	-	-	0.251
	15	-	-	-	0.214
	16	-	-	-	0.134
	17	-	-	-	0.239
	18	-	-	-	0.264
	19	-	-	-	0.264
	20	-	-	-	0.112
	21	-	-	-	0.112
	22	-	-	-	0.168
	23	-	-	-	0.0970
	24	-	-	-	-0.446
	25	-	-	-	-1.25
	26	-	-	-	-1.20
	27	-	-	-	-0.410
	28	-	-	-	0.311
	29	-	-	-	-

Temperature Difference > 1°C.

Notes: Temperature differences were calculated as RG_SCOUTDS - RG_FOBKS. A positive difference indicates higher temperatures downstream and a negative difference indicates lower temperatures downstream.

Table E.3: Mean Daily Temperature Difference Between Downstream (RG_SCOUTDS) and Upstream (RG_FOBKS) of the FRO-S AWTF, 2020 to 2022

Month	Day	FRO LAEMP Logger Temperature Differences (°C)			AWTF Logger Temperature Differences (°C)
		2020	2021	2022	2022
March	1	-	-	-	0.406
	2	-	-	-	0.373
	3	-	-	-	0.348
	4	-	-	-	0.425
	5	-	-	-	0.311
	6	-	-0.401	-	0.352
	7	-	-	-	0.341
	8	-	-	-	0.270
	9	-	-	-	0.360
	10	-	-	-	0.339
	11	-	-	-	0.355
	12	-	-	-	0.409
	13	-	-	0.504	0.331
	14	-	-	0.361	0.256
	15	-	-0.457	0.413	0.287
	16	-	-0.425	0.443	0.292
	17	-	-0.393	-	0.287
	18	-	-0.385	0.364	0.251
	19	-	-0.439	0.371	0.274
	20	-	-0.438	0.322	0.222
	21	-	-0.467	-	0.270
	22	-	-0.445	-	0.263
	23	-	-	0.347	0.250
	24	-	-0.453	0.274	0.248
	25	-	-0.428	-	0.299
	26	-	-0.424	0.320	0.271
	27	-	-0.419	0.330	0.277
	28	-	-0.510	0.325	0.239
	29	-	-0.437	0.258	0.221
	30	-	-	0.220	0.227
	31	-	-	0.211	0.210
April	1	-	-0.415	0.211	0.202
	2	-	-0.391	0.210	0.207
	3	-	-0.357	0.220	0.237
	4	-	-0.434	0.218	0.215
	5	-	-0.309	0.224	0.231
	6	-	-0.335	0.261	0.242
	7	-	-0.377	0.301	0.258
	8	-	-0.402	0.235	0.249
	9	-	-0.344	0.207	0.241
	10	-	-0.391	0.163	0.258
	11	-	-0.357	0.146	0.234
	12	-	-0.367	0.184	0.219
	13	-	-0.372	-	0.221
	14	-	-0.329	-	0.246
	15	-	-0.310	0.262	0.239
	16	-	-0.284	-	0.249
	17	-	-0.324	0.273	0.222
	18	-	-0.443	0.249	0.215
	19	-	-0.320	0.166	0.230
	20	-	-0.333	0.130	0.158
	21	-	-0.308	0.0985	0.145
	22	-	-0.415	0.122	0.159
	23	-	-0.320	0.171	0.176
	24	-	-0.386	0.209	0.198
	25	-	-0.365	0.209	0.255
	26	-	-0.338	0.184	0.190
	27	-	-0.282	0.221	0.226
	28	-	-0.280	0.208	0.230
	29	-	-0.260	0.208	0.212
	30	-	-0.318	0.230	0.230

Temperature Difference > 1°C.

Notes: Temperature differences were calculated as RG_SCOUTDS - RG_FOBKS. A positive difference indicates higher temperatures downstream and a negative difference indicates lower temperatures downstream.

Table E.3: Mean Daily Temperature Difference Between Downstream (RG_SCOUTDS) and Upstream (RG_FOBKS) of the FRO-S AWTF, 2020 to 2022

Month	Day	FRO LAEMP Logger Temperature Differences (°C)			AWTF Logger Temperature Differences (°C)
		2020	2021	2022	2022
May	1	-	-0.409	0.169	0.193
	2	-	-0.395	0.0988	0.147
	3	-	-0.383	0.0864	0.131
	4	-	-0.397	0.0812	0.141
	5	-	-0.370	0.120	0.157
	6	-	-0.392	0.0973	0.186
	7	-	-0.425	0.111	0.214
	8	-	-0.423	0.119	0.223
	9	-	-0.403	0.151	0.201
	10	-	-0.420	0.119	0.145
	11	-	-0.419	0.132	0.161
	12	-	-0.355	0.225	0.199
	13	-	-0.381	0.210	0.207
	14	-	-0.414	0.245	0.230
	15	-	-0.452	0.184	0.181
	16	-	-0.343	0.123	0.162
	17	-	-0.284	0.0772	0.156
	18	-	-0.352	0.0999	0.160
	19	-	-0.362	0.134	0.167
	20	-	-0.374	0.106	0.148
	21	-	-0.397	0.122	0.162
	22	-	-0.411	0.160	0.182
	23	-	-0.384	0.173	0.175
	24	-	-0.366	0.114	0.168
	25	-	-0.387	0.0622	0.125
	26	-	-0.398	0.111	0.130
	27	-	-0.366	0.0421	0.165
	28	-	-0.383	0.00209	0.143
	29	-	-0.404	0.0476	0.148
	30	-	-0.365	0.0691	0.147
	31	-	-0.341	0.0637	0.195
June	1	-	-0.347	0.0964	0.166
	2	-	-0.308	0.0794	0.166
	3	-	-0.268	0.0909	0.153
	4	-	-0.292	0.0756	0.136
	5	-	-0.316	0.0731	0.140
	6	-	-0.343	0.0605	0.156
	7	-	-0.341	0.0643	0.156
	8	-	-0.362	0.0539	0.134
	9	-	-0.352	0.0663	0.162
	10	-	-0.355	0.0382	0.140
	11	-	-0.355	0.0479	0.135
	12	-	-0.347	0.0527	0.141
	13	-	-0.332	0.0906	0.139
	14	-	-0.289	0.0762	0.146
	15	-	-0.288	0.0558	0.129
	16	-	-0.270	0.0570	0.135
	17	-	-0.274	0.0136	0.140
	18	-	-0.264	-0.0269	0.194
	19	-	-0.264	0.0870	-0.00417
	20	-	-0.261	0.0741	-0.115
	21	-	-0.257	0.121	0.0280
	22	-	-0.243	0.0764	0.0548
	23	-	-0.219	0.0871	0.0225
	24	-	-0.234	0.0846	0.0255
	25	-	-0.233	0.0926	0.0673
	26	-	-0.225	0.113	0.0683
	27	-	-0.209	0.103	0.0585
	28	-	-0.201	0.0889	0.0642
	29	-	-0.198	0.100	0.0634
	30	-	-0.191	0.125	0.0957

Temperature Difference > 1°C.

Notes: Temperature differences were calculated as RG_SCOUTDS - RG_FOBKS. A positive difference indicates higher temperatures downstream and a negative difference indicates lower temperatures downstream.

Table E.3: Mean Daily Temperature Difference Between Downstream (RG_SCOUTDS) and Upstream (RG_FOBKS) of the FRO-S AWTF, 2020 to 2022

Month	Day	FRO LAEMP Logger Temperature Differences (°C)			AWTF Logger Temperature Differences (°C)
		2020	2021	2022	2022
July	1	-	-0.227	0.114	0.102
	2	-	-0.229	0.0704	0.0580
	3	-	-0.233	0.115	0.105
	4	-	-0.228	0.141	0.101
	5	-	-0.158	0.112	0.0719
	6	-	-0.193	0.134	0.105
	7	-	-0.228	0.133	0.0888
	8	-	-0.263	0.123	0.0973
	9	-	-0.187	0.112	0.106
	10	-	-0.152	0.132	0.117
	11	-	-0.164	0.147	0.263
	12	-	-0.148	0.138	0.238
	13	-	-0.142	0.131	0.211
	14	-	-0.118	0.136	0.195
	15	-	-0.103	0.0954	0.150
	16	-	-0.115	0.0727	0.126
	17	-	-0.0651	0.0561	0.0975
	18	-	-0.0899	0.0706	0.0634
	19	-	-0.0816	0.0147	0.0514
	20	-	-0.0899	0.0192	0.101
	21	-	-0.109	0.0381	0.108
	22	-	-0.152	0.0991	0.0808
	23	-	-0.213	0.0468	0.0745
	24	-0.0918	-0.214	0.0316	0.0499
	25	-0.146	-0.191	0.0489	0.0426
	26	-0.141	-0.166	0.0592	0.0669
	27	-0.148	-0.167	0.0525	0.0622
	28	-0.168	-0.151	0.0247	0.0448
	29	-0.117	-0.100	0.0543	0.0275
	30	-0.131	-0.107	0.0383	0.00908
	31	-0.165	-0.0873	0.0397	0.0211
August	1	-0.181	-0.116	0.100	0.0460
	2	-0.152	-0.0257	0.0724	-0.00685
	3	-0.0930	-0.183	0.117	0.0439
	4	-0.154	-0.0409	0.102	0.0312
	5	-0.108	-0.111	0.0118	-0.0271
	6	-0.0765	-0.0940	-0.0272	-0.0287
	7	-0.148	-0.0151	-0.0329	0.00326
	8	-0.161	-0.0817	-0.0428	-0.00855
	9	-0.252	-0.175	-0.0585	0.0219
	10	-0.218	-0.164	-0.0793	-0.0534
	11	-0.106	-0.236	-0.164	-0.0410
	12	-0.122	-0.135	-0.0558	-0.0214
	13	-0.180	-0.133	-0.0112	-0.00182
	14	-0.213	-0.0769	-0.0485	0.000621
	15	-0.246	-0.0702	-0.0433	-0.0135
	16	-0.224	0.000906	-0.0756	-0.0259
	17	-0.245	-0.0261	-0.219	-0.0301
	18	-0.199	-0.0329	-0.336	-0.0957
	19	-0.141	-0.0140	-0.385	-0.110
	20	-0.122	-0.0151	-0.327	-0.133
	21	-0.168	-0.0230	-0.330	-0.140
	22	-0.270	-0.0142	-0.435	-0.148
	23	-0.208	-0.0300	-0.181	-0.116
	24	-0.165	-0.0126	-0.178	-0.138
	25	-0.164	-0.000844	-0.212	-0.140
	26	-0.243	-0.0105	-0.212	-0.159
	27	-0.223	-0.0379	-0.0945	-0.115
	28	-0.233	-0.0388	0.00620	-0.0497
	29	-0.154	-0.0197	-0.0420	-0.0655
	30	-0.226	0.00414	-0.135	-0.0889
	31	-0.239	0.0157	-0.151	-0.0448

Temperature Difference > 1°C.

Notes: Temperature differences were calculated as RG_SCOUTDS - RG_FOBKS. A positive difference indicates higher temperatures downstream and a negative difference indicates lower temperatures downstream.

Table E.3: Mean Daily Temperature Difference Between Downstream (RG_SCOUTDS) and Upstream (RG_FOBKS) of the FRO-S AWTF, 2020 to 2022

Month	Day	FRO LAEMP Logger Temperature Differences (°C)			AWTF Logger Temperature Differences (°C)
		2020	2021	2022	2022
September	1	-0.297	-0.0325	-0.128	-0.0643
	2	-0.329	-0.0567	-0.0635	-0.0492
	3	-0.288	-0.117	-0.0493	-0.0399
	4	-0.344	-0.0984	-0.0671	-0.0491
	5	-0.351	-0.0865	-0.0534	-0.0667
	6	-0.314	-0.153	-0.0635	-0.0372
	7	-0.196	-0.0939	-0.0800	-0.0635
	8	-0.243	-0.0576	-0.00745	-0.0624
	9	-0.339	-0.120	0.0462	-0.0193
	10	-0.397	-0.0450	0.00980	-0.0308
	11	-0.350	-0.0866	-0.0559	-0.0314
	12	-0.338	-0.0672	-0.0427	-0.0447
	13	-0.215	-0.0864	-0.117	-0.0246
	14	-0.290	-0.0775	-0.0959	-0.0444
	15	-0.399	-0.0367	-0.0991	-0.0108
	16	-0.363	-0.0451	-0.0577	-0.0265
	17	-0.406	-0.0846	-0.0792	-0.0278
	18	-0.379	-0.134	-0.0119	-0.00159
	19	-0.422	-0.125	-0.0271	-0.0439
	20	-0.383	-0.125	-0.0595	-0.0105
	21	-0.371	-0.145	-0.0230	0.0484
	22	-0.351	-0.147	-0.0444	-0.0651
	23	-0.365	-0.128	-0.0113	-0.0501
	24	-0.339	-0.144	-0.0606	-0.0435
	25	-0.316	-0.171	0.0187	-0.00523
	26	-0.348	-0.154	0.00526	-0.0327
	27	-0.373	-0.124	-0.0170	-0.0426
	28	-0.357	-0.0491	-0.00667	-0.0347
	29	-0.493	-0.0591	-0.00284	-0.0722
	30	-0.433	-0.136	-0.107	-0.122
October	1	-0.393	-0.150	-0.253	-0.147
	2	-0.415	-0.101	-0.215	-0.118
	3	-0.374	-0.130	-0.279	-0.148
	4	-0.403	-0.134	-0.224	-0.134
	5	-0.412	-0.123	-0.253	-0.159
	6	-0.364	-0.0783	-0.373	-0.210
	7	-0.373	-0.0285	-0.401	-0.225
	8	-0.319	-0.0633	-0.414	-0.212
	9	-0.338	-0.128	-0.358	-0.182
	10	-0.336	-0.142	-0.306	-0.175
	11	-0.262	-0.103	-0.272	-0.146
	12	-0.280	-0.111	-0.252	-0.126
	13	-0.285	-0.146	-0.252	-0.138
	14	-0.507	-0.134	-0.266	-0.143
	15	-0.622	-0.204	-0.251	-0.129
	16	-0.590	-0.210	-0.248	-0.122
	17	-0.568	-0.198	-0.211	-0.0891
	18	-0.586	-0.162	-0.182	-0.0762
	19	-0.568	-0.177	-0.154	-0.0686
	20	-0.576	-0.135	-0.138	-0.0813
	21	-0.516	-0.158	-0.132	-0.0957
	22	-0.474	-0.171	-0.00384	-0.00880
	23	-0.452	-0.134	0.0318	0.0126
	24	-	-0.146	0.0785	0.0330
	25	-	-0.140	-	0.0213
	26	-	-0.225	-	0.147
	27	-0.592	-0.128	-	0.157
	28	-0.692	-0.0898	-	0.166
	29	-0.747	-0.110	-	0.118
	30	-0.658	-0.0521	-	0.141
	31	-0.575	-0.0616	-	-0.0113

Temperature Difference > 1°C.

Notes: Temperature differences were calculated as RG_SCOUTDS - RG_FOBKS. A positive difference indicates higher temperatures downstream and a negative difference indicates lower temperatures downstream.

Table E.3: Mean Daily Temperature Difference Between Downstream (RG_SCOUTDS) and Upstream (RG_FOBKS) of the FRO-S AWTF, 2020 to 2022

Month	Day	FRO LAEMP Logger Temperature Differences (°C)			AWTF Logger Temperature Differences (°C)
		2020	2021	2022	2022
November	1	-0.530	-	-	0.00946
	2	-0.557	-0.0165	-	0.0323
	3	-0.579	-0.134	-	0.135
	4	-0.649	-0.188	-	0.0684
	5	-0.681	-0.143	-	0.224
	6	-0.533	-0.0353	-	0.171
	7	-0.539	0.00220	-	0.377
	8	-	-0.00598	-	0.661
	9	-	0.0138	-	0.541
	10	-0.626	-0.0190	-	0.515
	11	-0.596	0.0278	-	0.455
	12	-	-0.0478	-	0.382
	13	-0.551	-0.0435	-	0.387
	14	-0.541	-0.0824	-	0.289
	15	-0.529	-0.170	-	0.128
	16	-0.545	-0.0248	-	0.316
	17	-0.579	-	-	0.451
	18	-0.544	-	-	0.344
	19	-0.514	-0.0452	-	0.325
	20	-	-0.0394	-	0.604
	21	-0.509	-0.0644	-	0.680
	22	-	-0.0607	-	0.473
	23	-	-0.0519	-	0.306
	24	-0.513	-0.0273	-	0.325
	25	-0.538	-0.0471	-	0.314
	26	-0.517	-0.0722	-	0.307
	27	-0.566	-0.0333	-	0.364
	28	-	-0.112	-	0.439
	29	-	-0.0646	-	0.518
	30	-	-0.0472	-	0.599
December	1	-	-0.0984	-	0.710
	2	-	-0.00914	-	0.831
	3	-	0.0420	-	1.01
	4	-	0.0356	-	0.994
	5	-	-	-	0.933
	6	-	-	-	0.609
	7	-	-	-	0.282
	8	-	-	-	0.252
	9	-0.507	-	-	0.217
	10	-0.463	-	-	0.245
	11	-	-	-	0.248
	12	-	-	-	0.258
	13	-	-	-	0.474
	14	-	-	-	0.368
	15	-	-	-	0.327
	16	-	-	-	0.331
	17	-0.534	-	-	0.350
	18	-0.515	-	-	0.408
	19	-0.502	-	-	0.420
	20	-	-	-	0.421
	21	-	-	-	0.351
	22	-	-	-	0.155
	23	-	-	-	0.148
	24	-	-	-	0.289
	25	-	-	-	0.376
	26	-	-	-	0.387
	27	-	-	-	0.441
	28	-	-	-	0.455
	29	-	-	-	0.446
	30	-	-	-	0.416
	31	-	-	-	0.408
Number of Days		123	261	227	363
Number of Exceedances		0	0	0	3
Percent of Days Exceeding Threshold		0	0	0	0.826

Temperature Difference > 1°C.

Notes: Temperature differences were calculated as RG_SCOUTDS - RG_FOBKS. A positive difference indicates higher temperatures downstream and a negative difference indicates lower temperatures downstream.

Table E.5: Number of Dry Days at Hydrometric Stations, FRO LAEMP, 2017 to 2022

Site	2017/18	2018/19	2019/20	2020/21	2021/22
Henretta Creek Survey					
Henretta Creek Drying Section	-	-	-	269	278
Northern Drying Survey					
FR_UFR1	-	-	0	0	0
FR_FR1	-	-	0	93	83
FR_FRUPP	-	-	28	0	0
FR_FOUCL	-	-	0	0	0
FR_FRDSCC1	-	-	0	0	0
FR_MULTIPATE	-	-	0	0	0
Northern Drying Section	-	-	147	181	167
Southern Drying Survey					
FR_FR2	0	0	0	0	0
FR_FR3	0	0	0	0	0
FR_SCOUTDS	0	0	0	0	0
FR_FR4	0	43	0	0	0
FR_FRCP1	0	0	14	0	0
FR_FRCP1SW	97	184	98	91	87
FR_FRRD	0	0	0	0	0
GH_PC2	0	0	0	0	0
FR_FRABCH	0	0	0	0	0
Southern Drying Section	97	185	98	119	161

Note: "-" indicates no data available.

APPENDIX F

**SUBSTRATE
QUALITY**

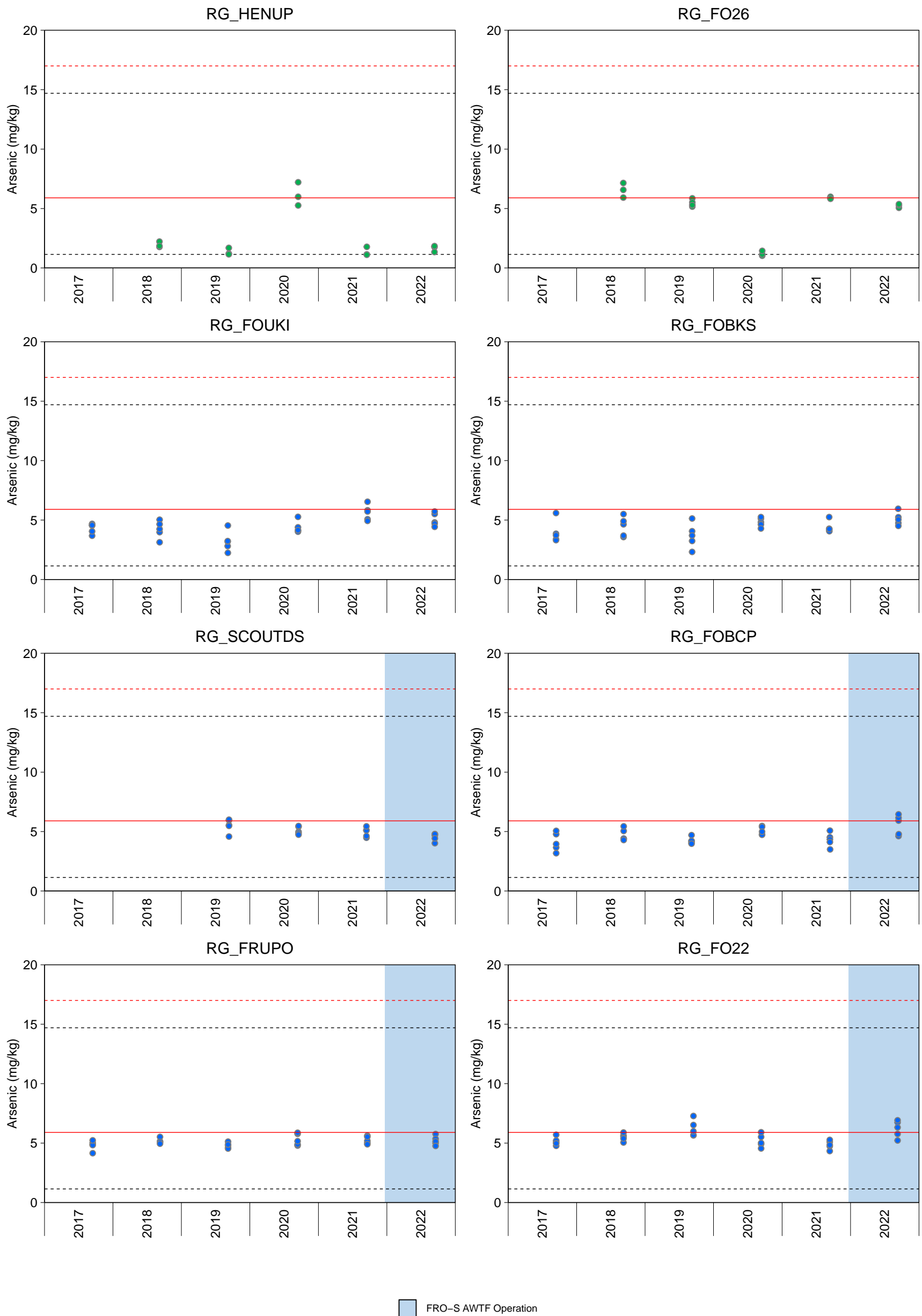


Figure .1: Concentrations Relative to British Columbia Working Sediment Quality Guidelines, FRO LAEMP, 2017 to 2022

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BCMOECs 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

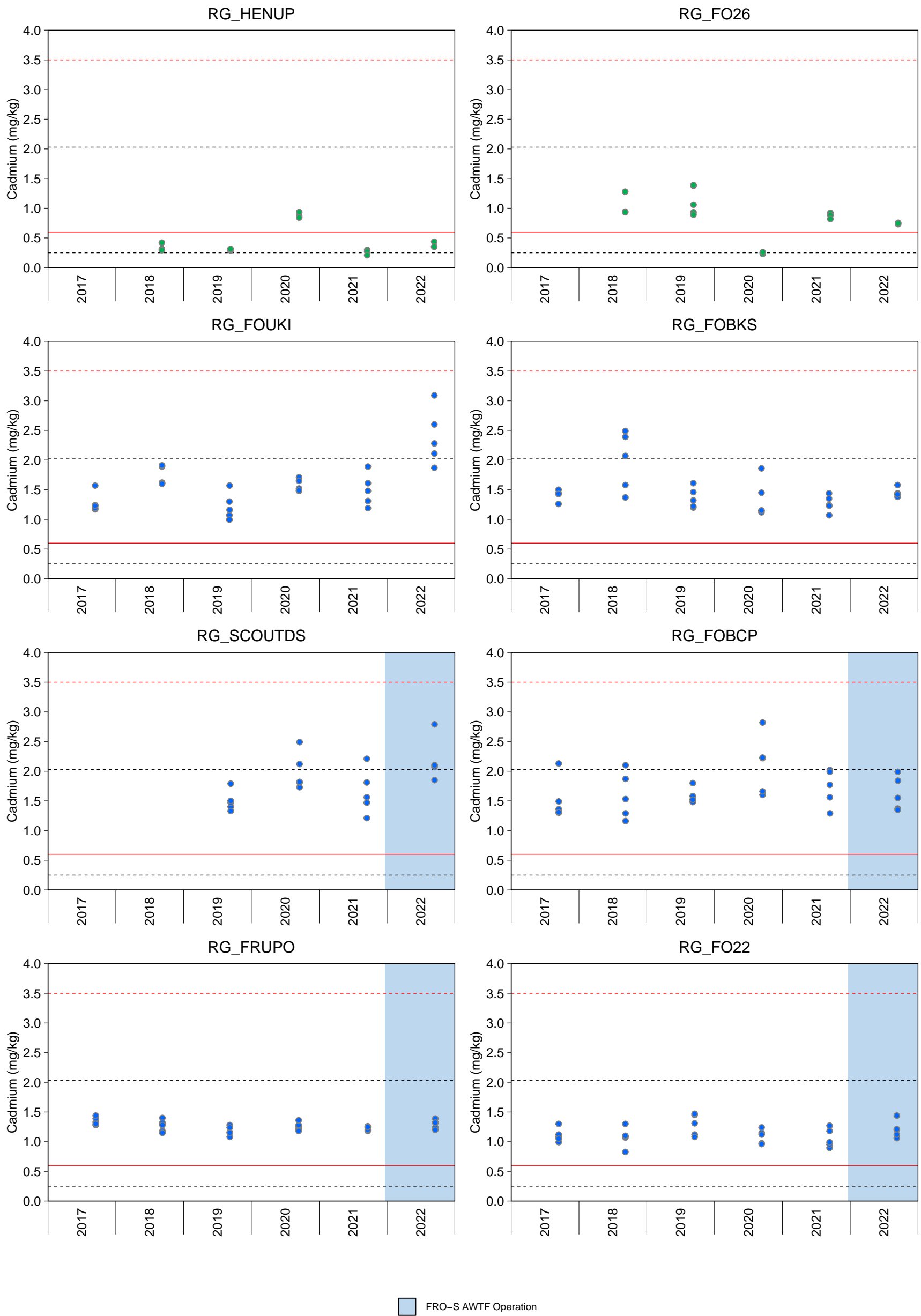


Figure .1: Concentrations Relative to British Columbia Working Sediment Quality Guidelines, FRO LAEMP, 2017 to 2022

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BC MOECCS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

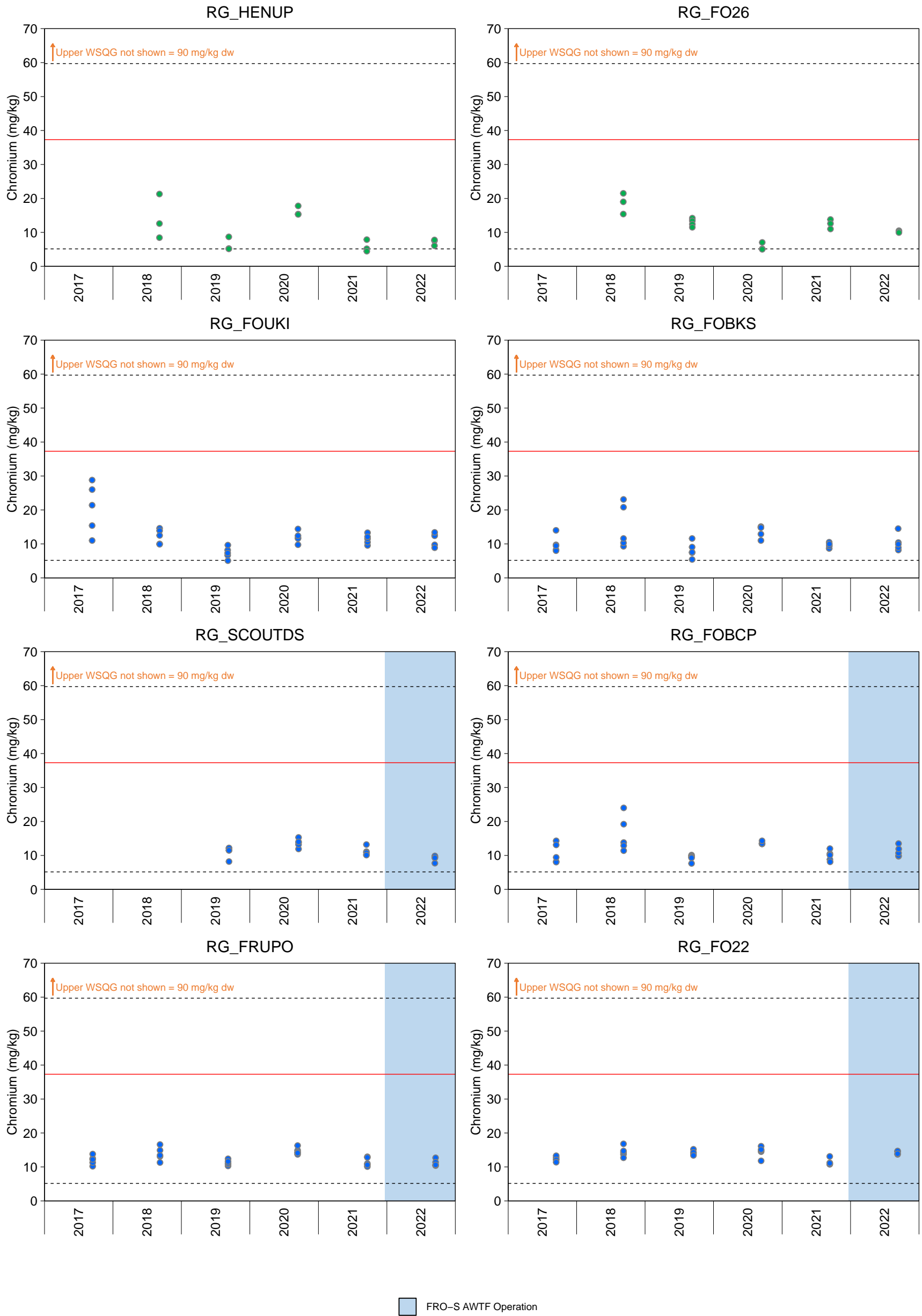


Figure .1: Concentrations Relative to British Columbia Working Sediment Quality Guidelines, FRO LAEMP, 2017 to 2022

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BCMOECES 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

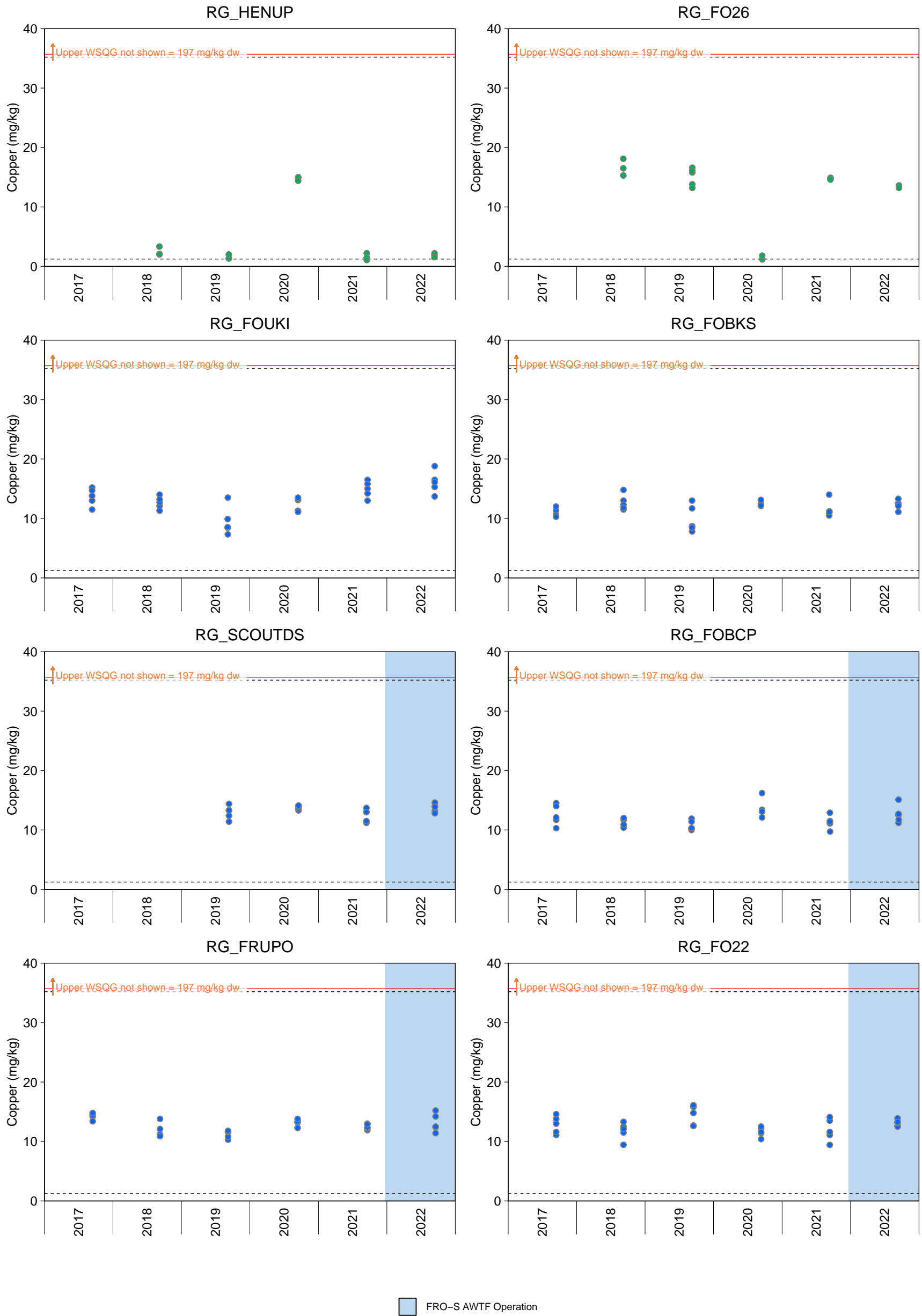


Figure .1: Concentrations Relative to British Columbia Working Sediment Quality Guidelines, FRO LAEMP, 2017 to 2022

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BCMOEECS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

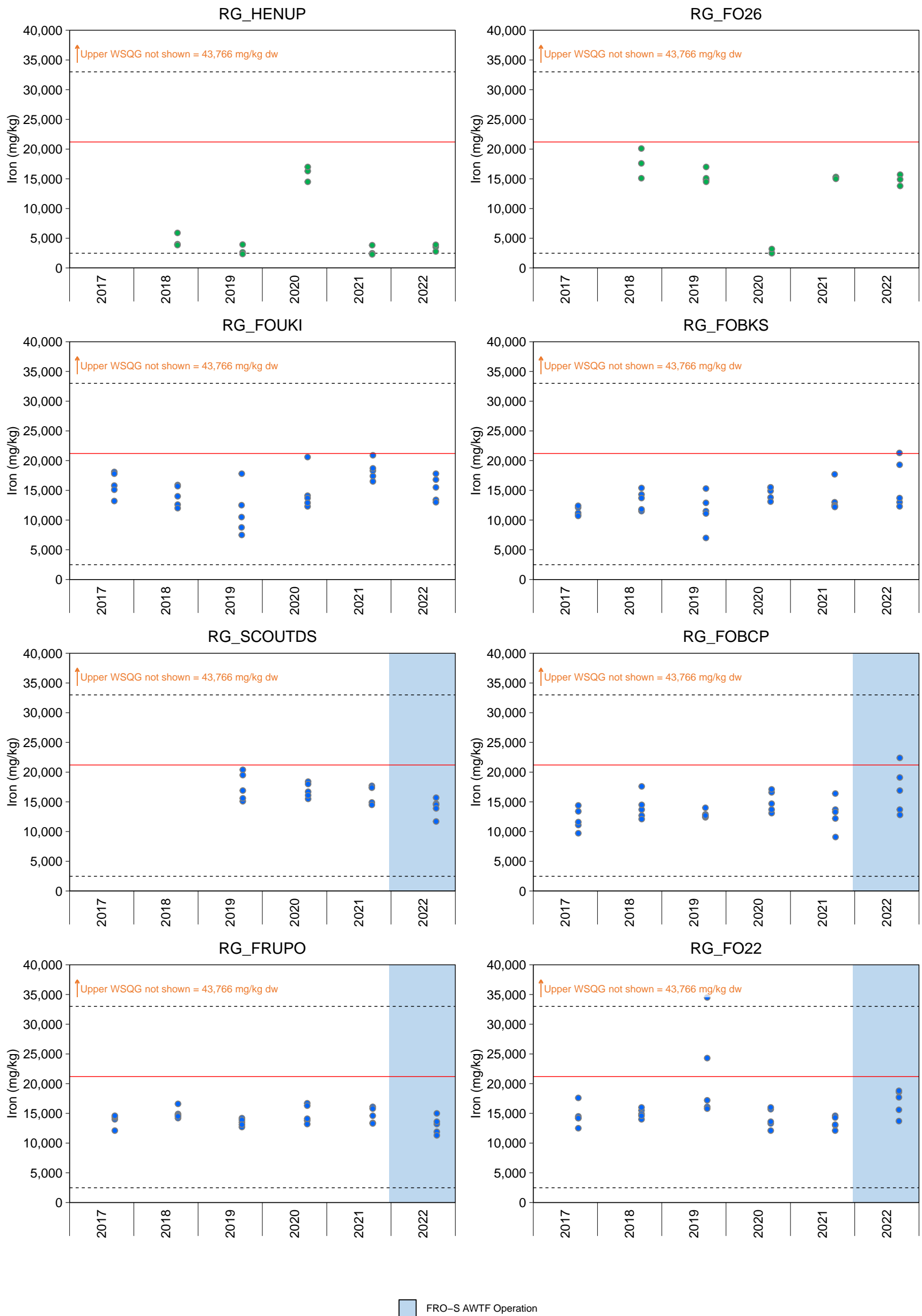


Figure .1: Concentrations Relative to British Columbia Working Sediment Quality Guidelines, FRO LAEMP, 2017 to 2022

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BCMOEECS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

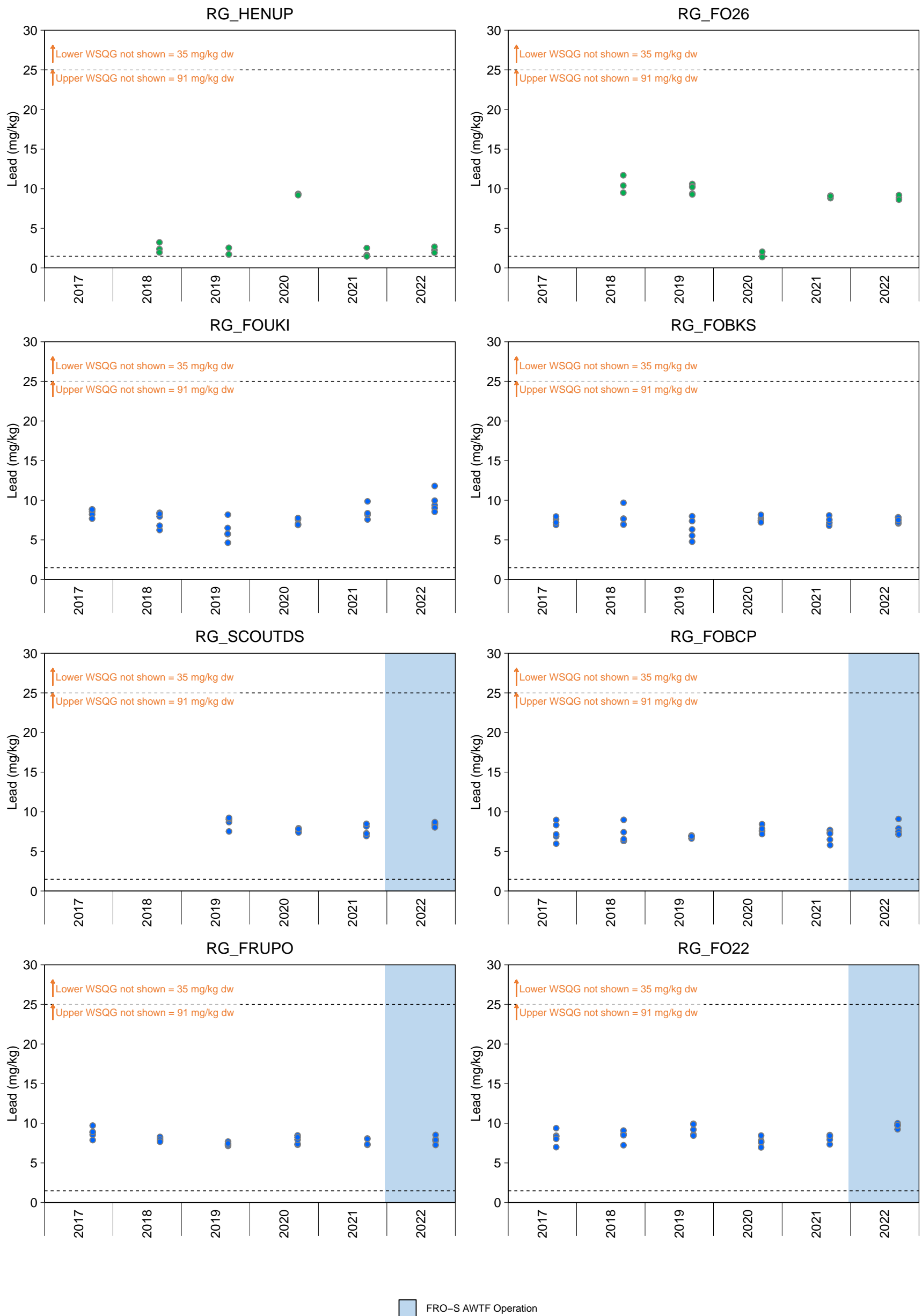


Figure .1: Concentrations Relative to British Columbia Working Sediment Quality Guidelines, FRO LAEMP, 2017 to 2022

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BCMOECSS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

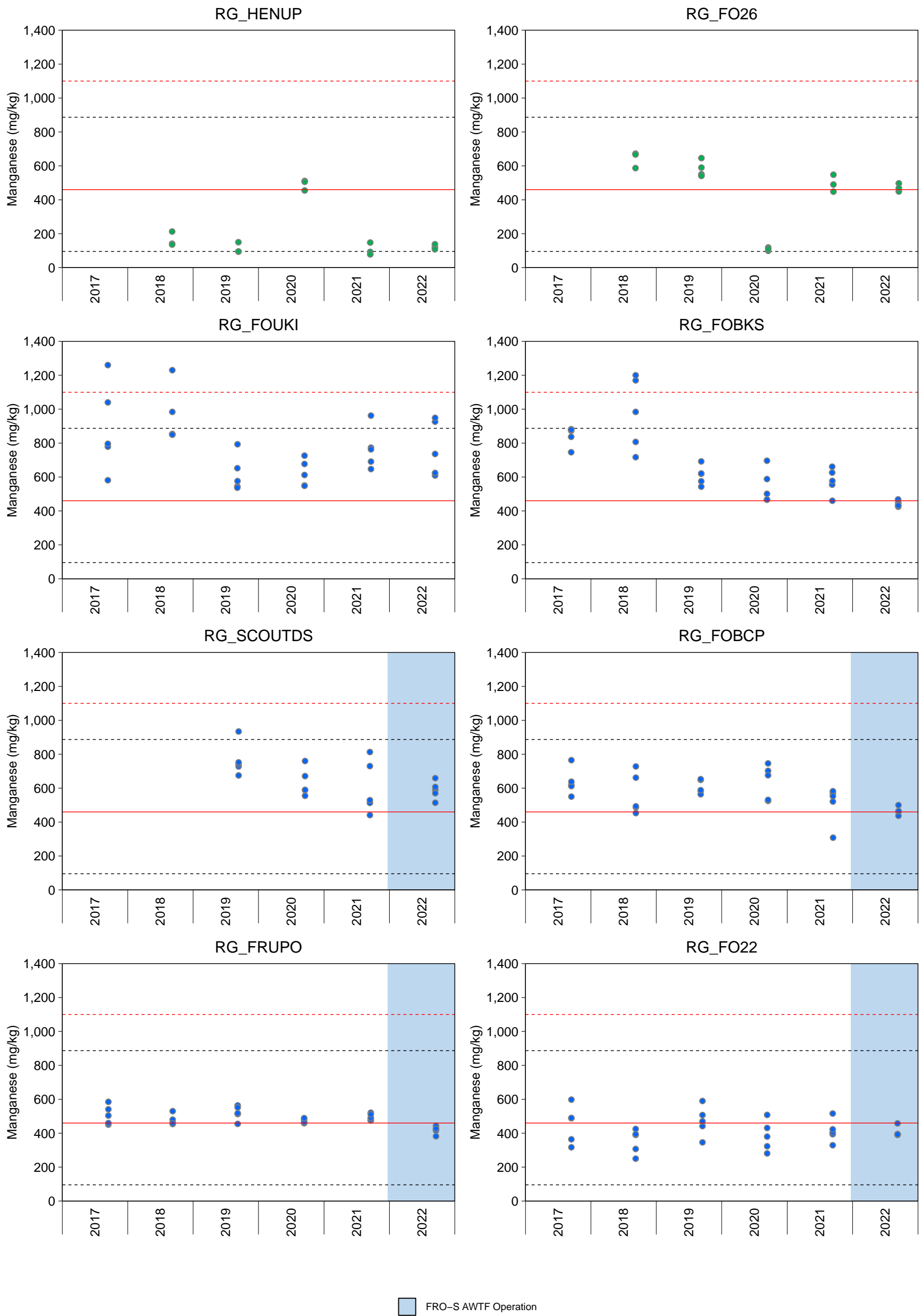


Figure .1: Concentrations Relative to British Columbia Working Sediment Quality Guidelines, FRO LAEMP, 2017 to 2022

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BC MOECCS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

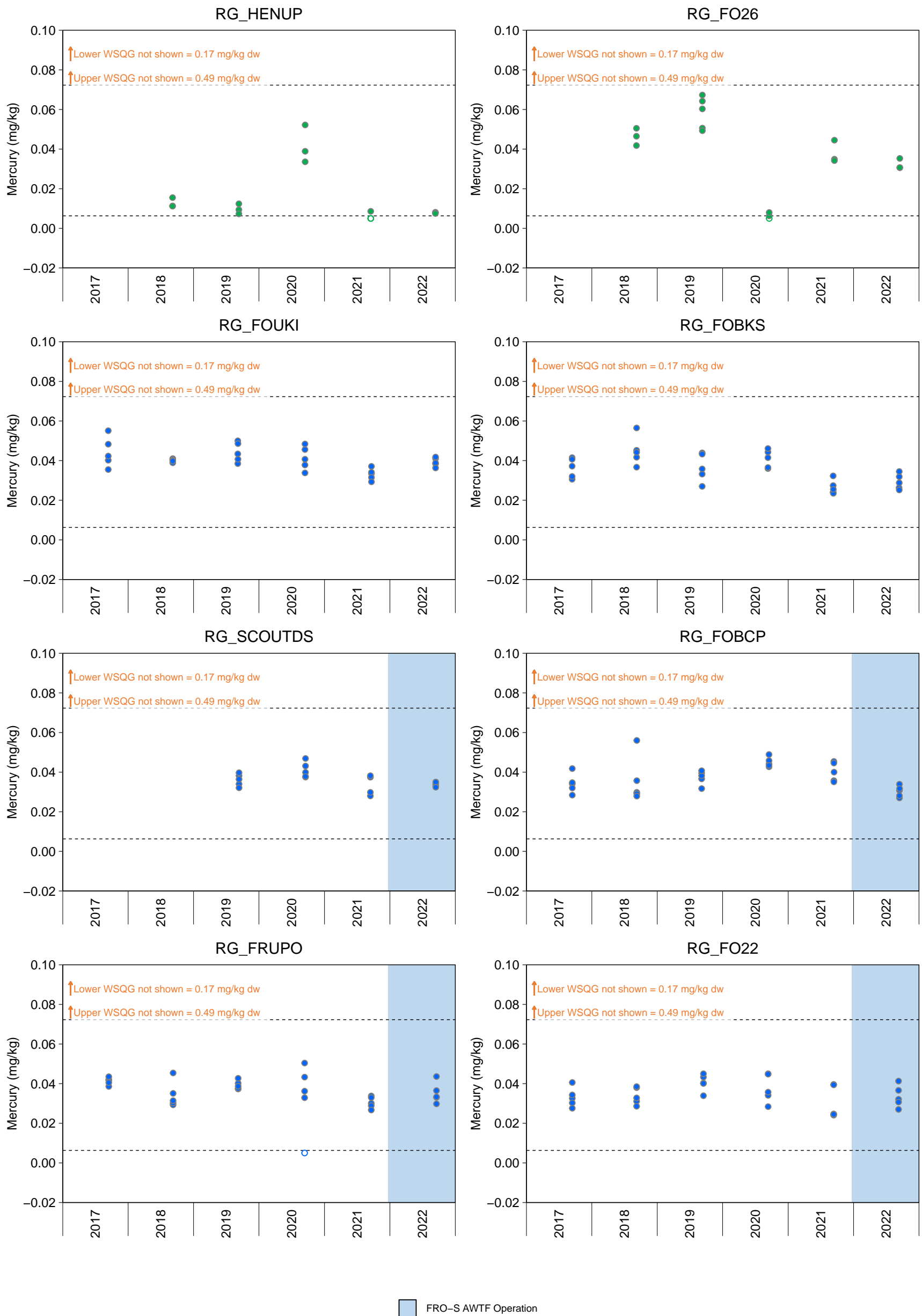


Figure .1: Concentrations Relative to British Columbia Working Sediment Quality Guidelines, FRO LAEMP, 2017 to 2022

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BCMOECSS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

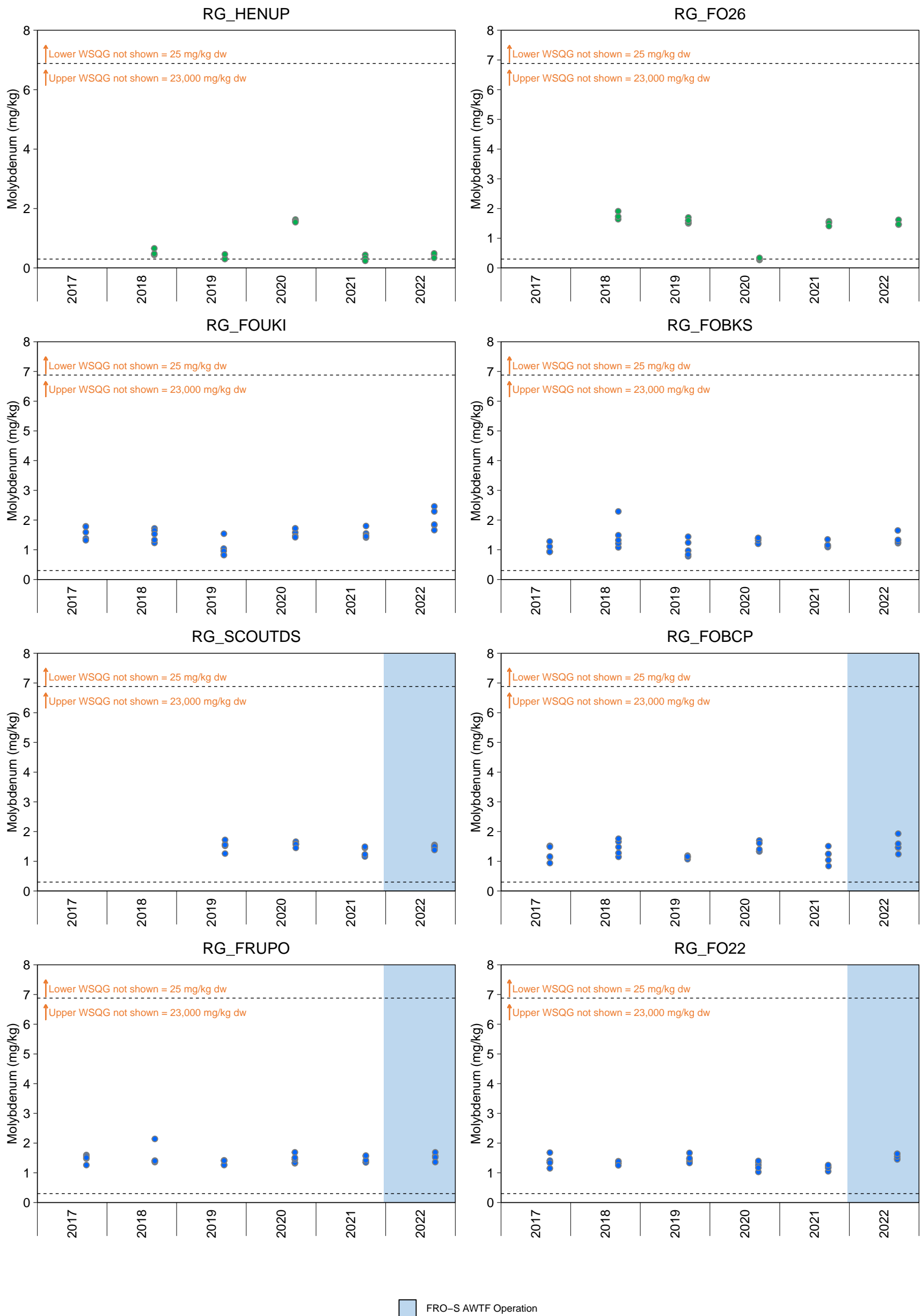


Figure .1: Concentrations Relative to British Columbia Working Sediment Quality Guidelines, FRO LAEMP, 2017 to 2022

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BCMOEVCS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

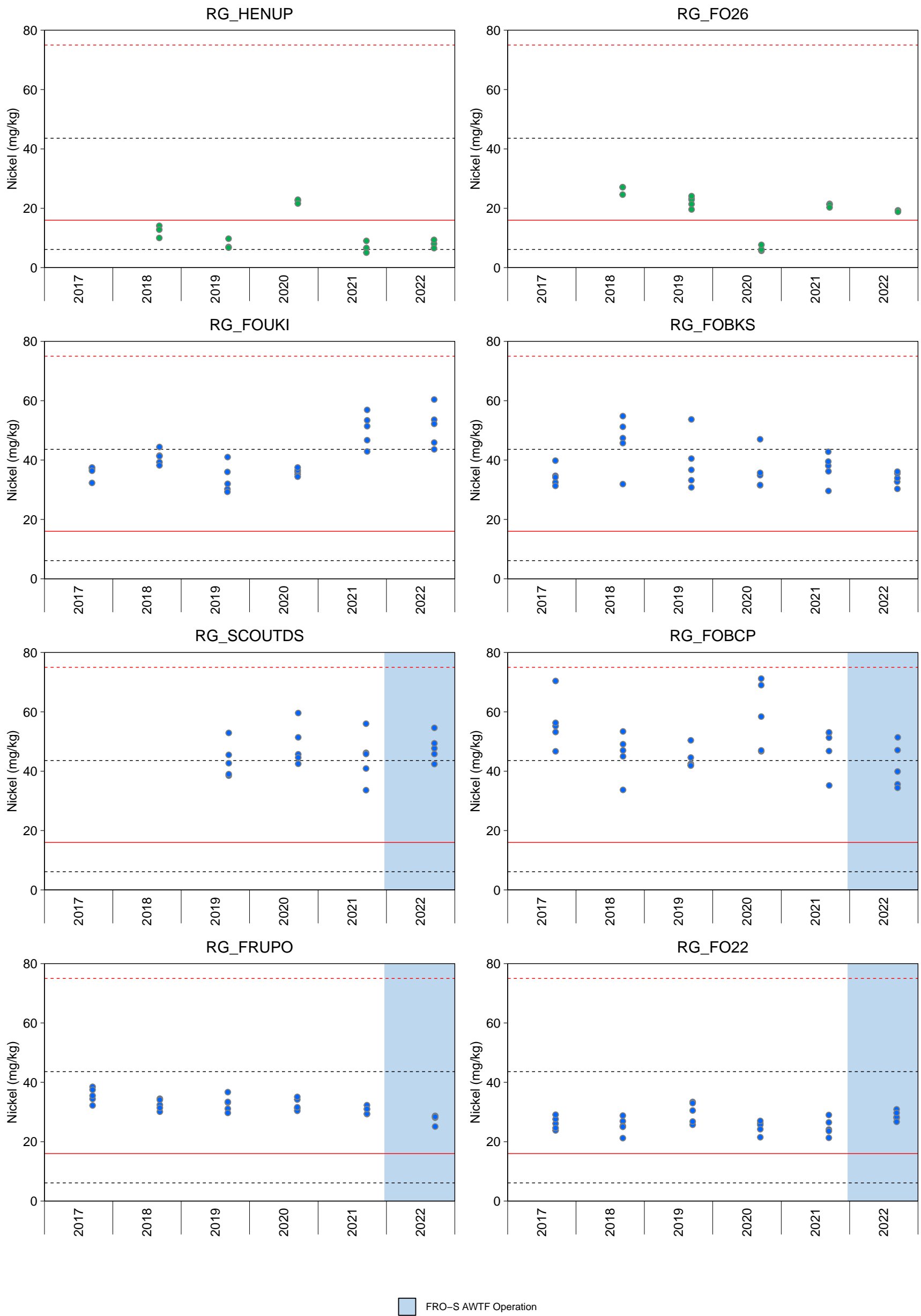


Figure .1: Concentrations Relative to British Columbia Working Sediment Quality Guidelines, FRO LAEMP, 2017 to 2022

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BCMOEECS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

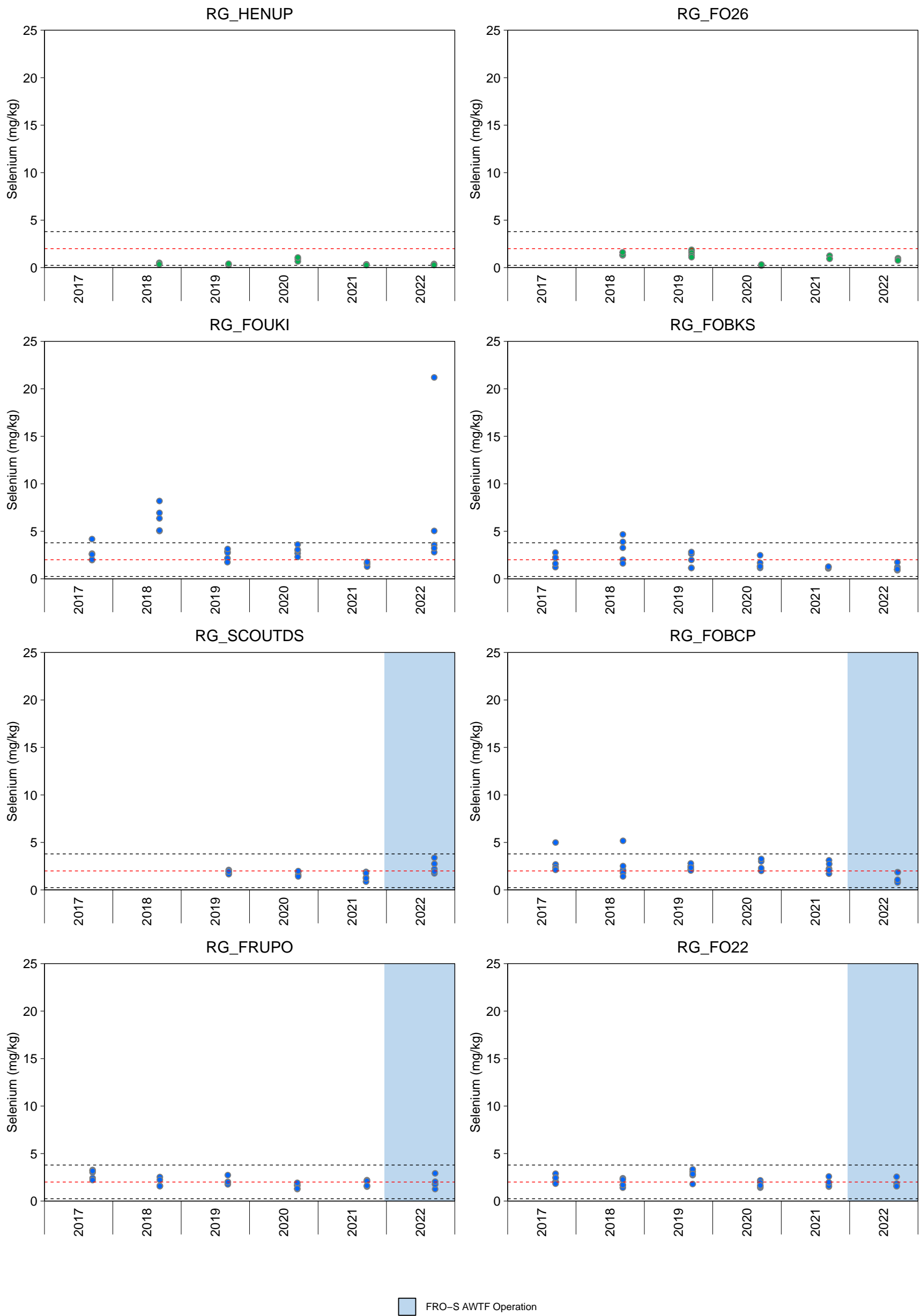


Figure .1: Concentrations Relative to British Columbia Working Sediment Quality Guidelines, FRO LAEMP, 2017 to 2022

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BCMOEECS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

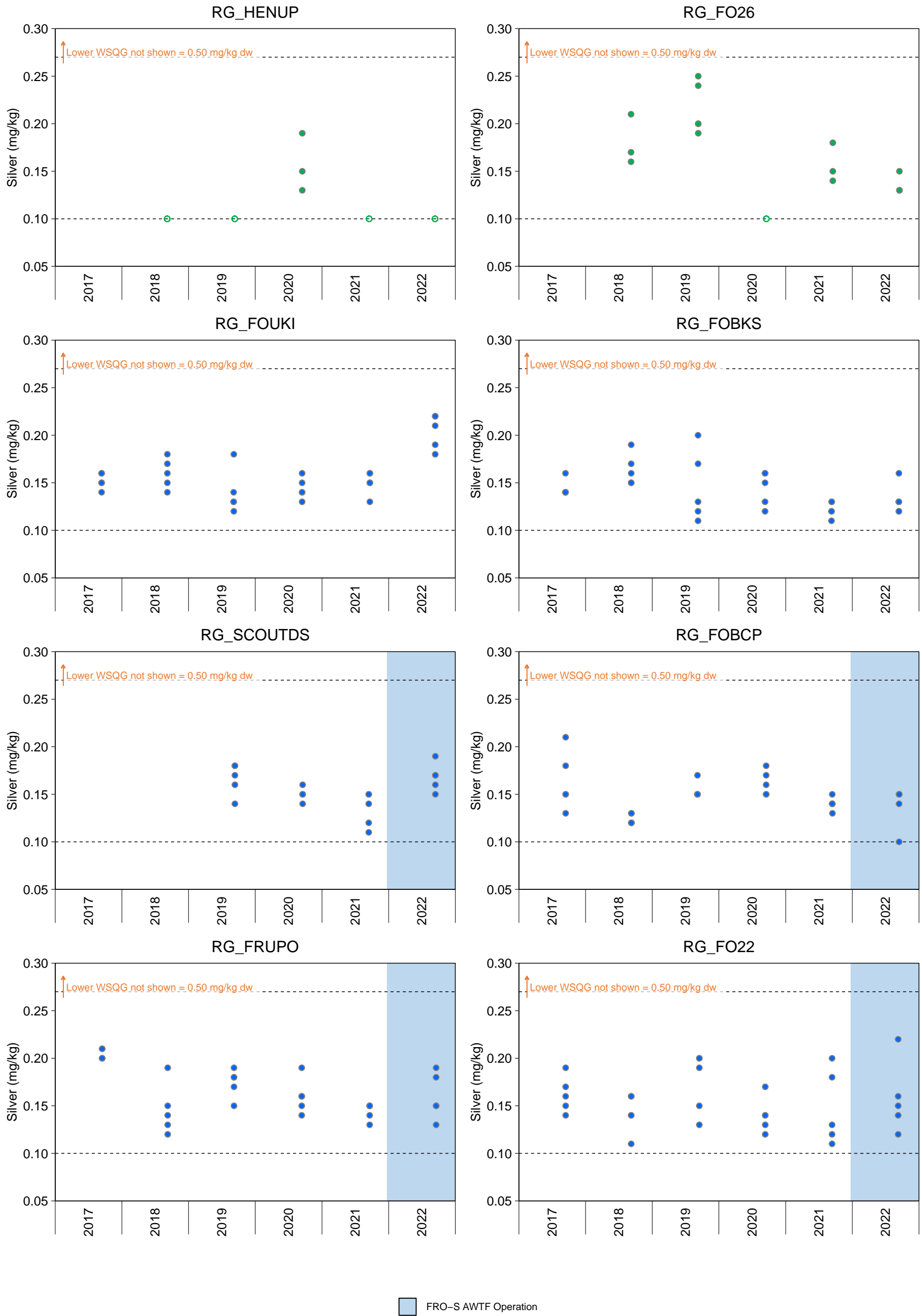


Figure .1: Concentrations Relative to British Columbia Working Sediment Quality Guidelines, FRO LAEMP, 2017 to 2022

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BCMOCCS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

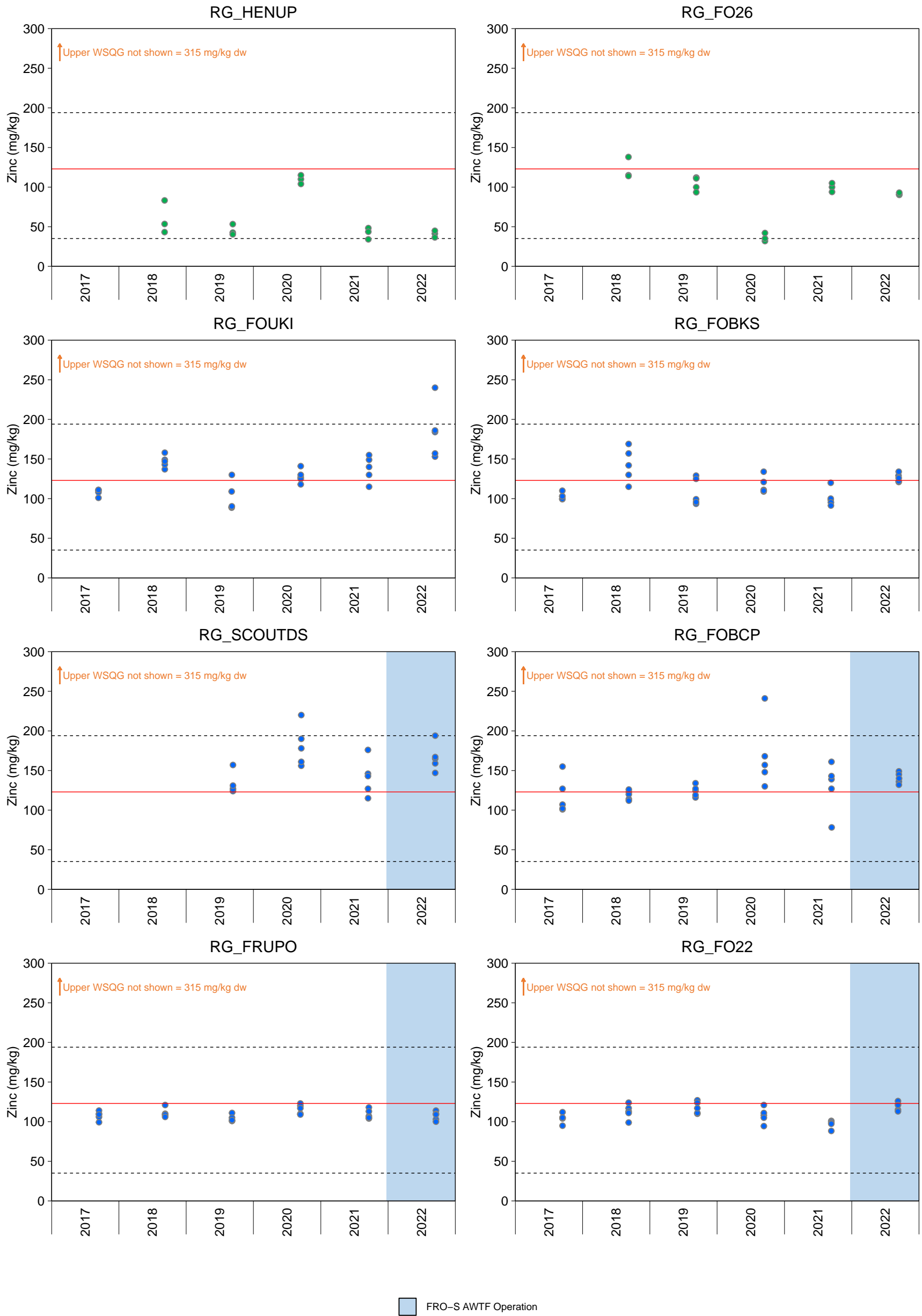


Figure .1: Concentrations Relative to British Columbia Working Sediment Quality Guidelines, FRO LAEMP, 2017 to 2022

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BC MOECCS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

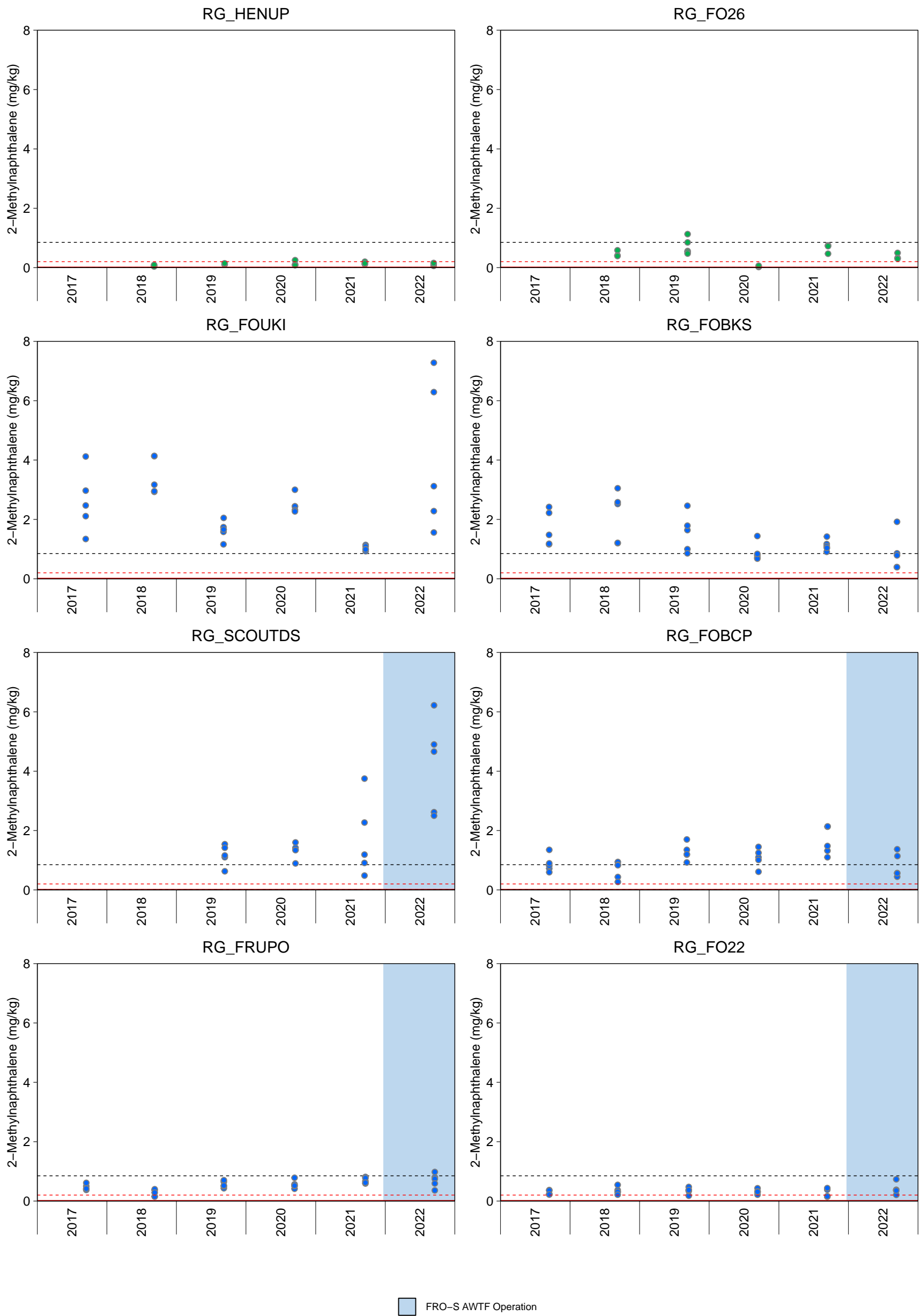


Figure F.2: Concentrations Relative to British Columbia Working Sediment Quality Guidelines, FRO LAEMP, 2017 to 2022

Concentrations Relative to British Columbia Working Sediment

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BC MOECCS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

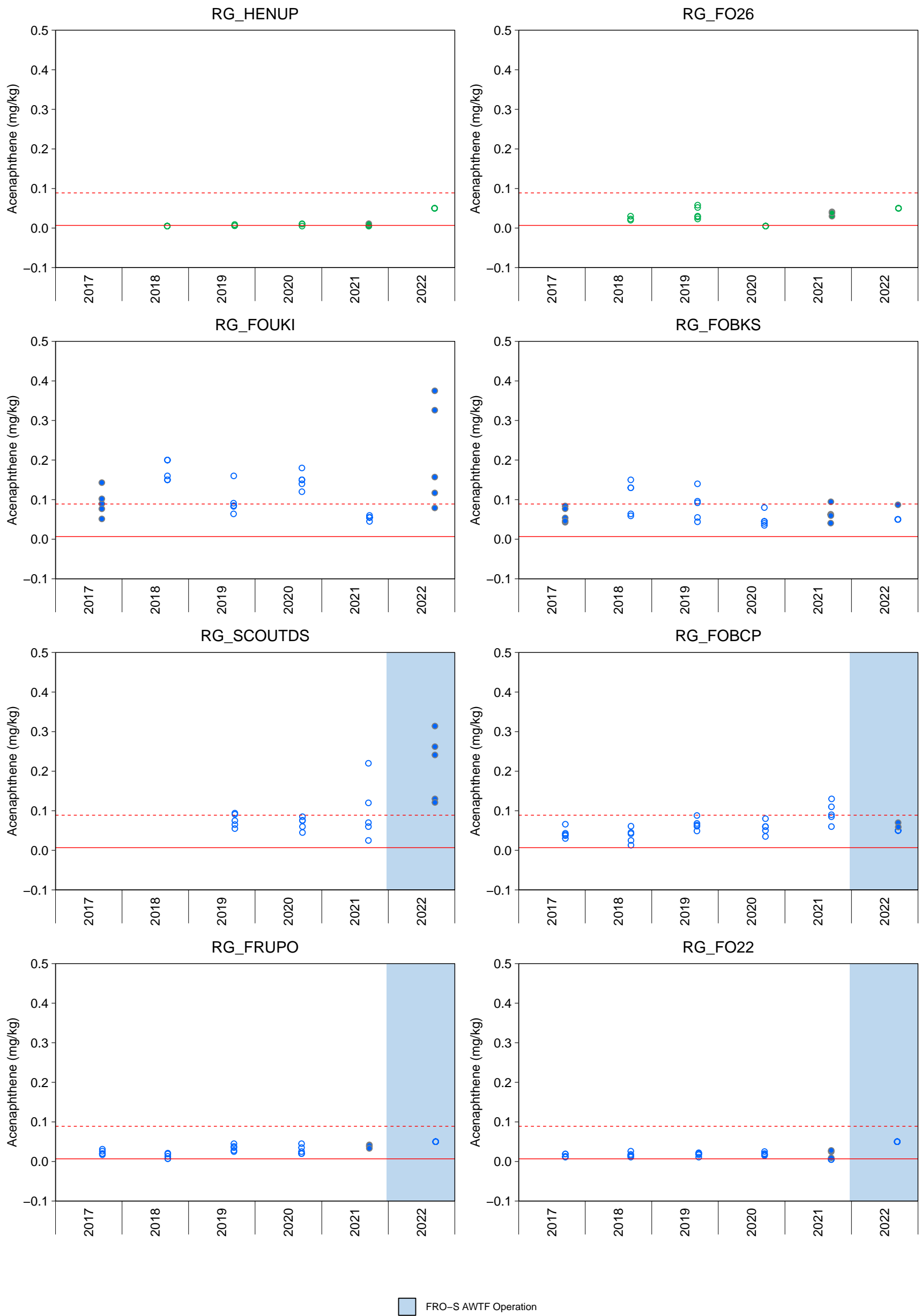


Figure F.2:

7

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BCMOEECS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

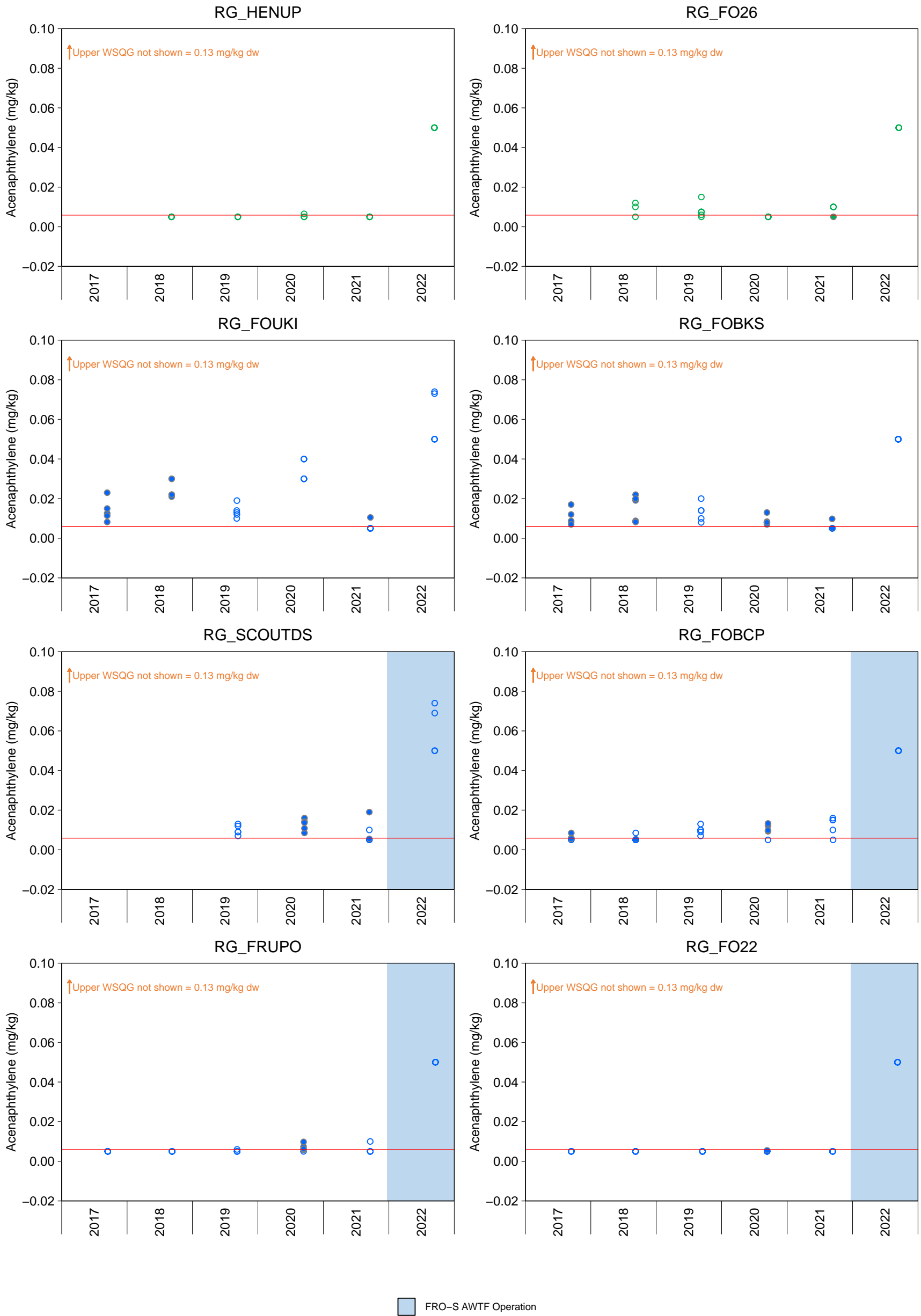


Figure F.2:

7

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BCMOCCS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

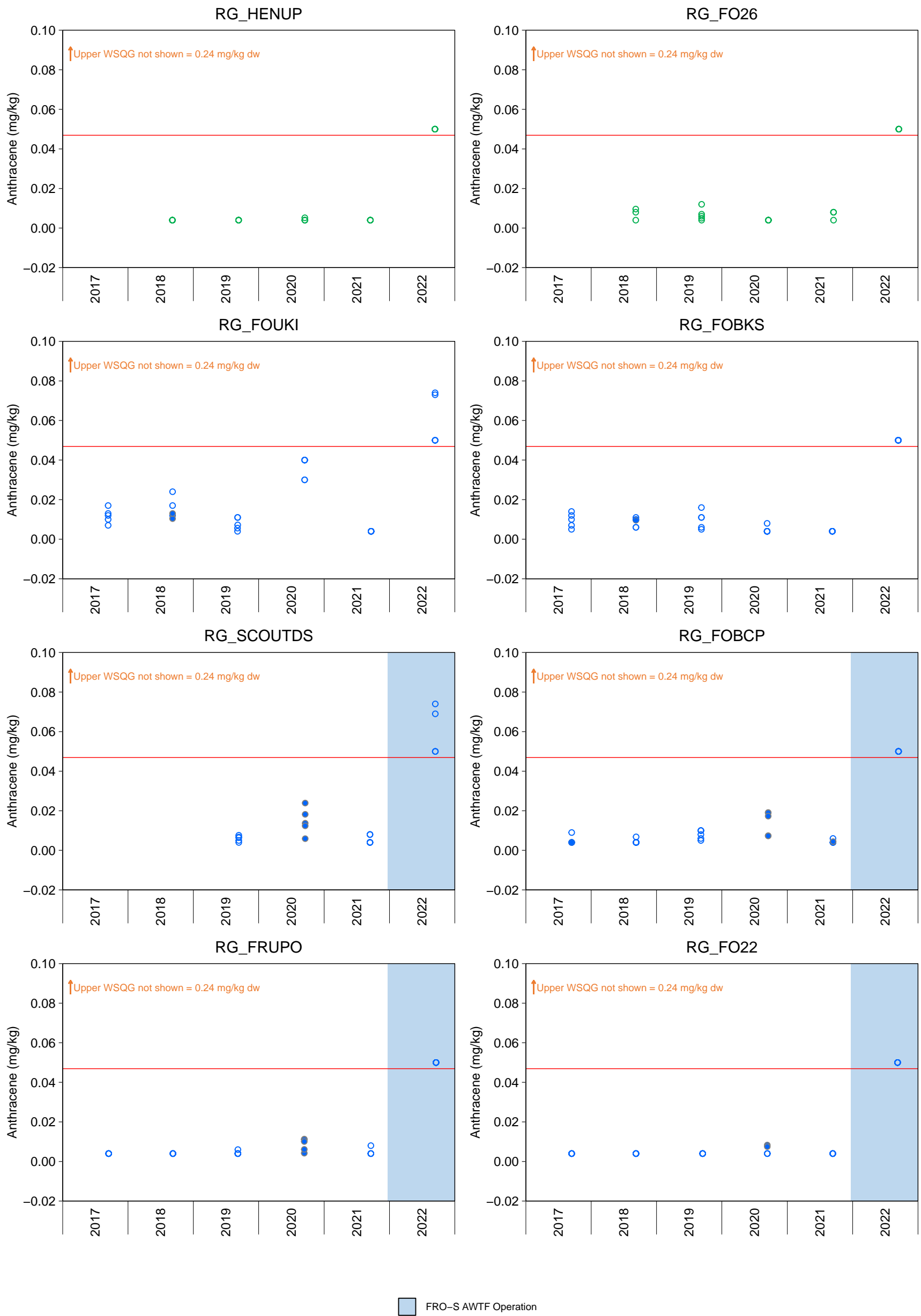


Figure F.2:

7

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BCMOECSS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

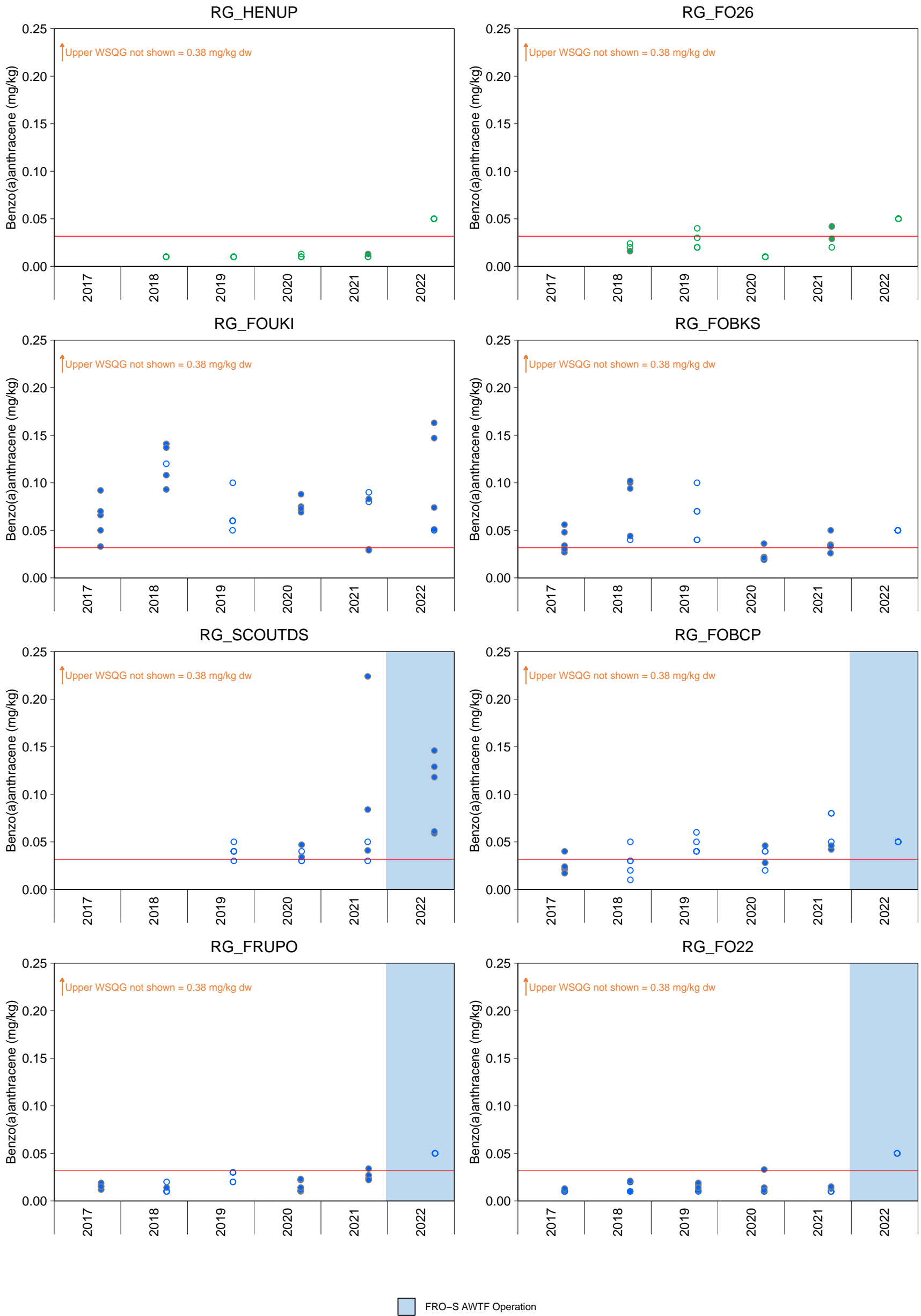


Figure F.2:

7

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BCMOEECS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

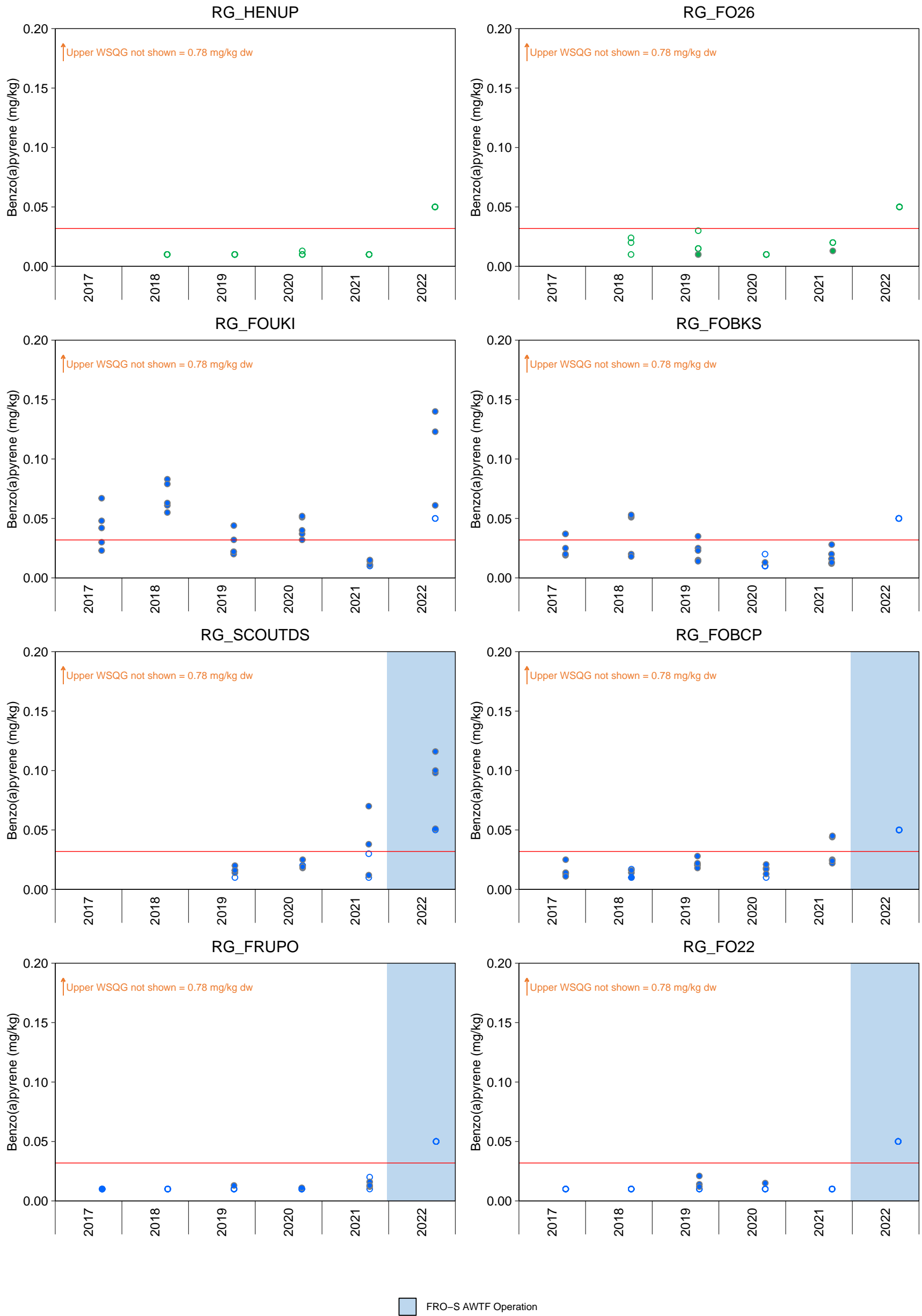


Figure F.2:

7

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BCMOEECS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

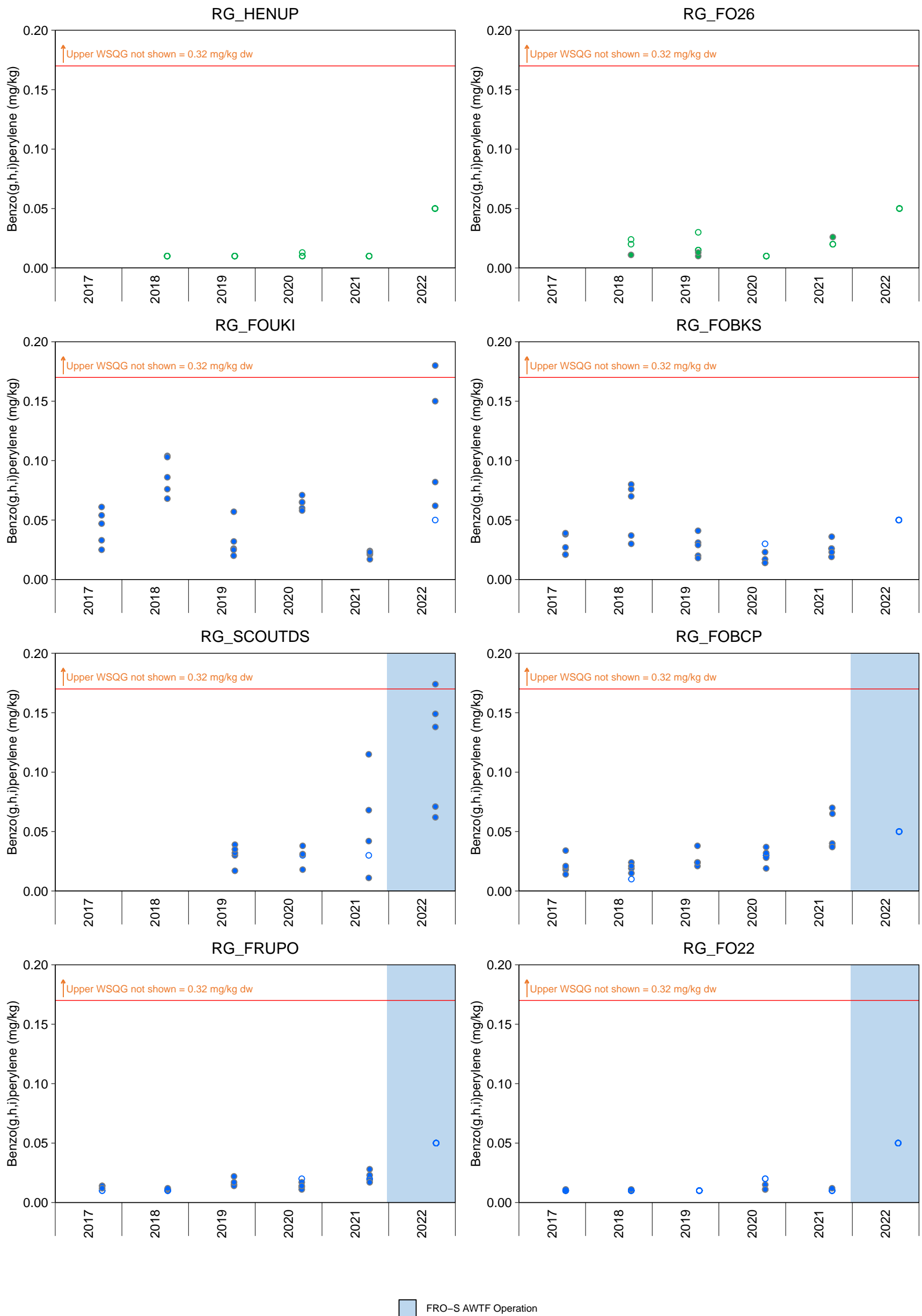


Figure F.2:

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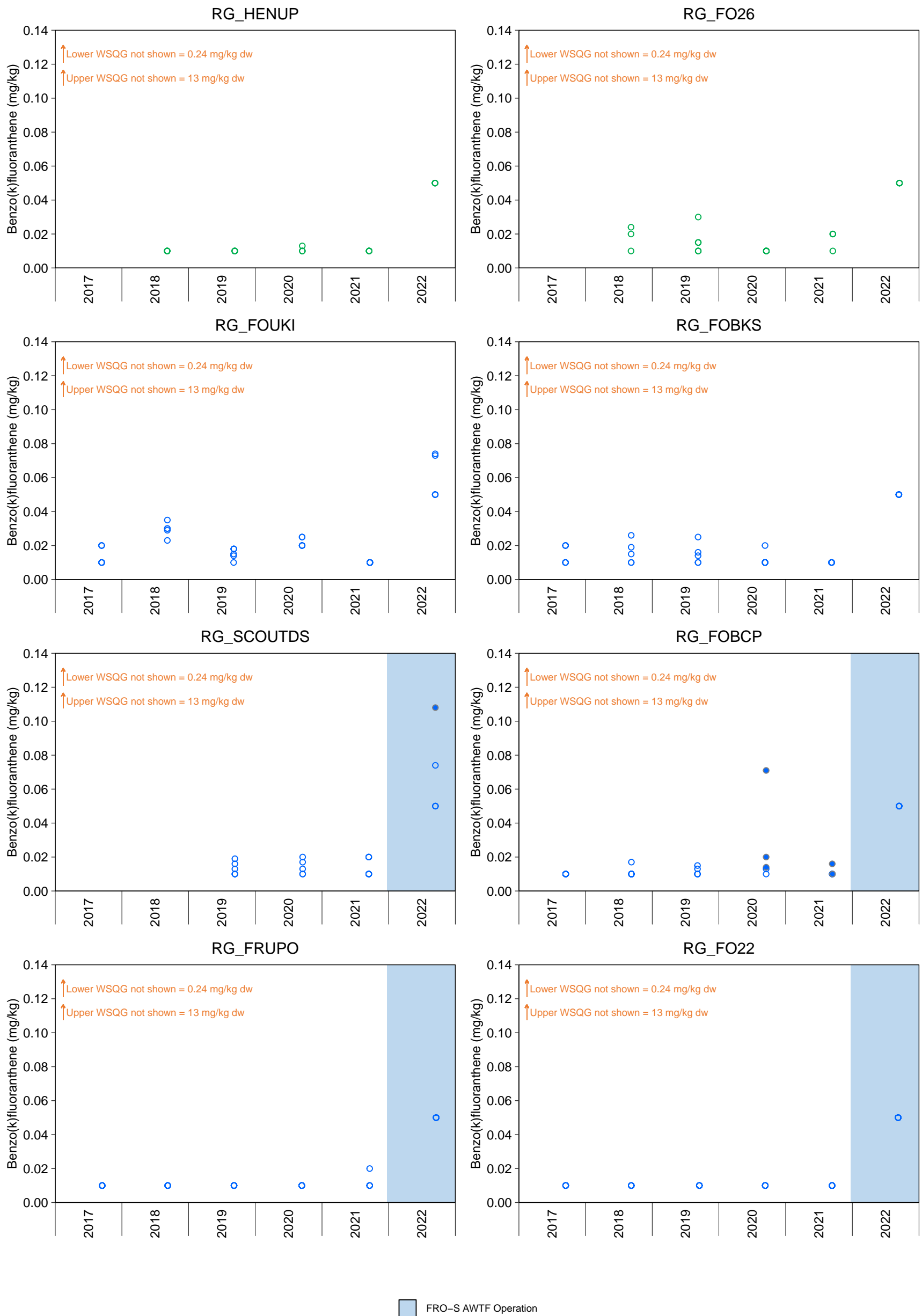


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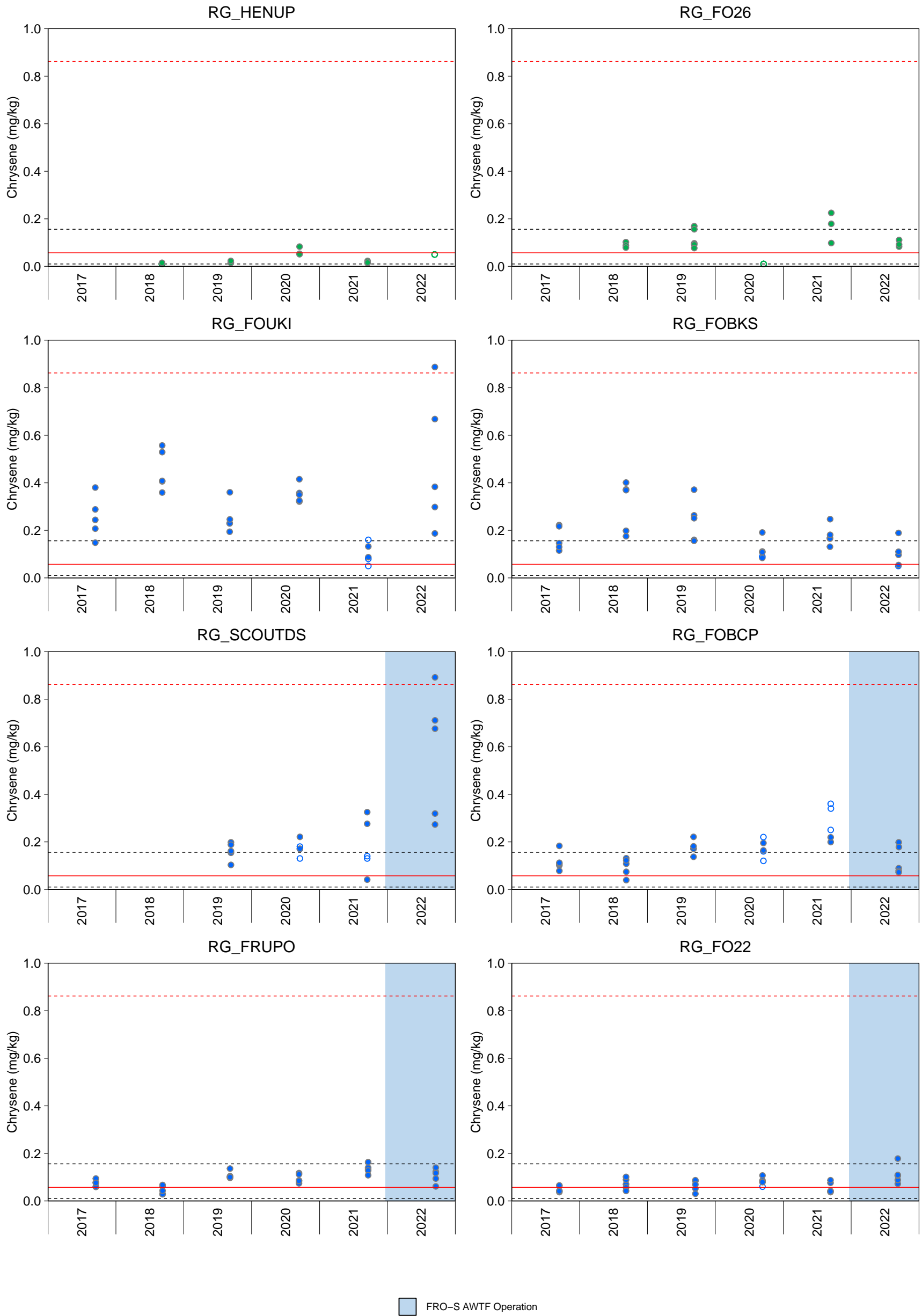


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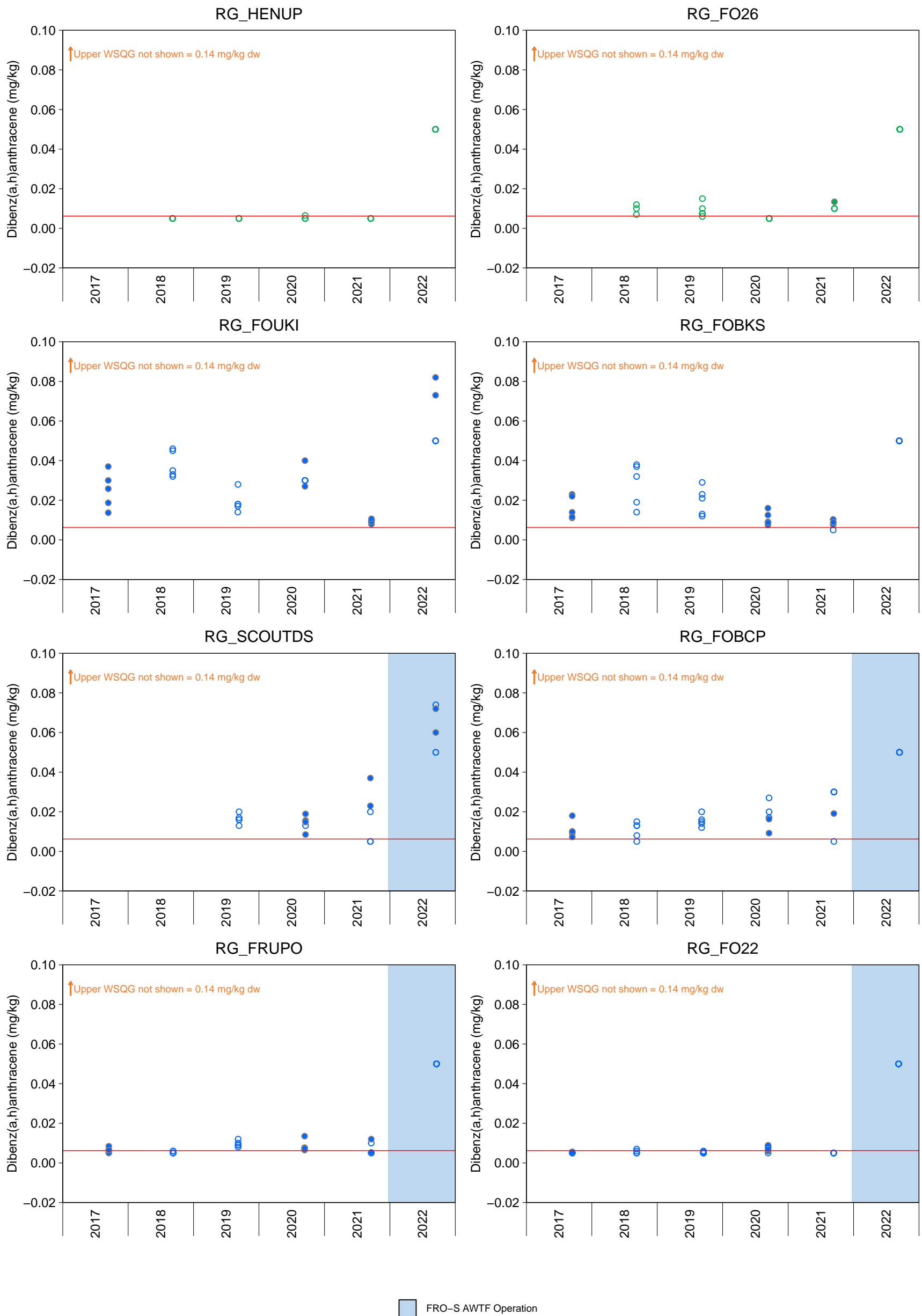


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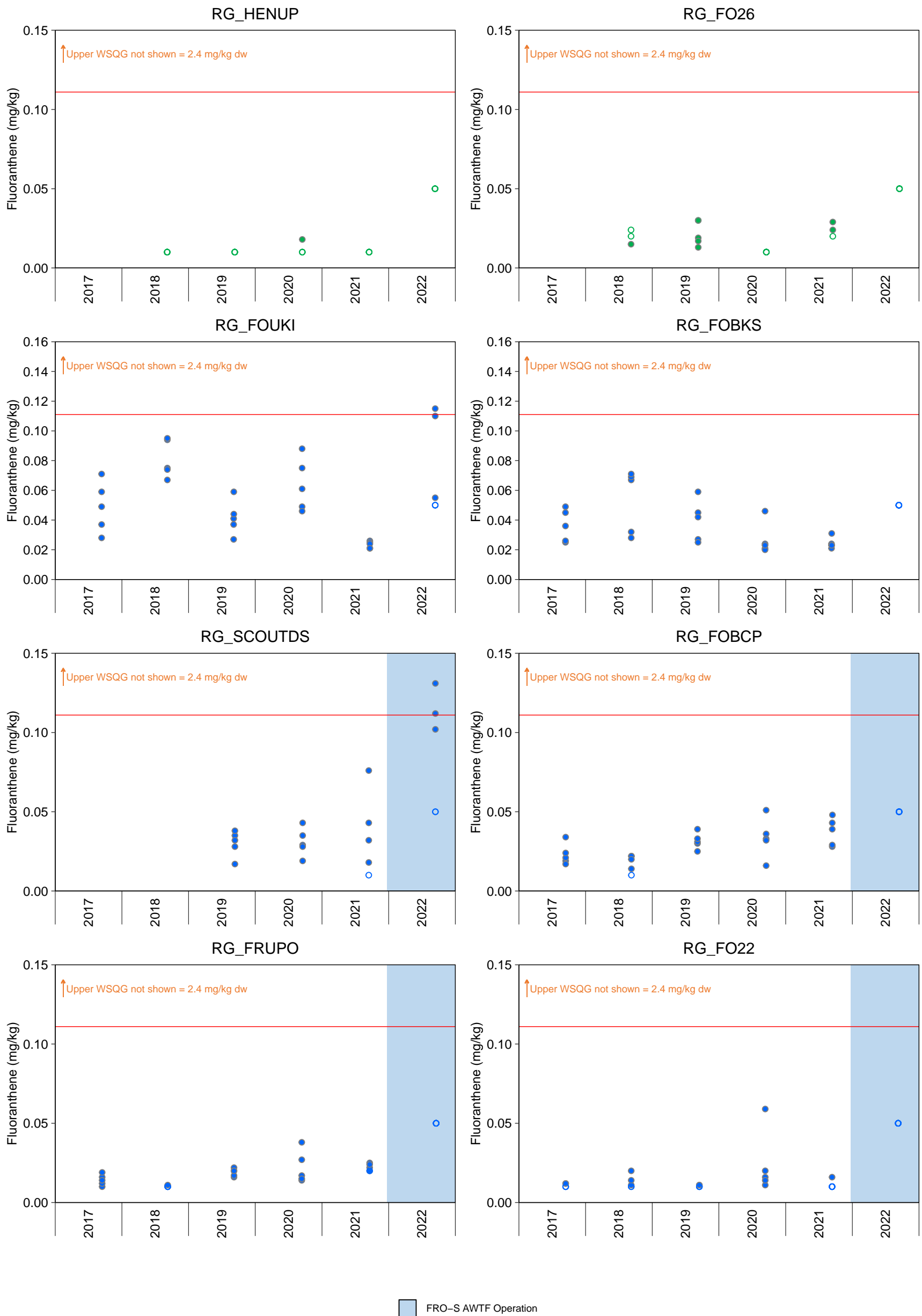


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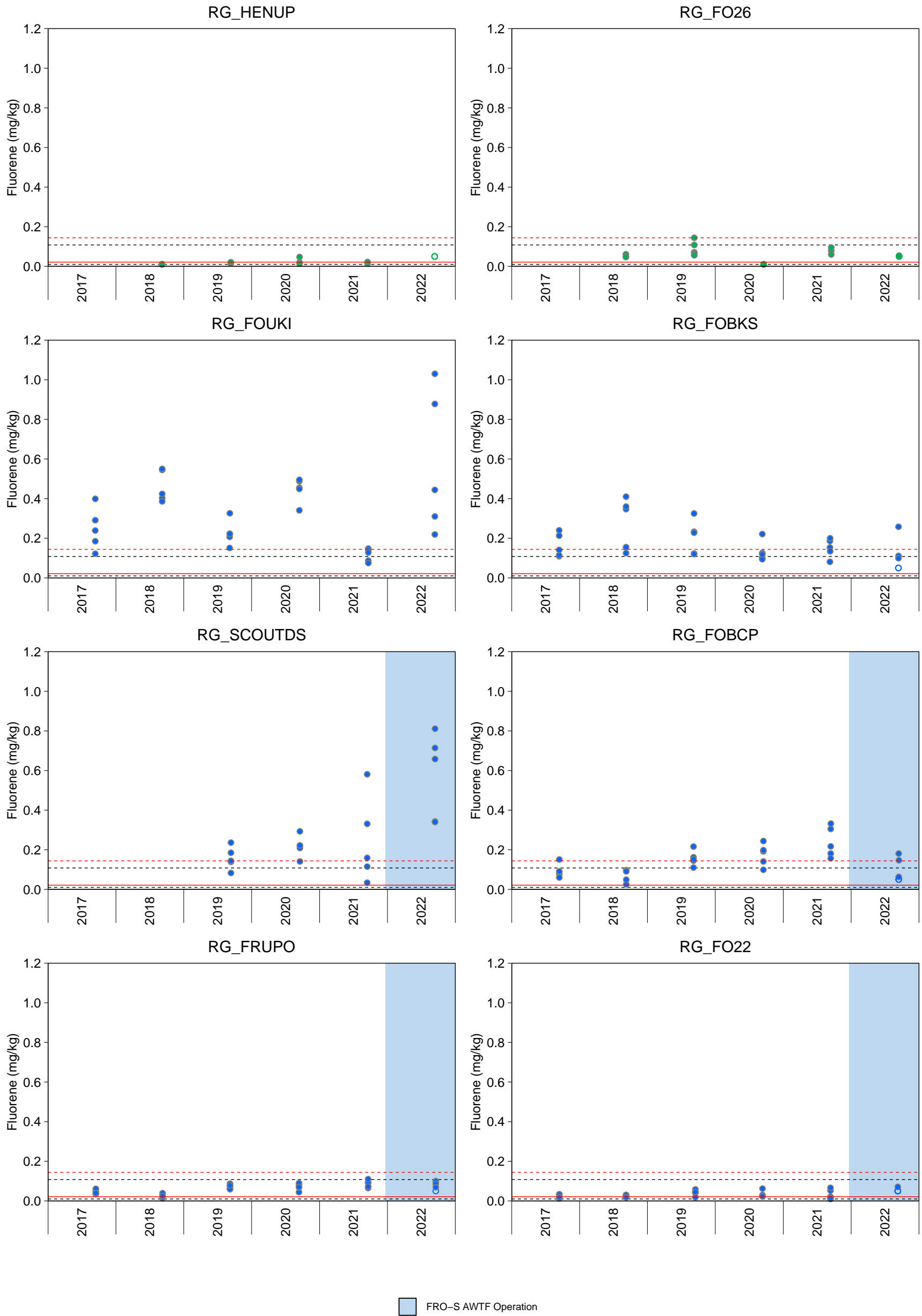


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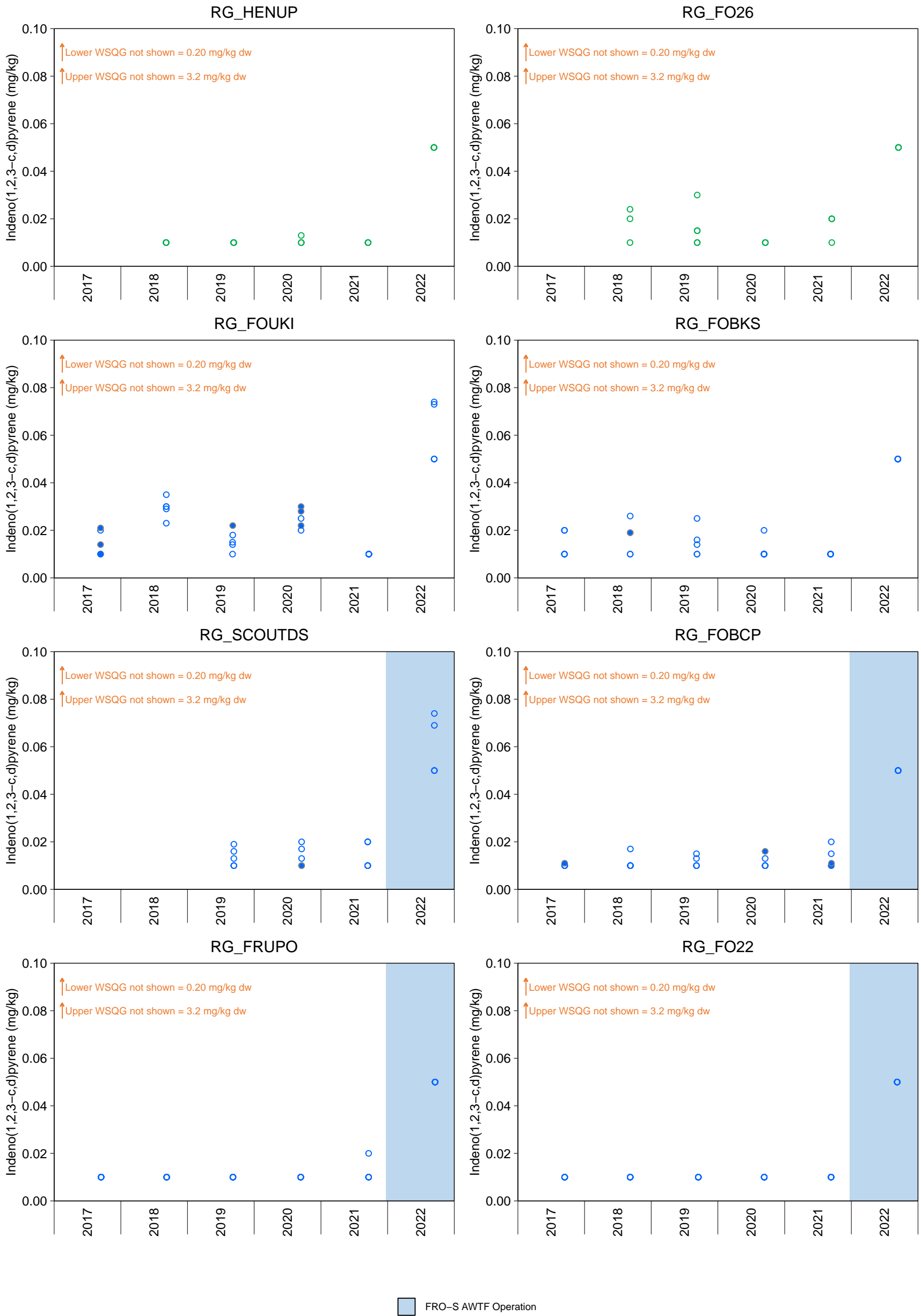


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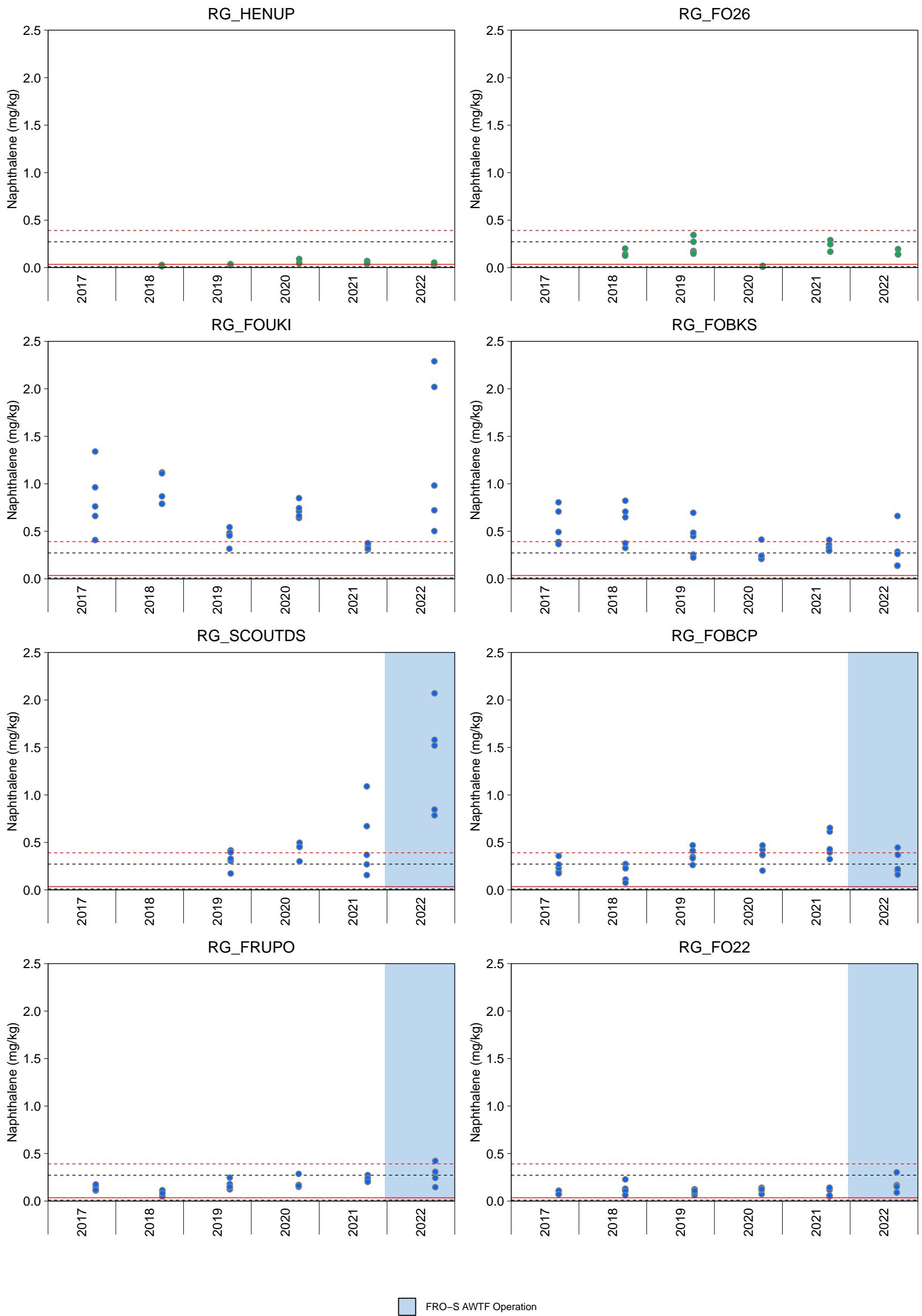


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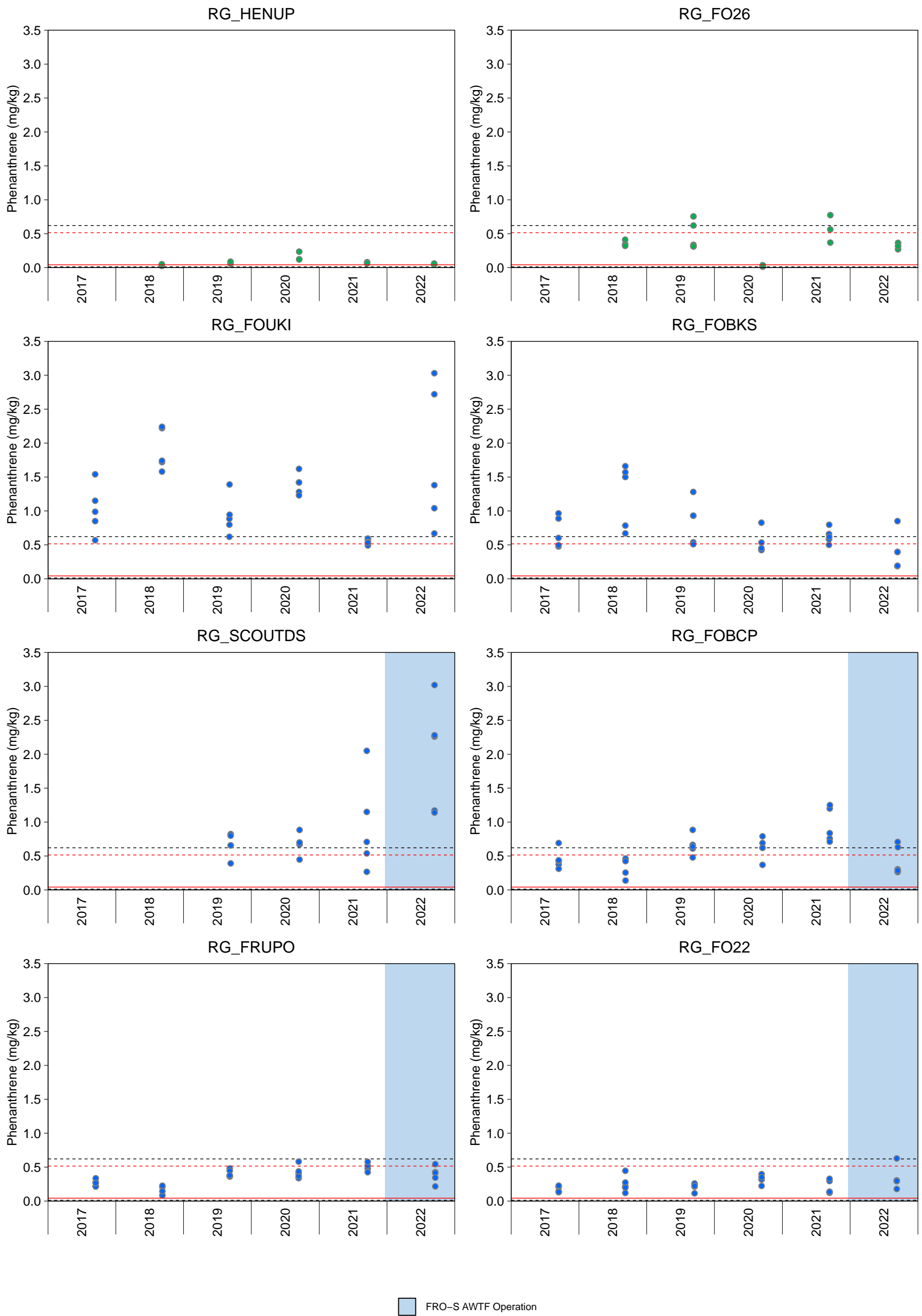


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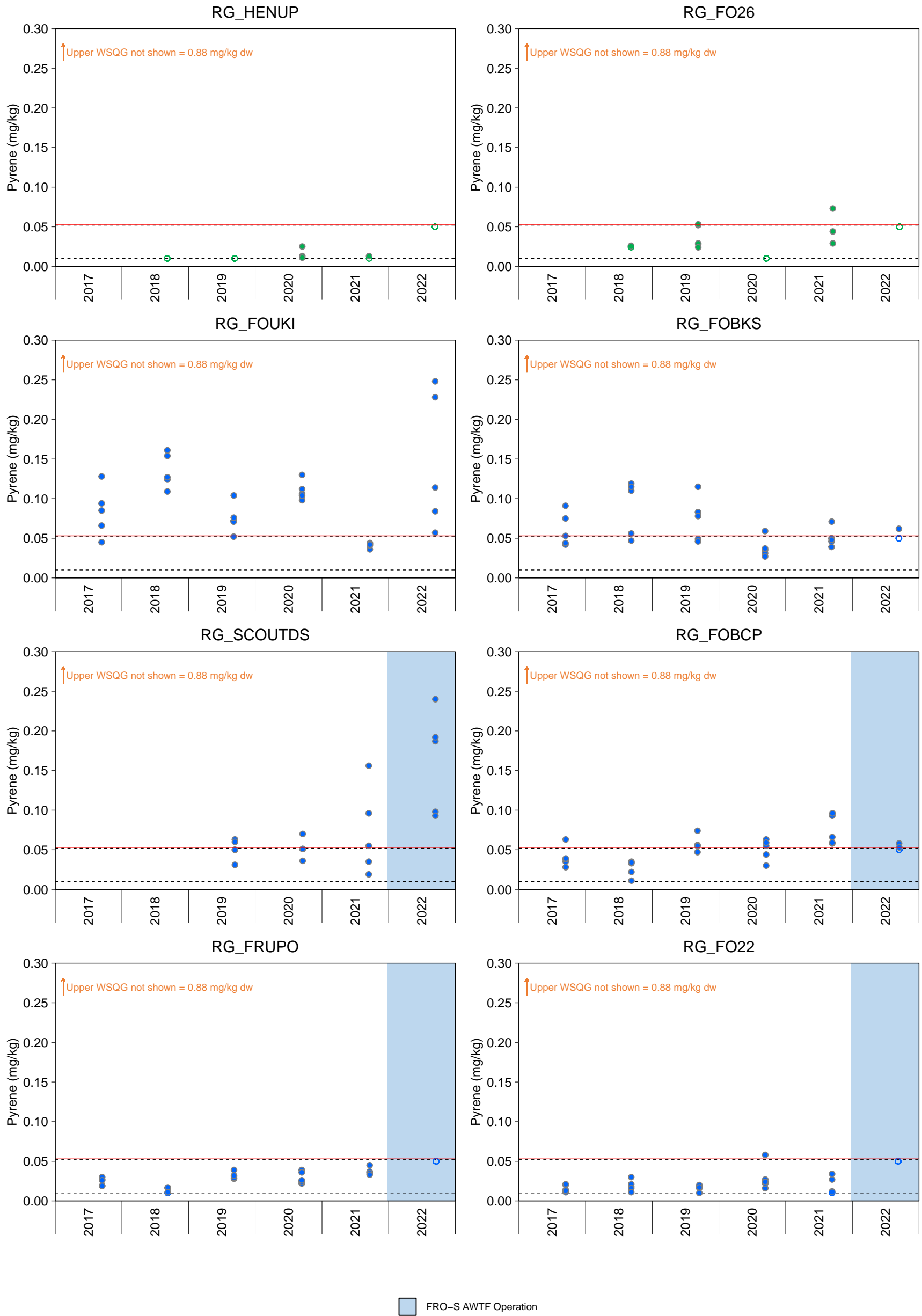


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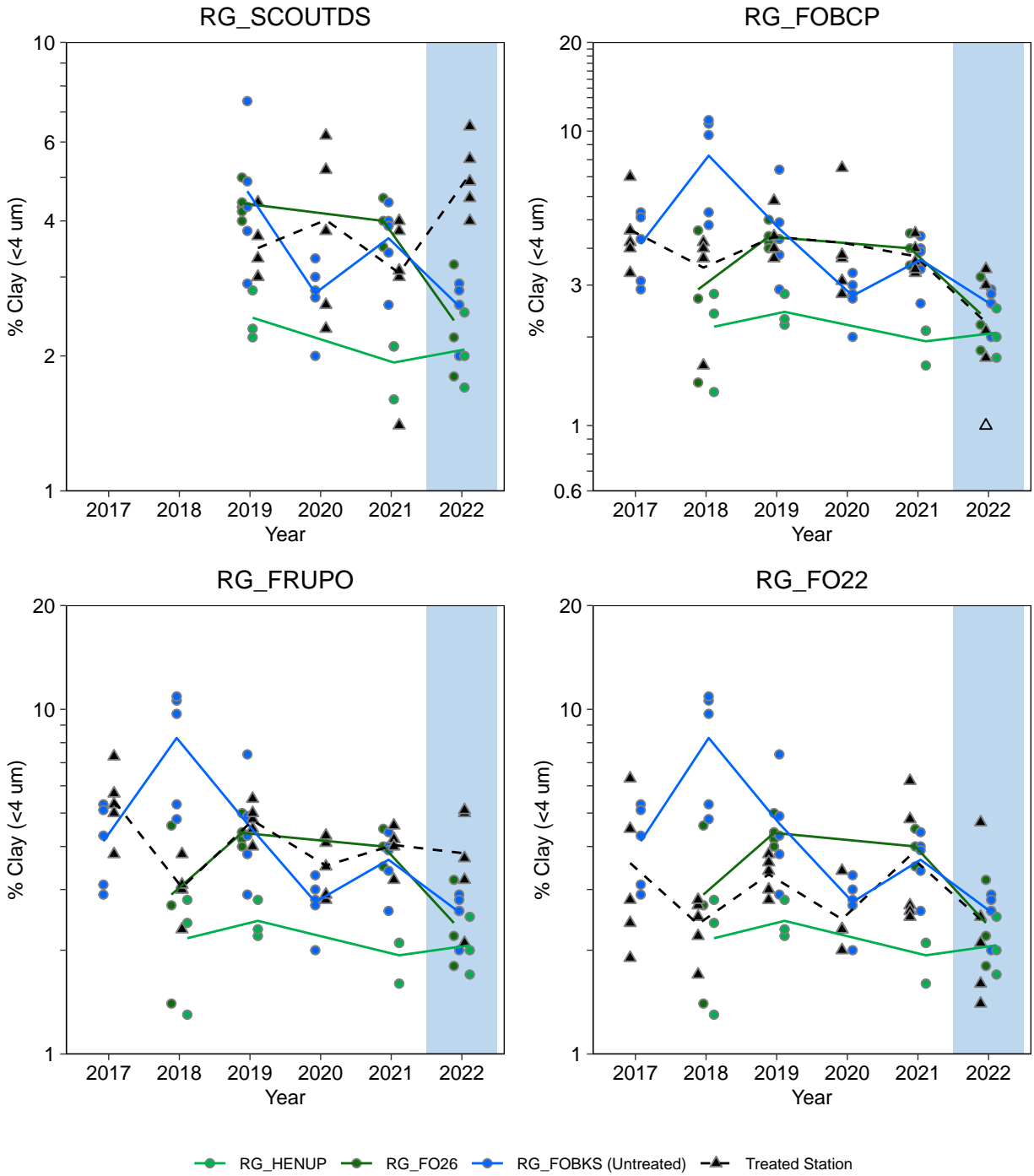


Figure F.3: Comparison of Sediment Composition, Metal and PAH Concentrations Upstream (RG_FOBKS) and Downstream of Treatment

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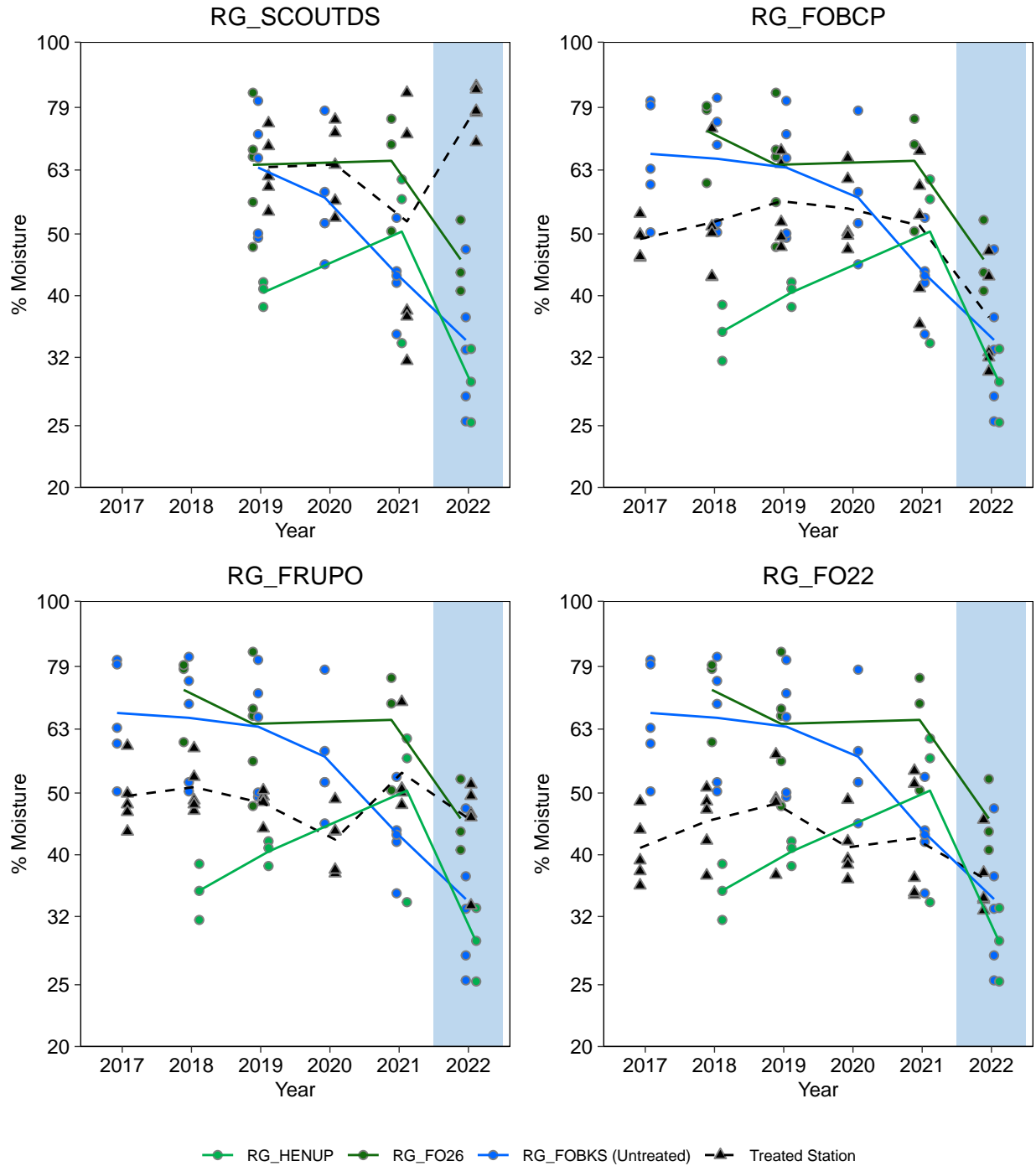


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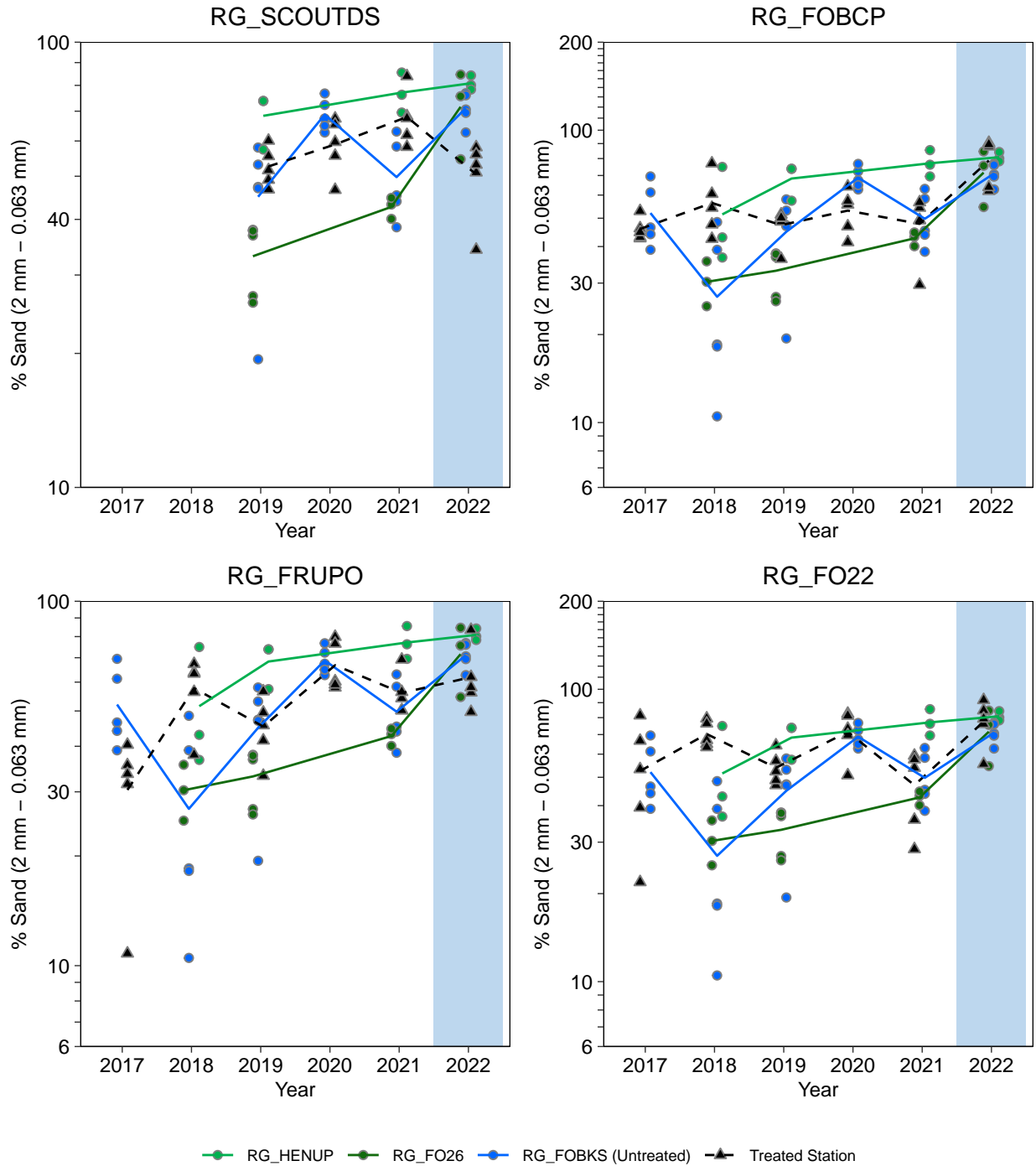


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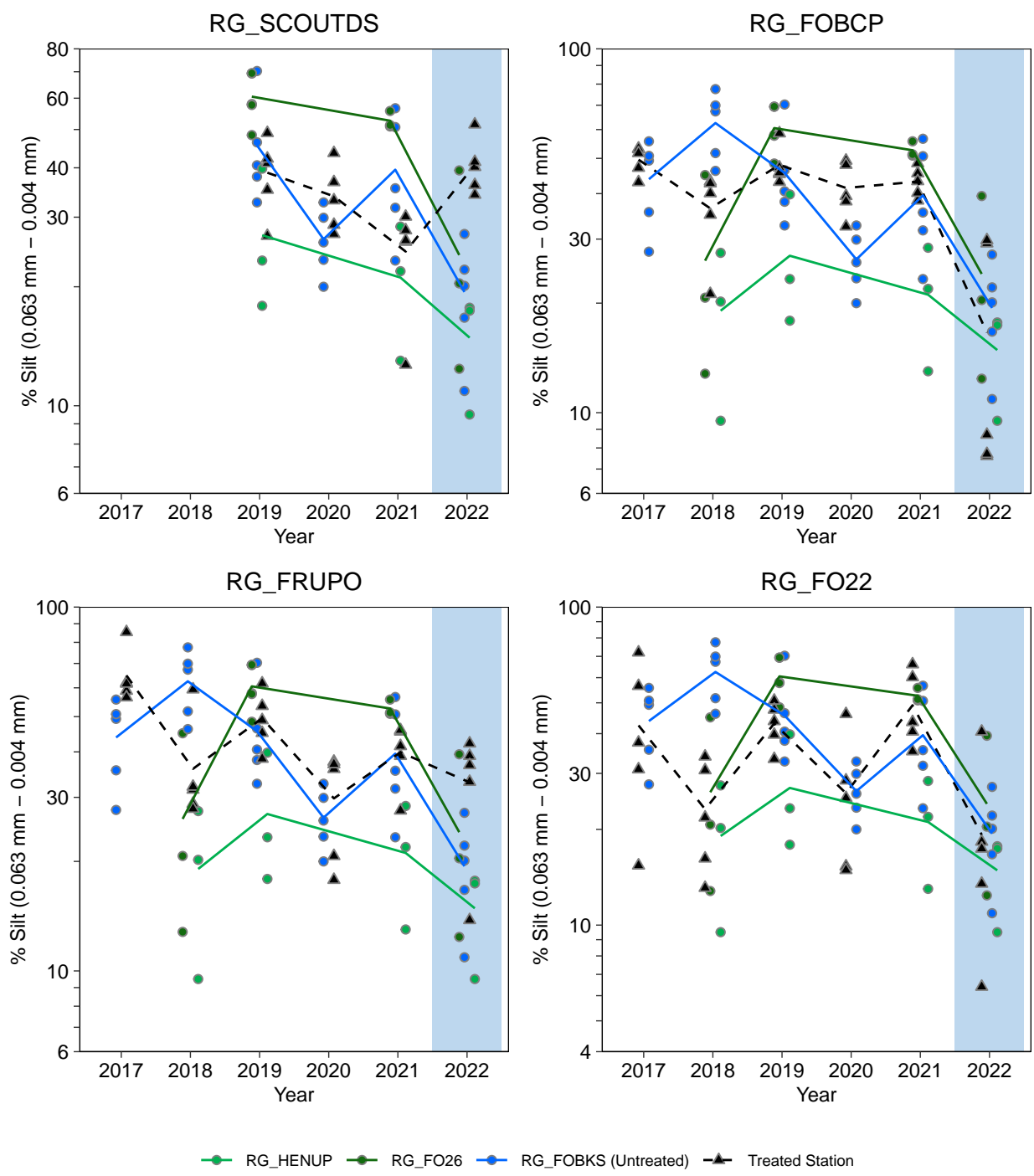


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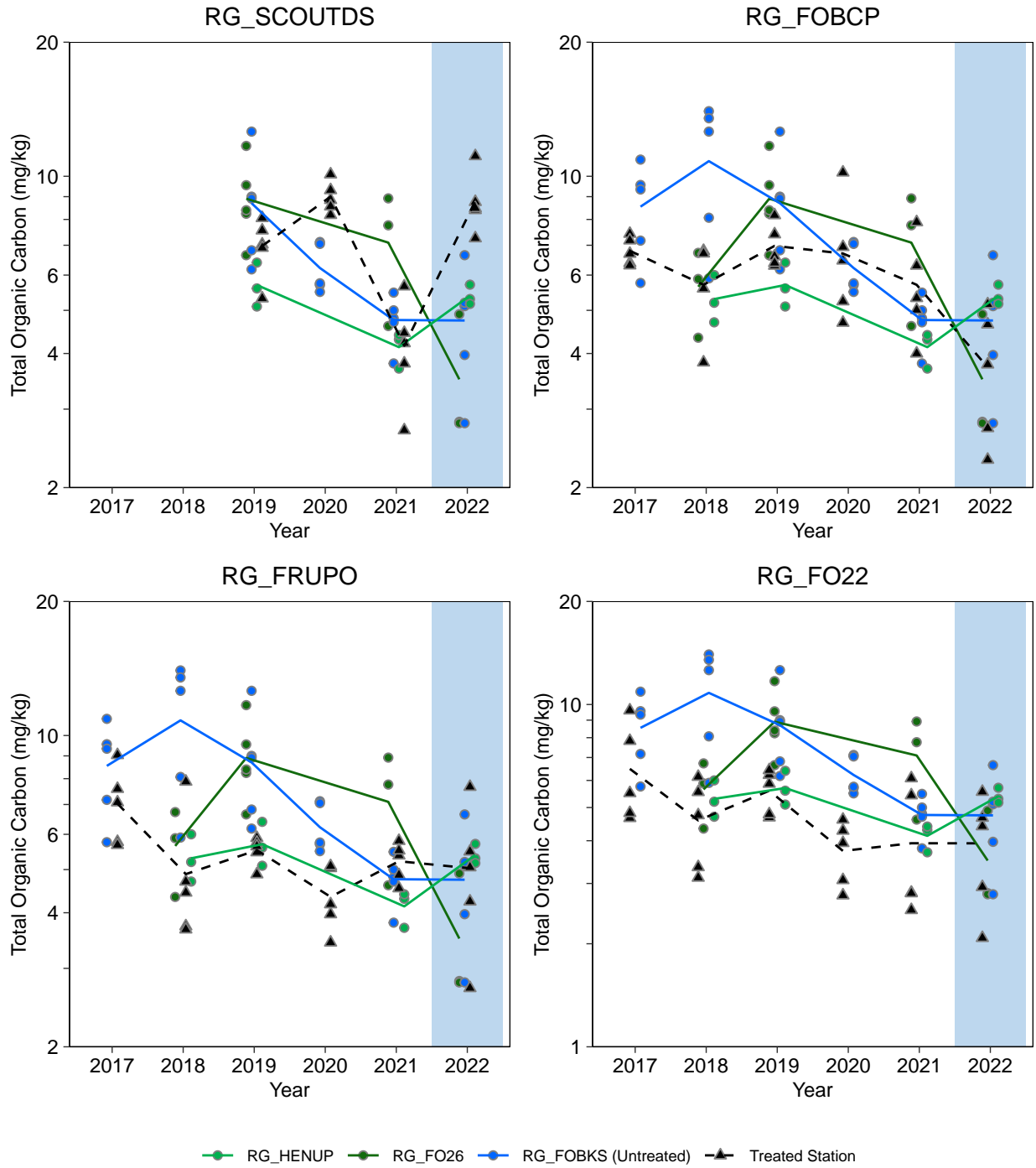


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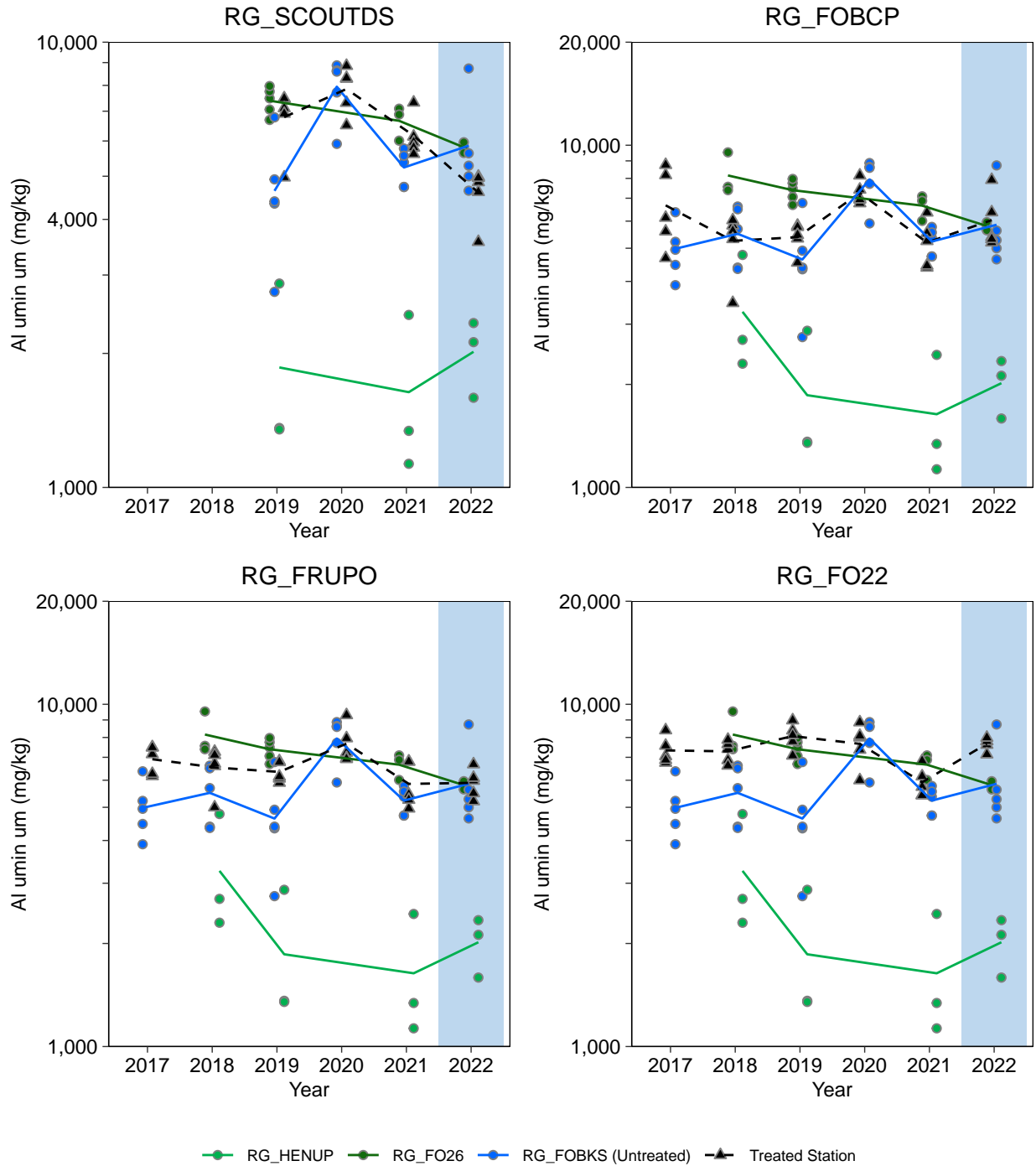


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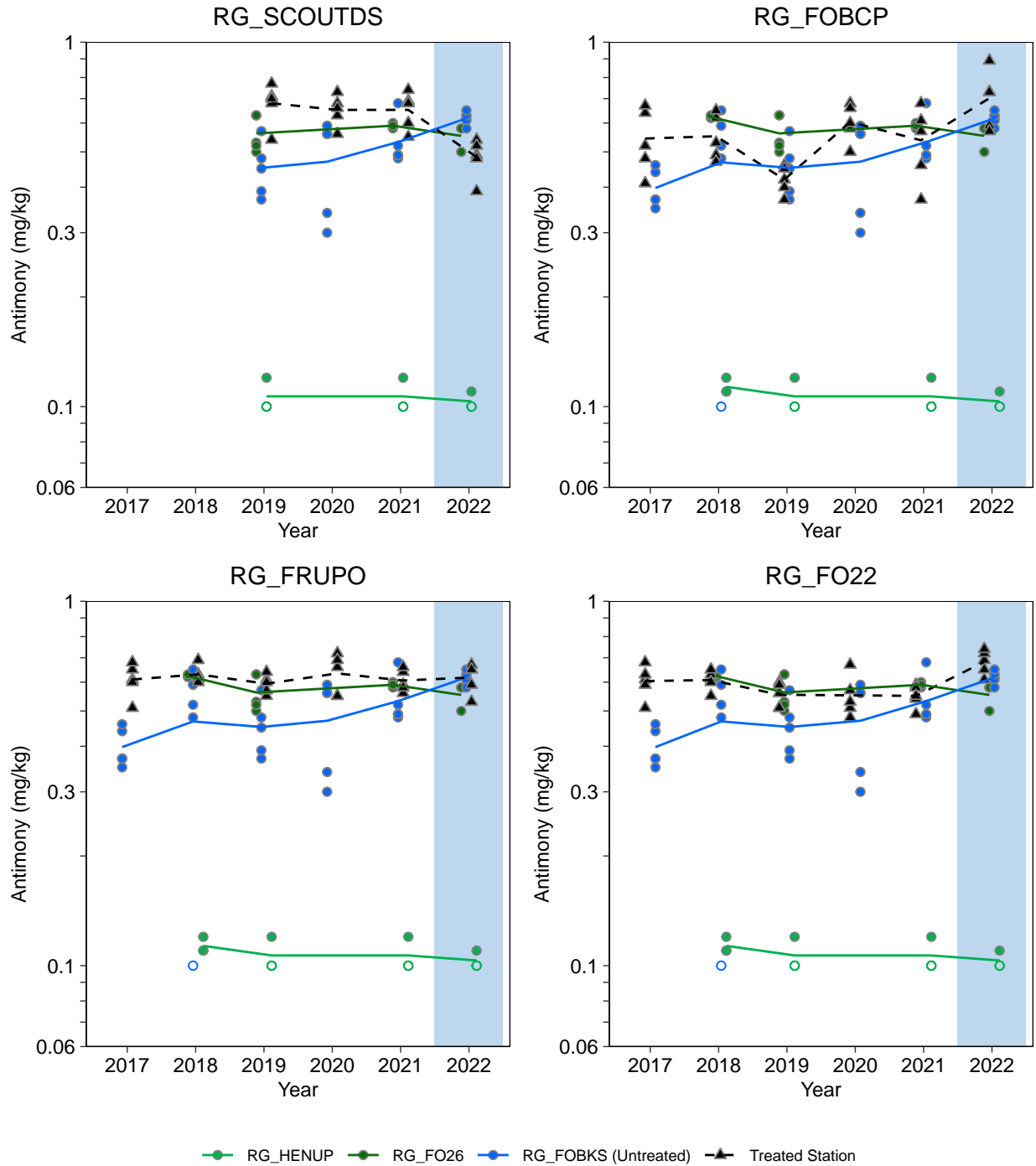


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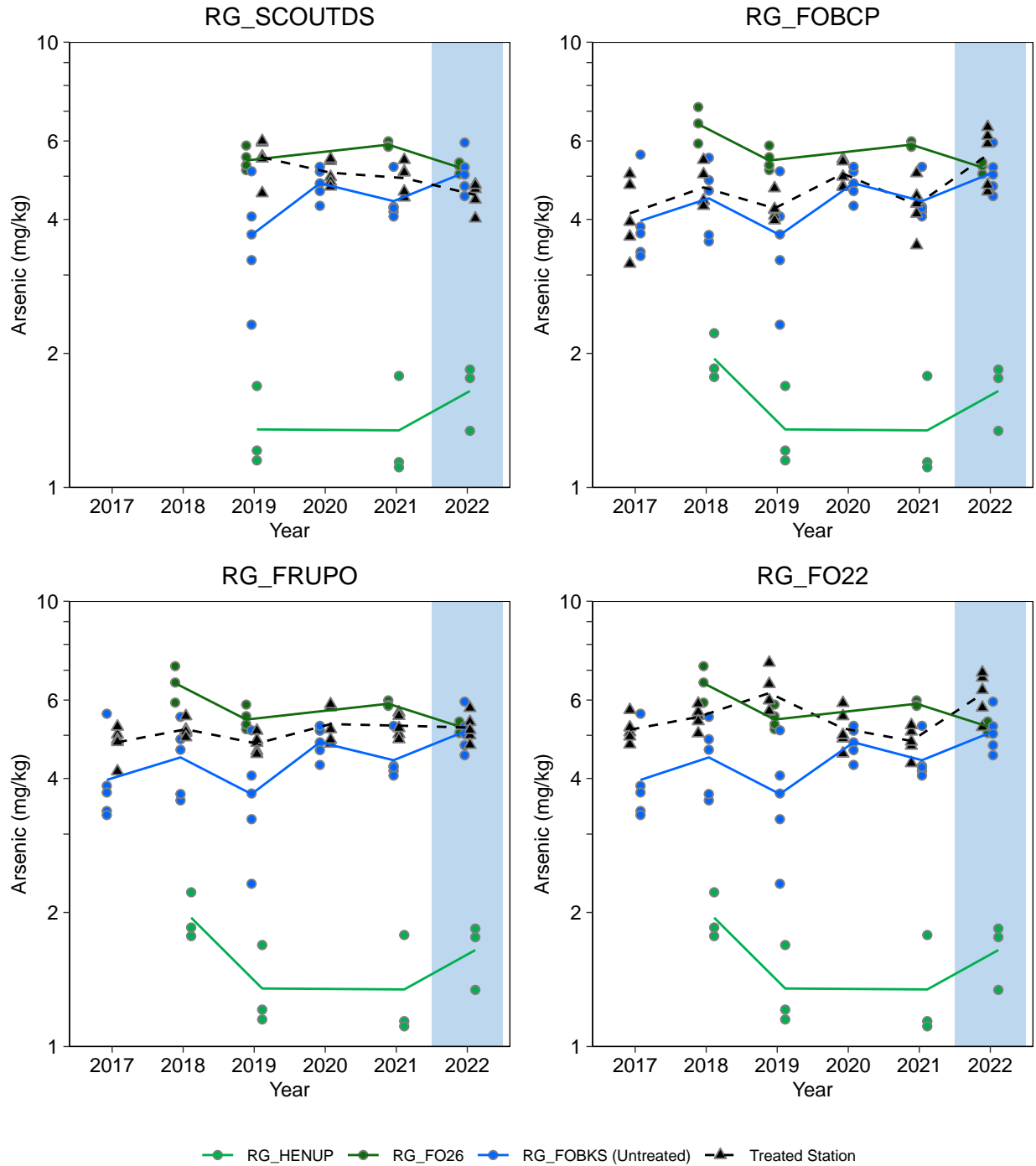


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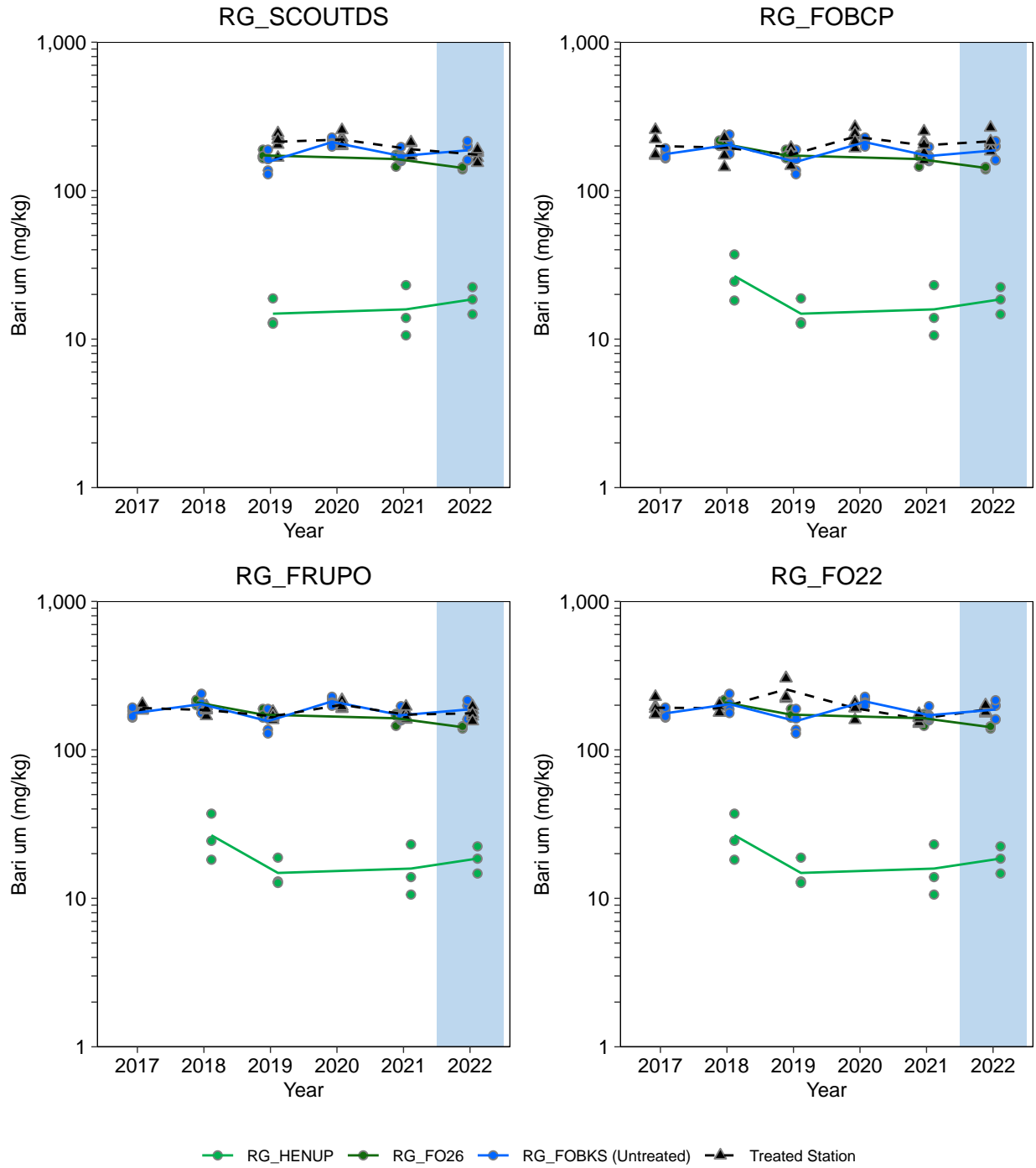


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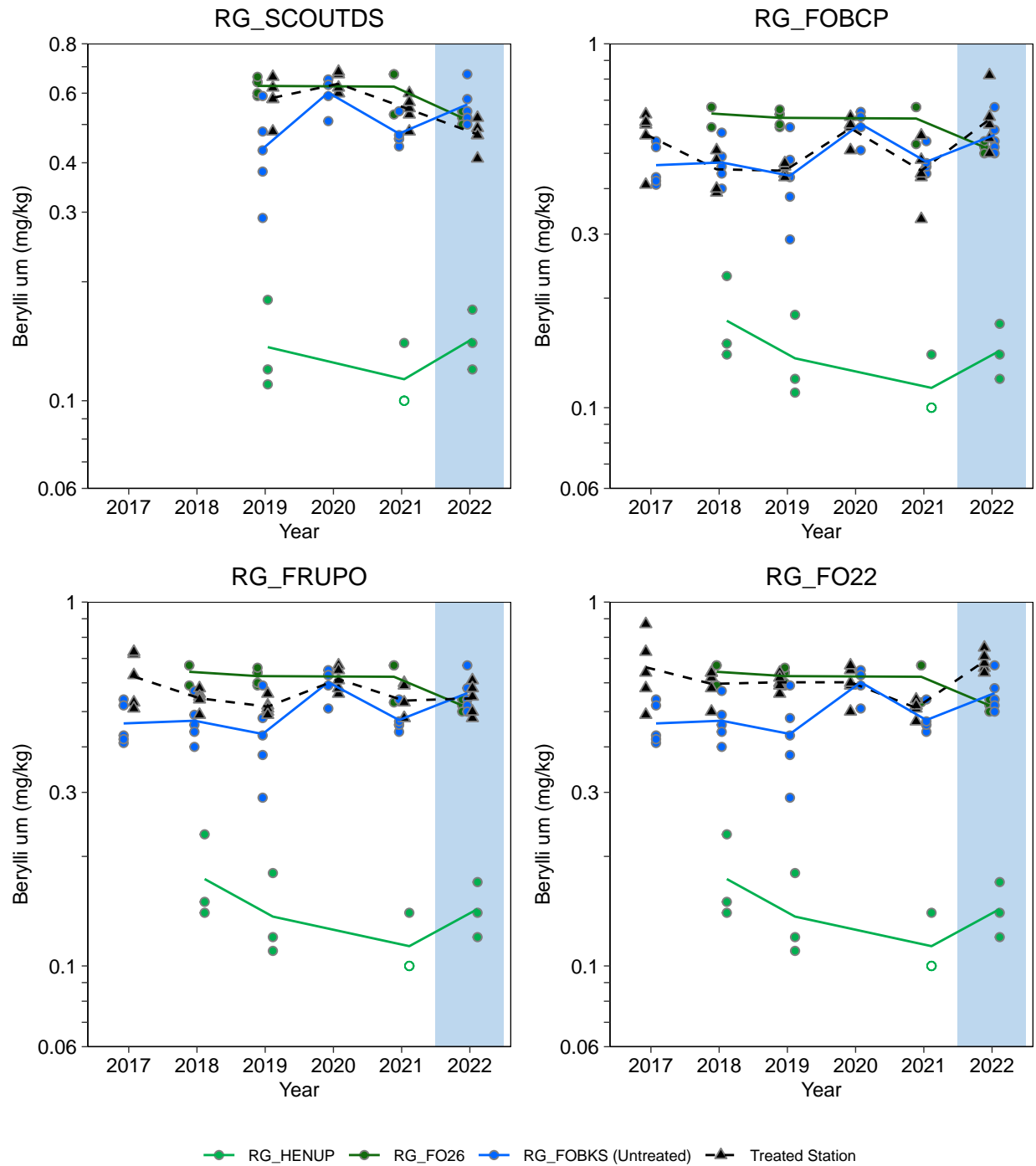


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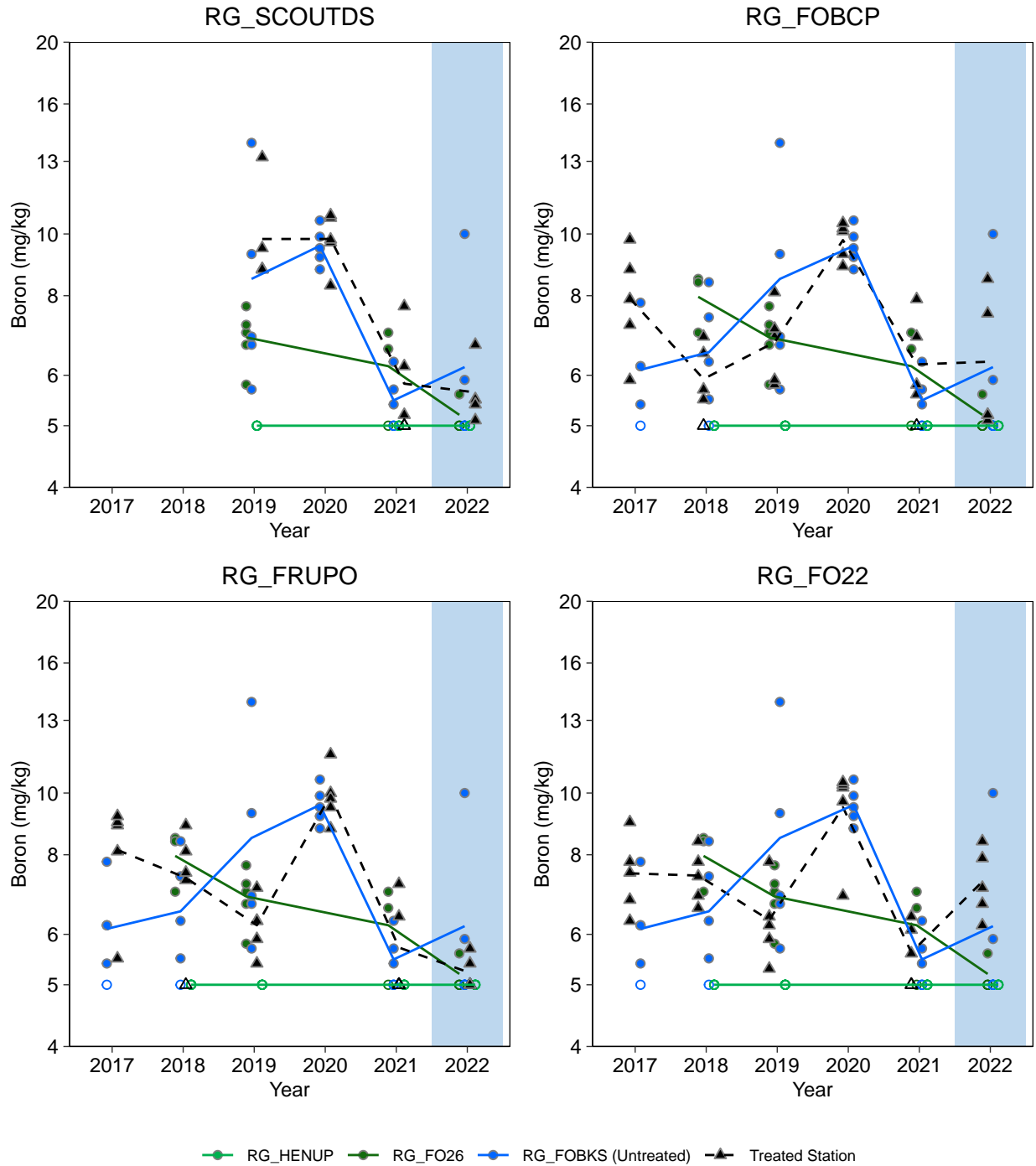


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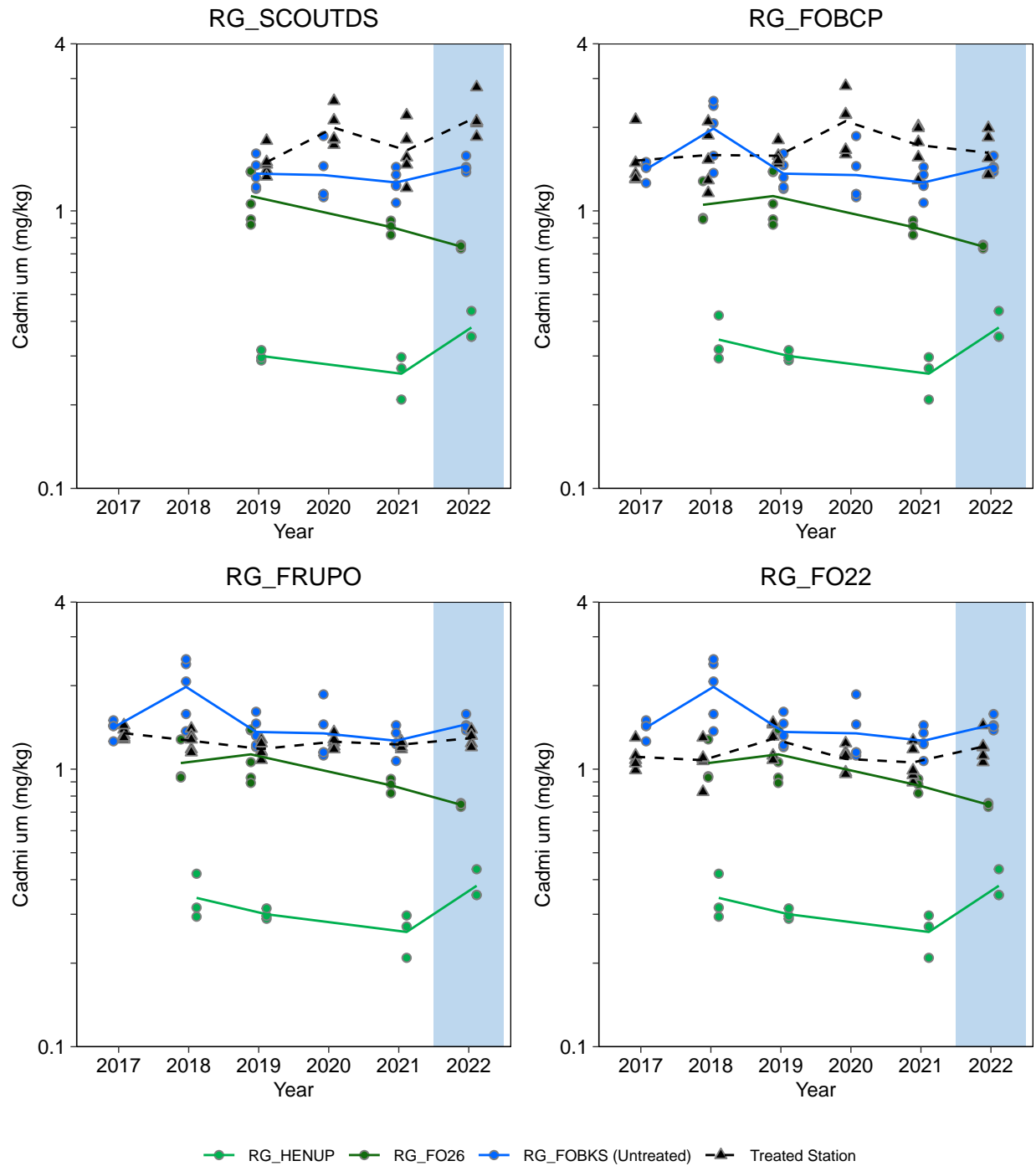


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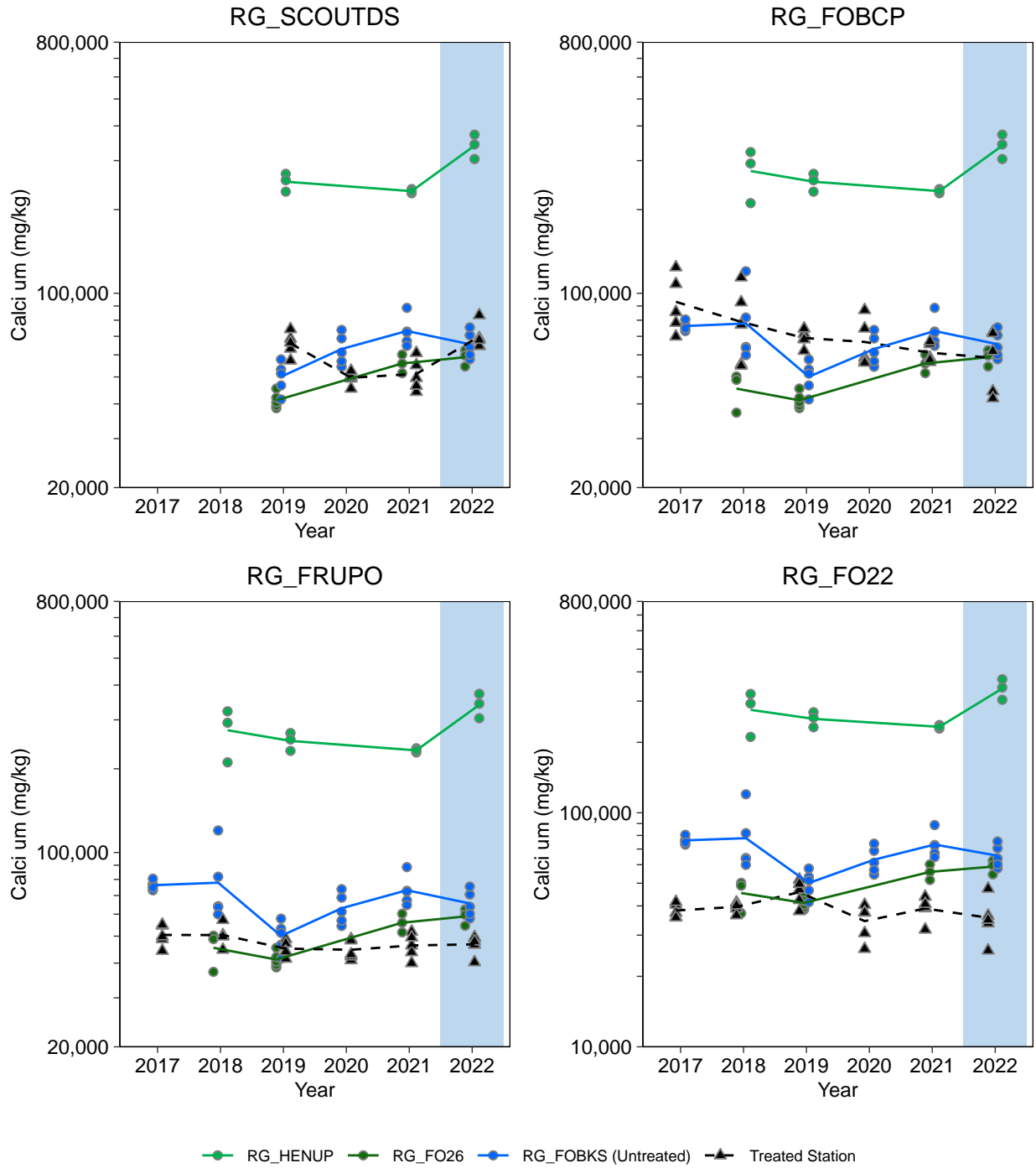


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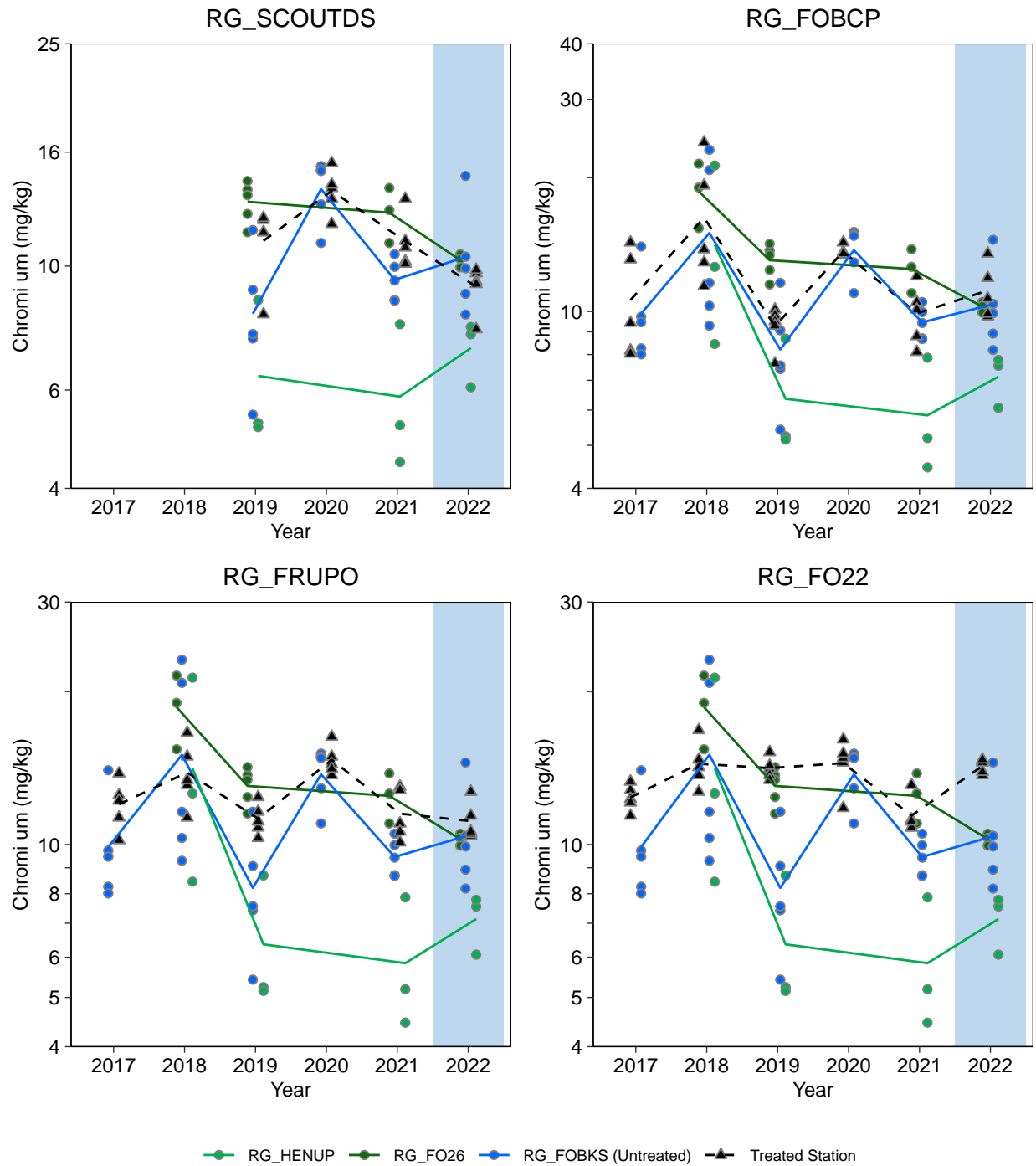


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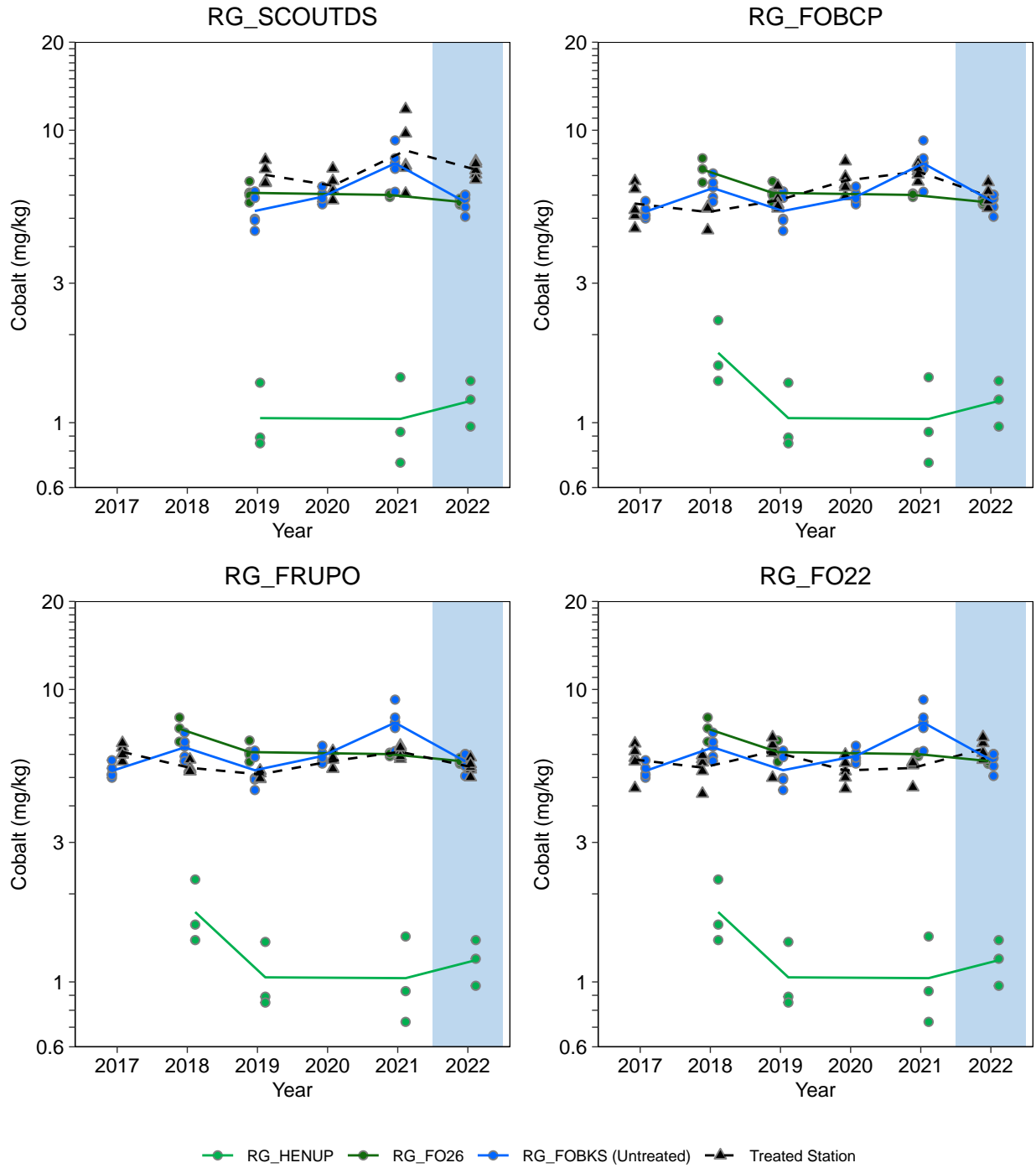


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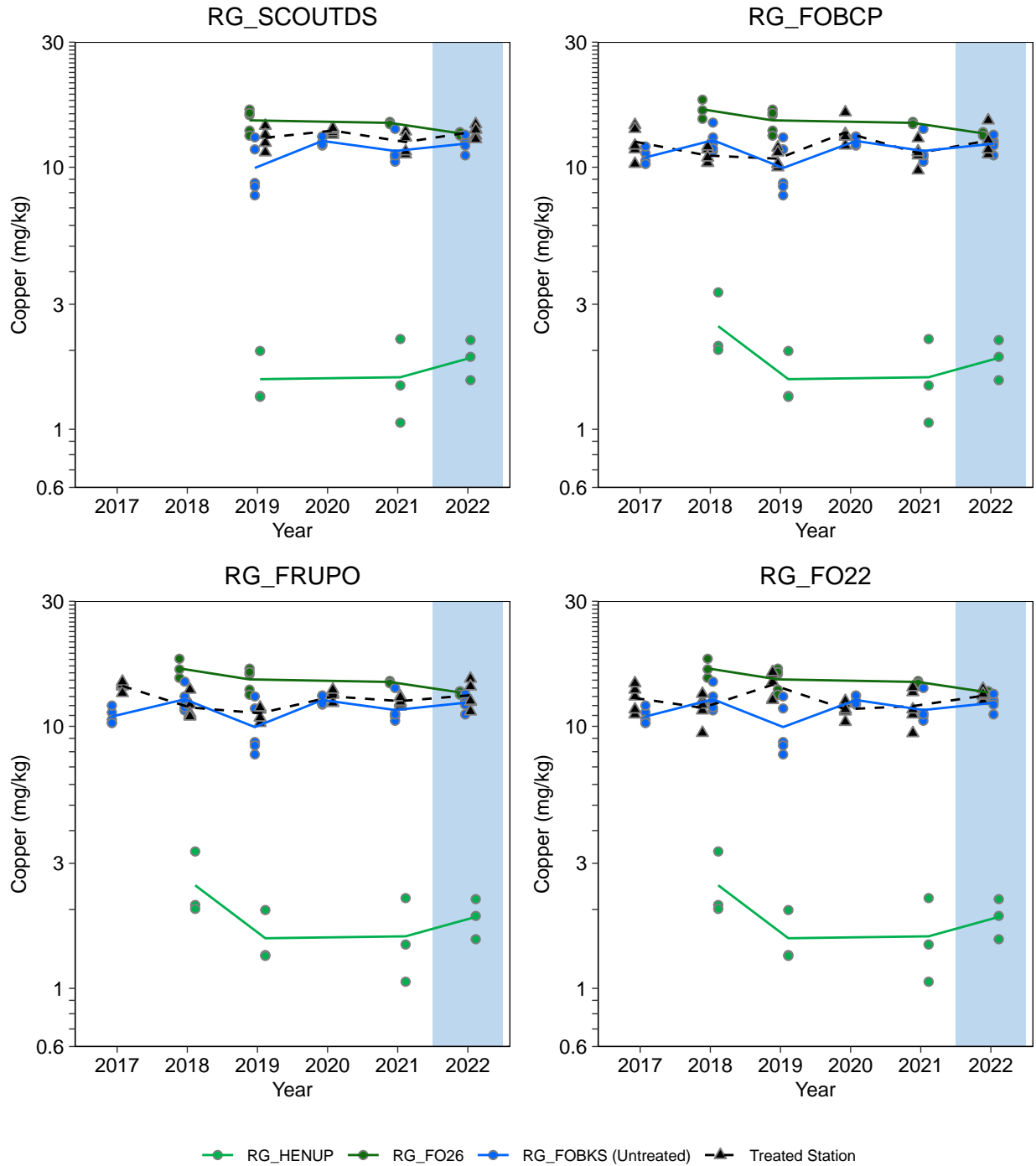


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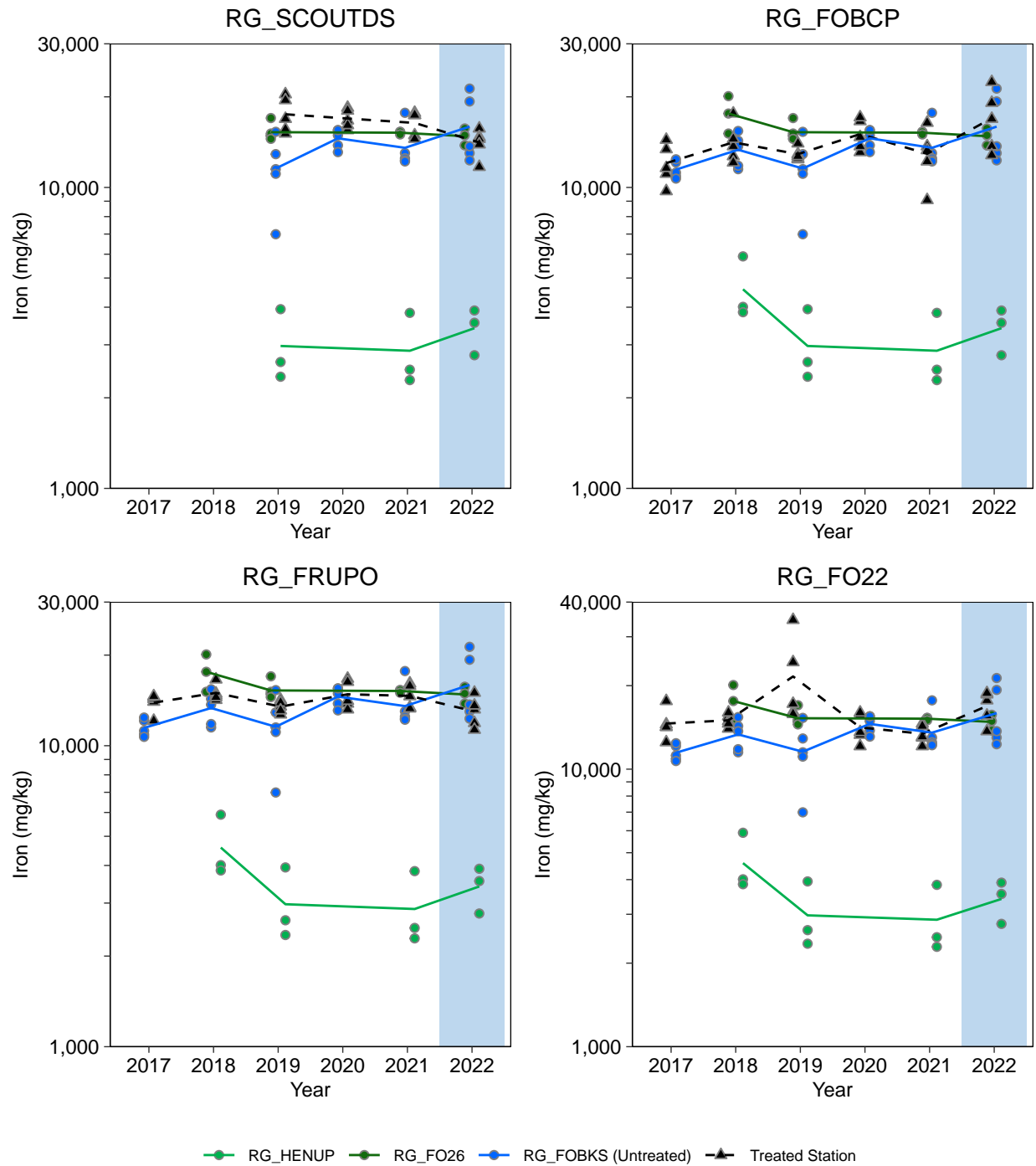


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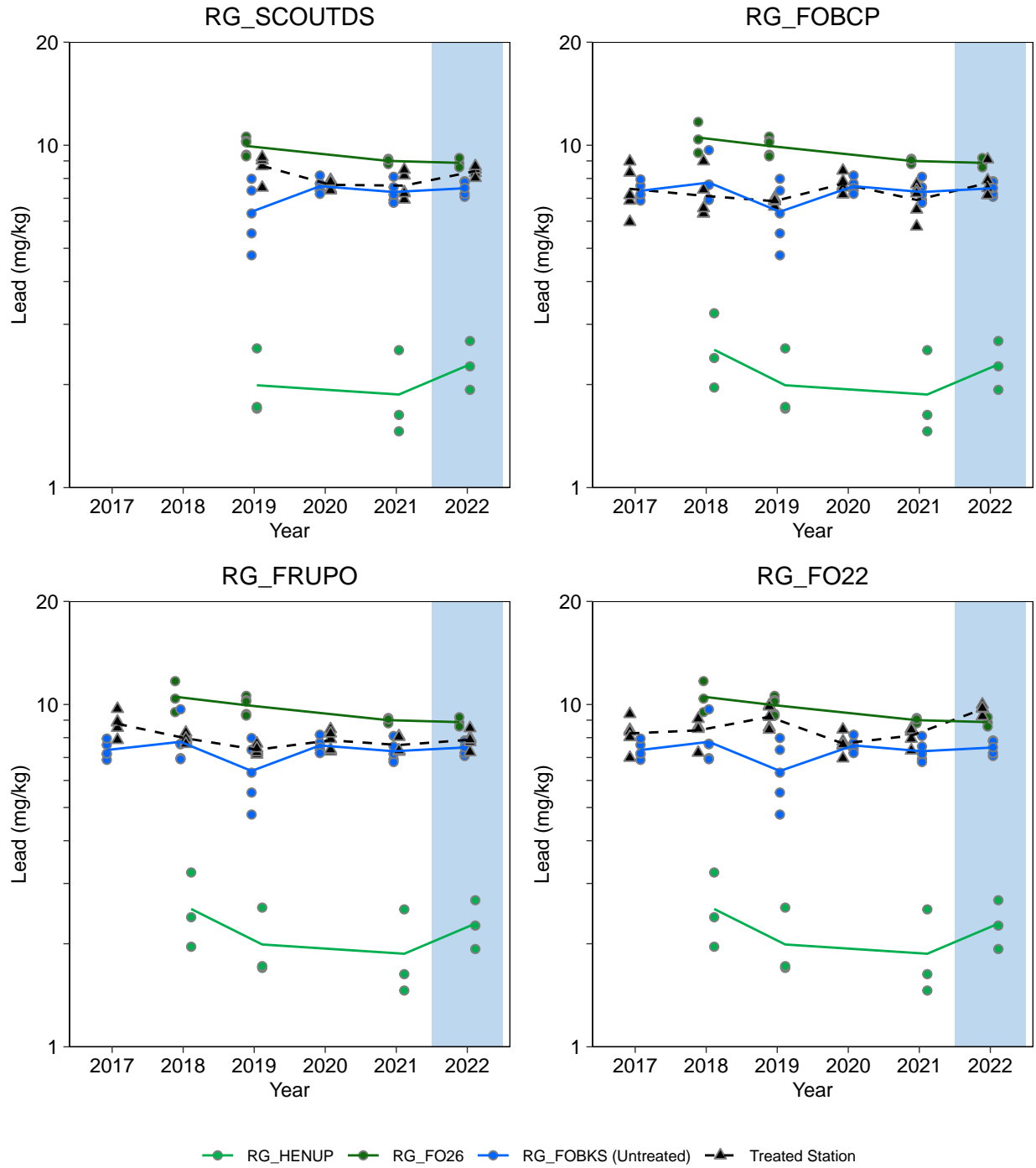


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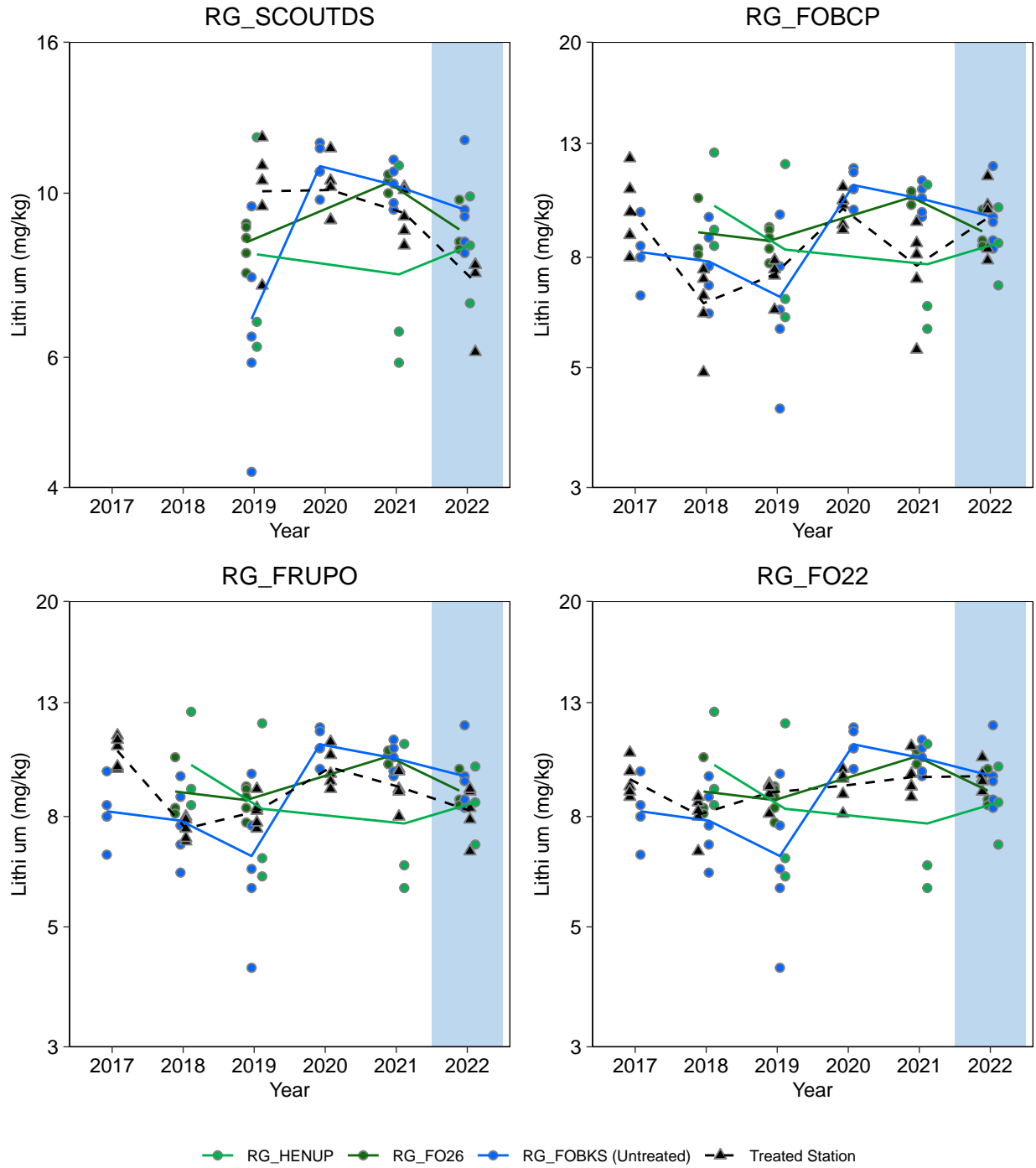


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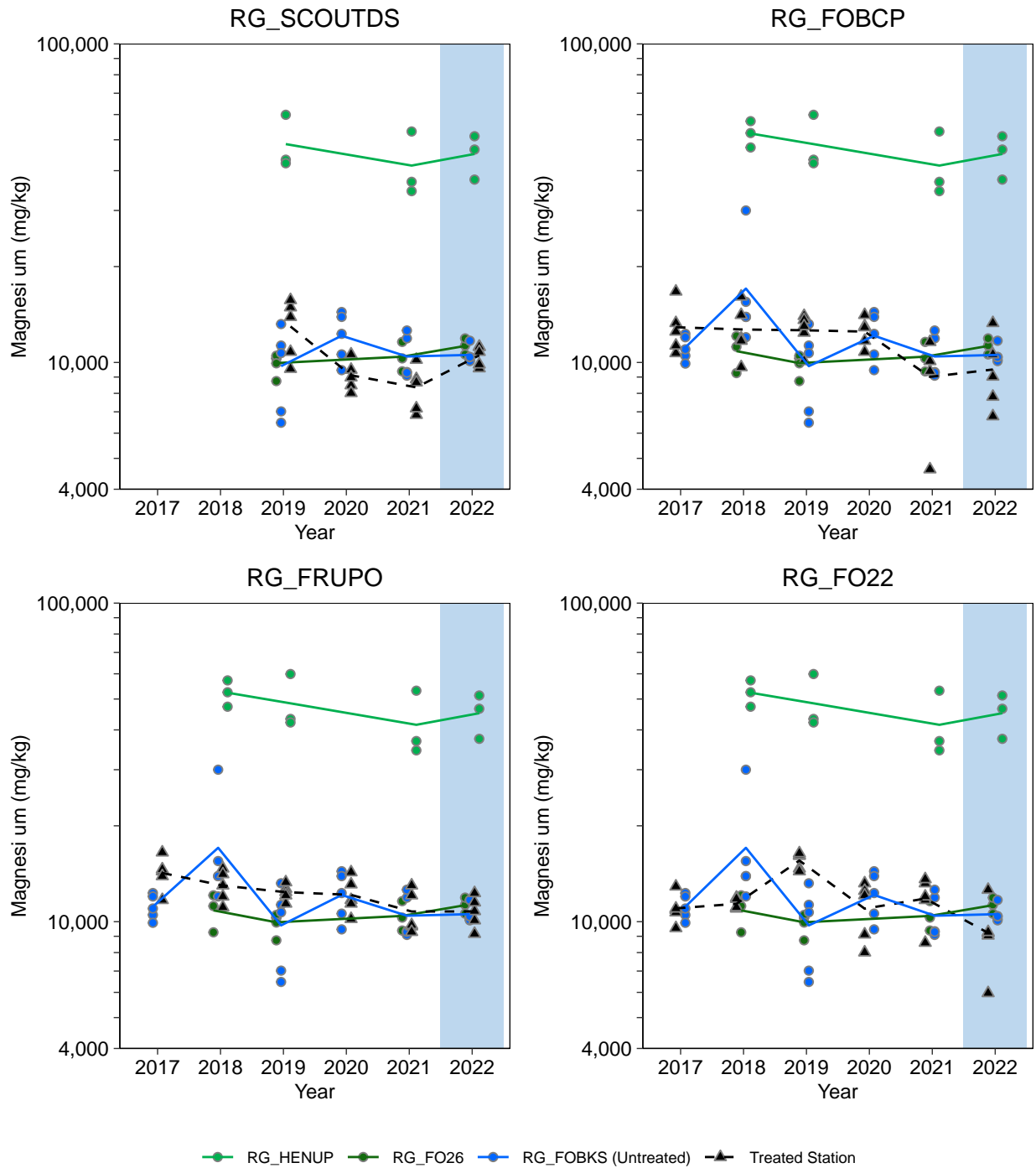


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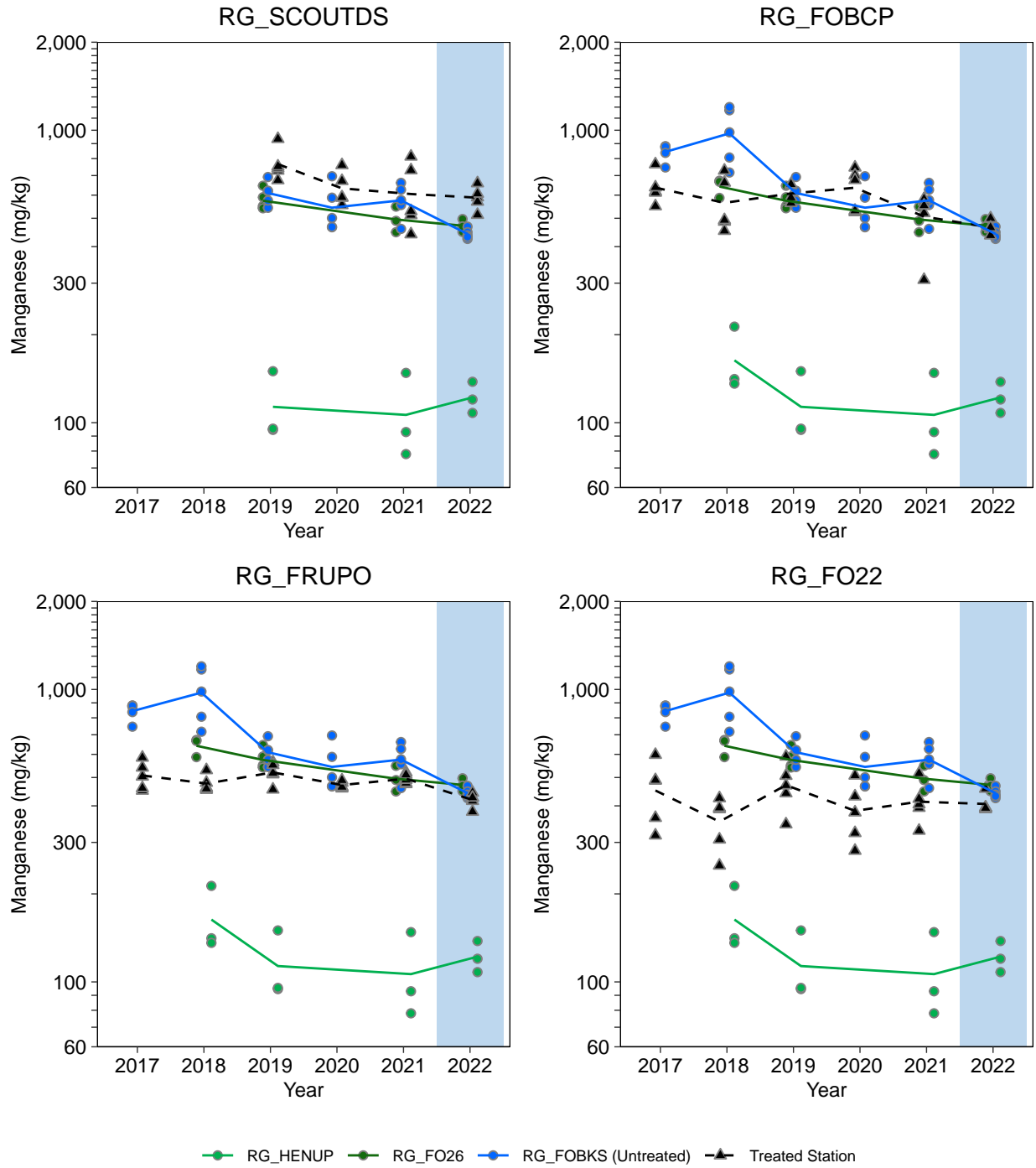


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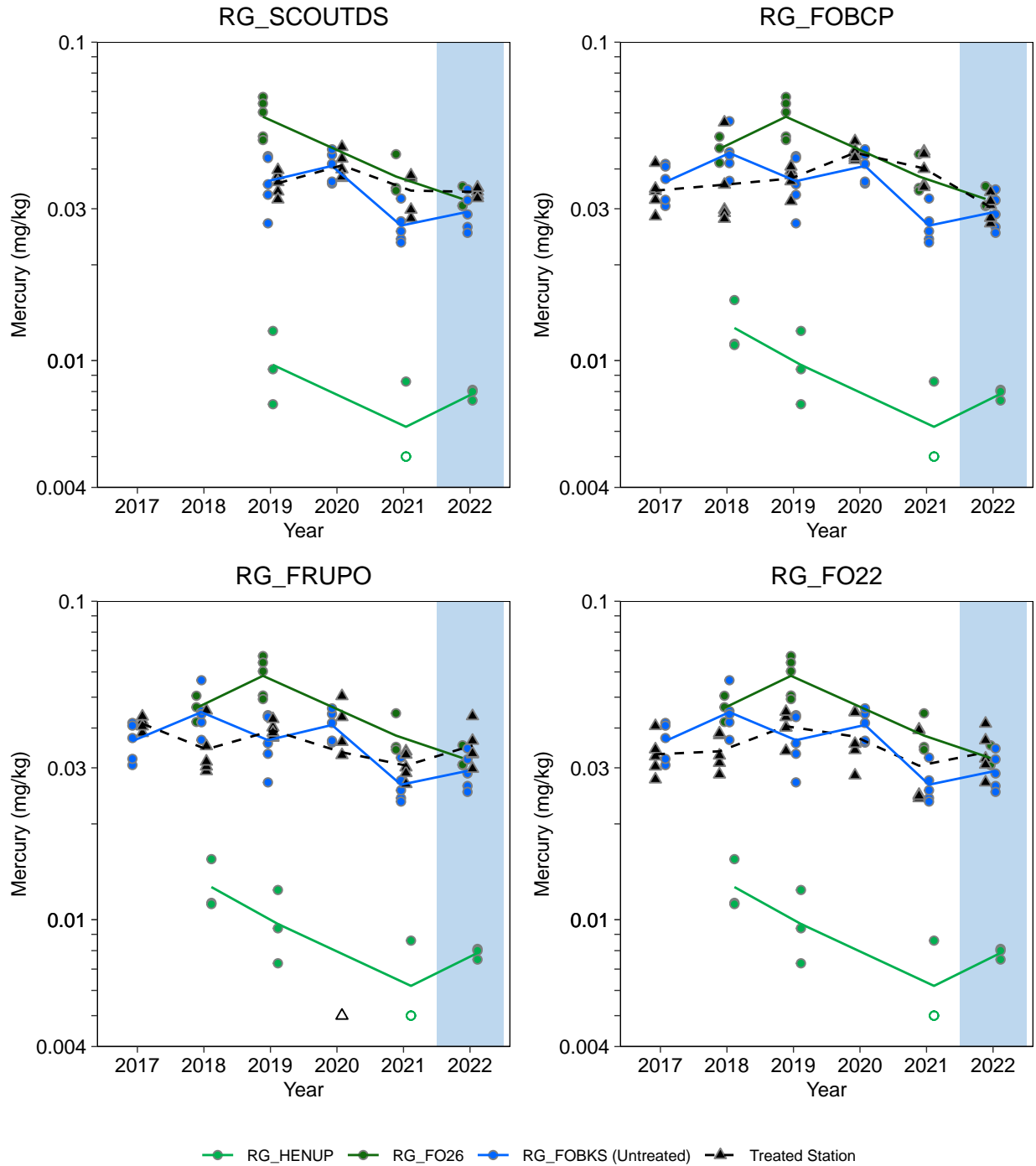


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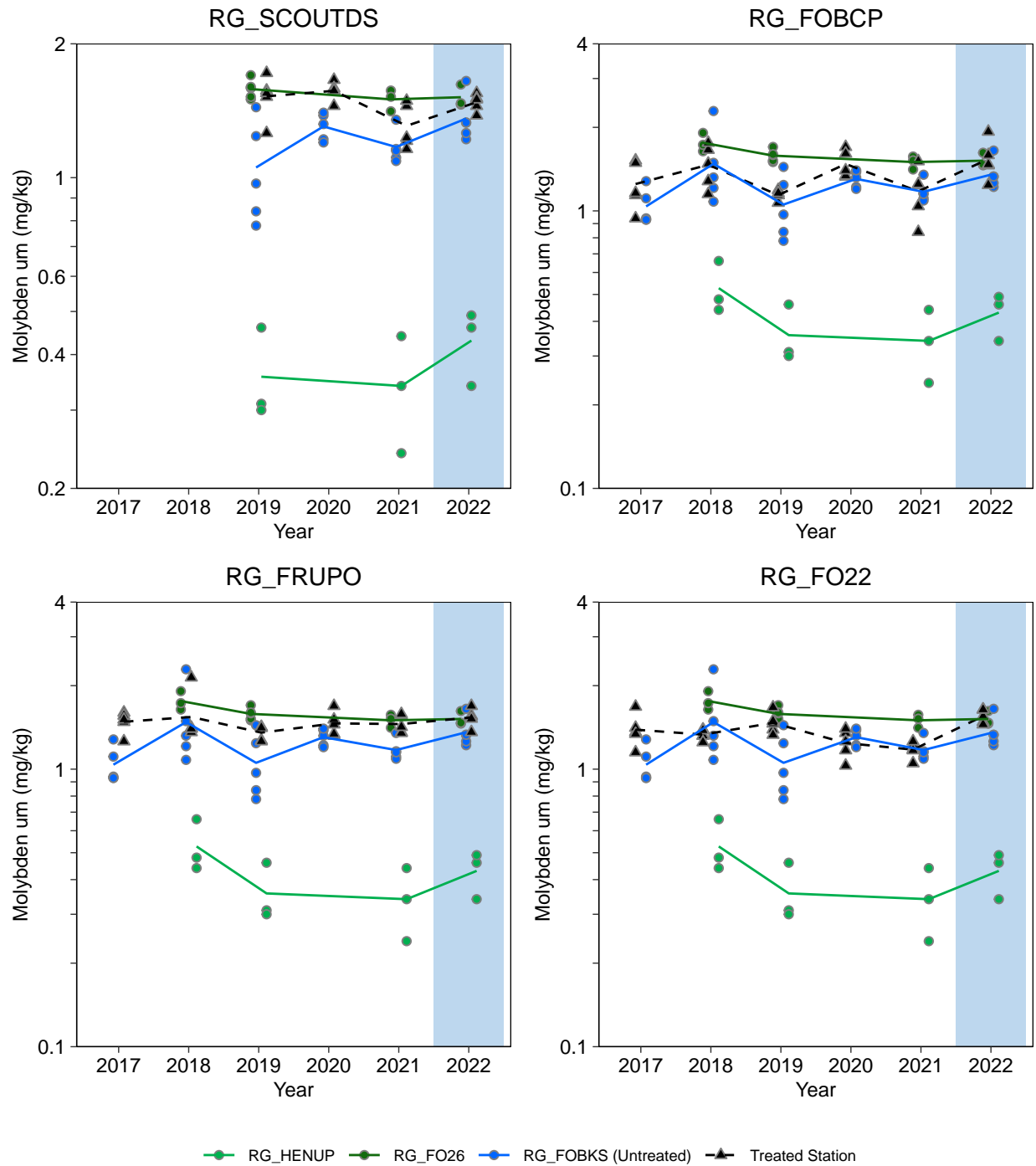


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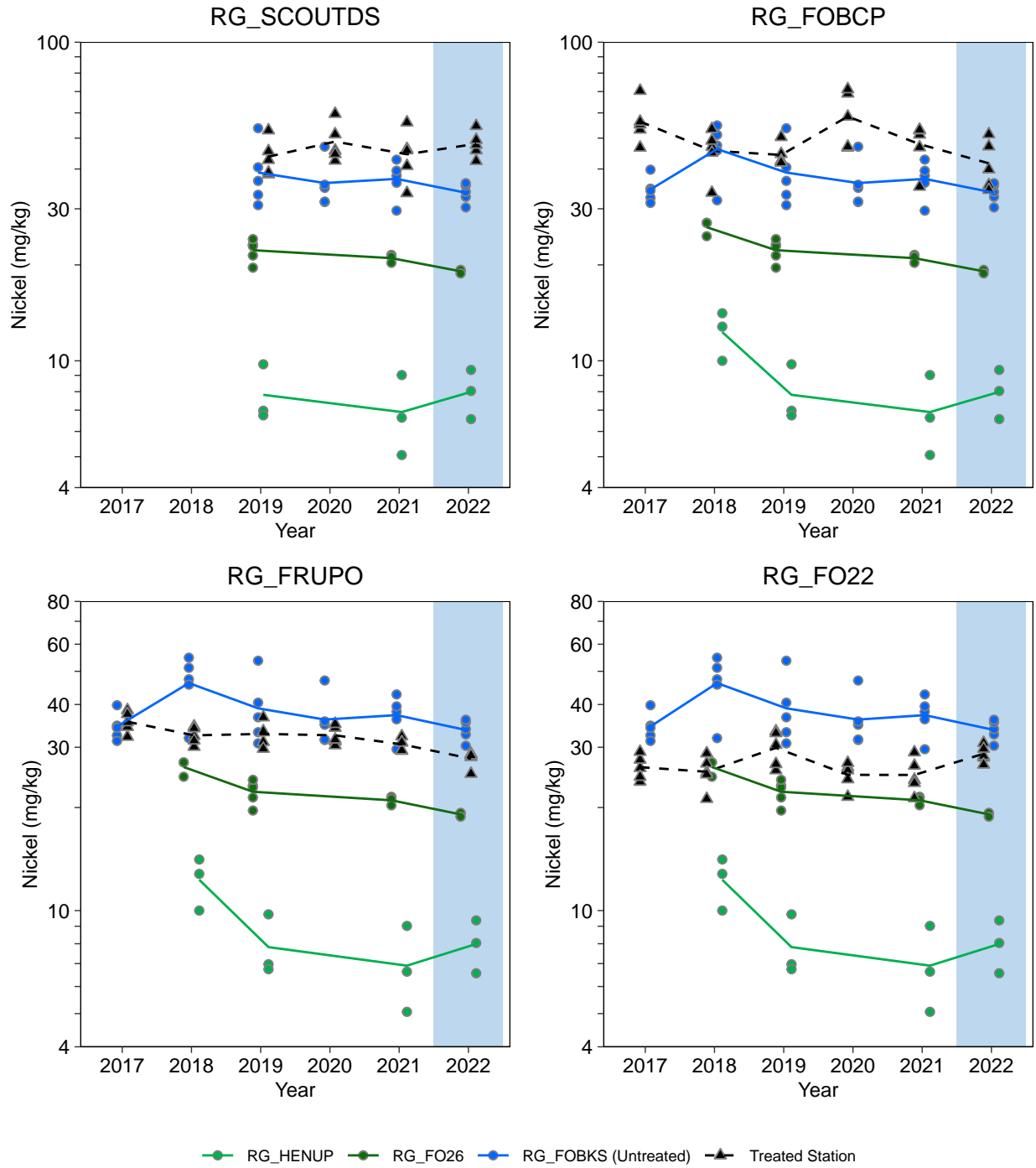


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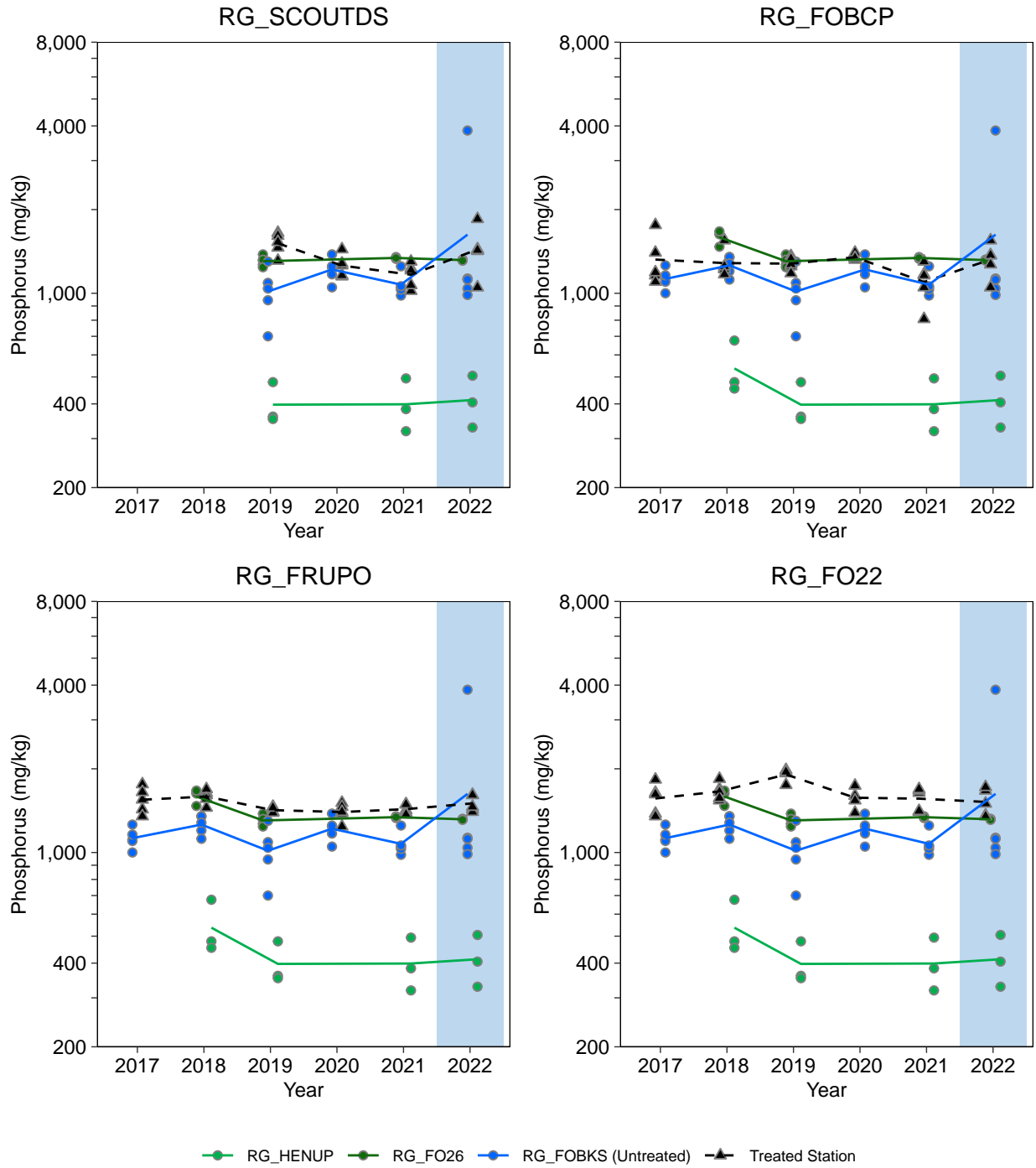


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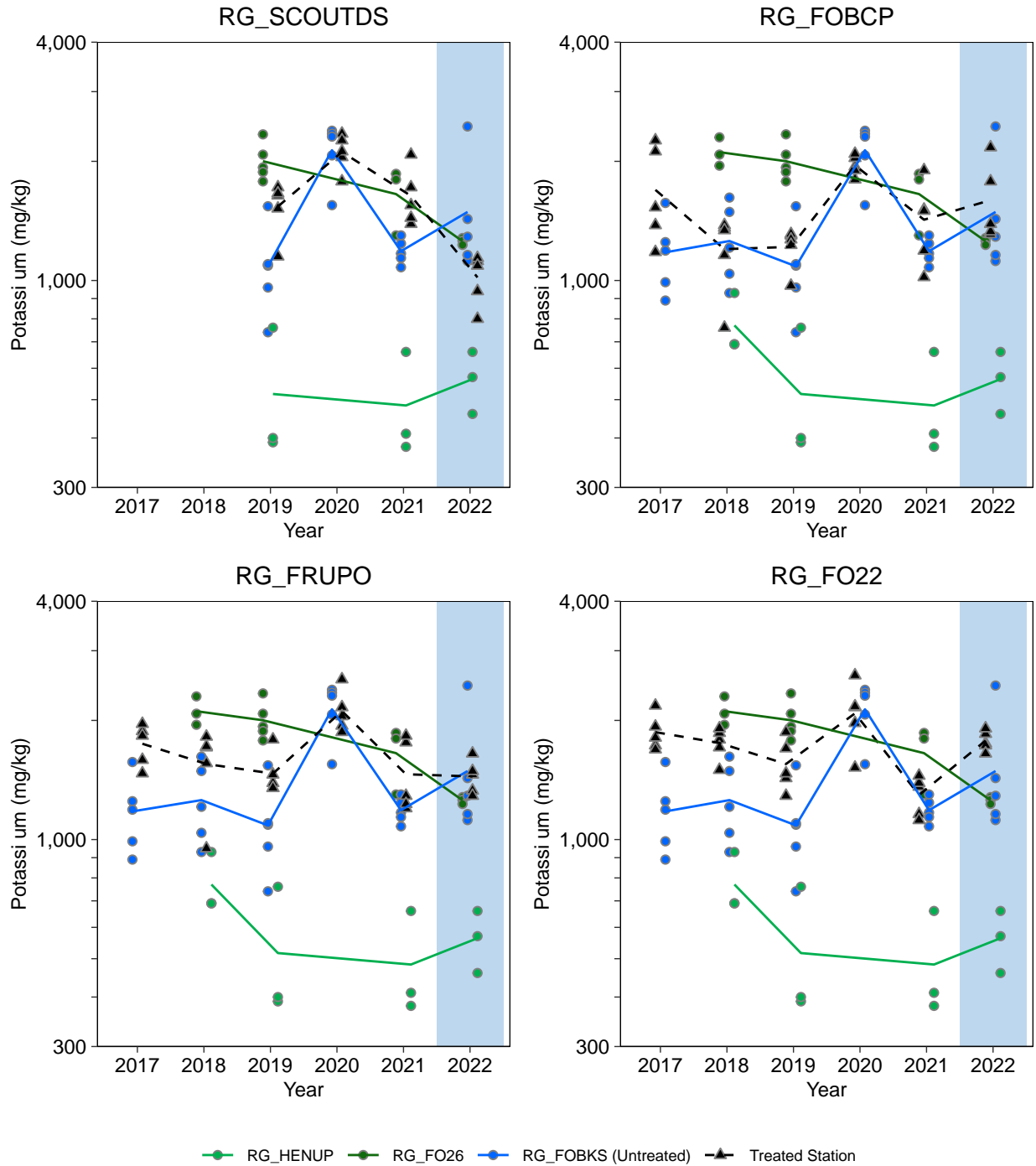


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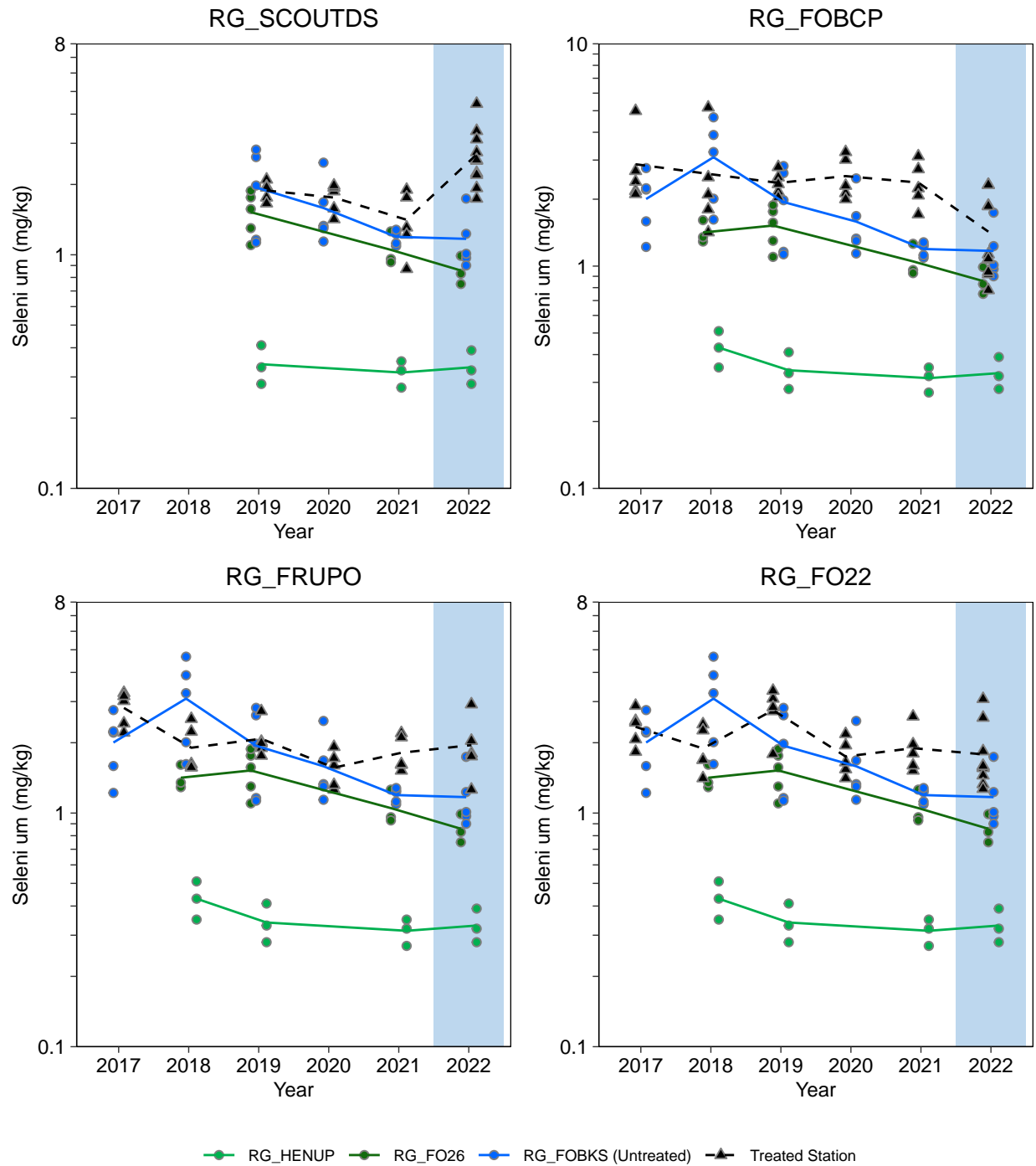


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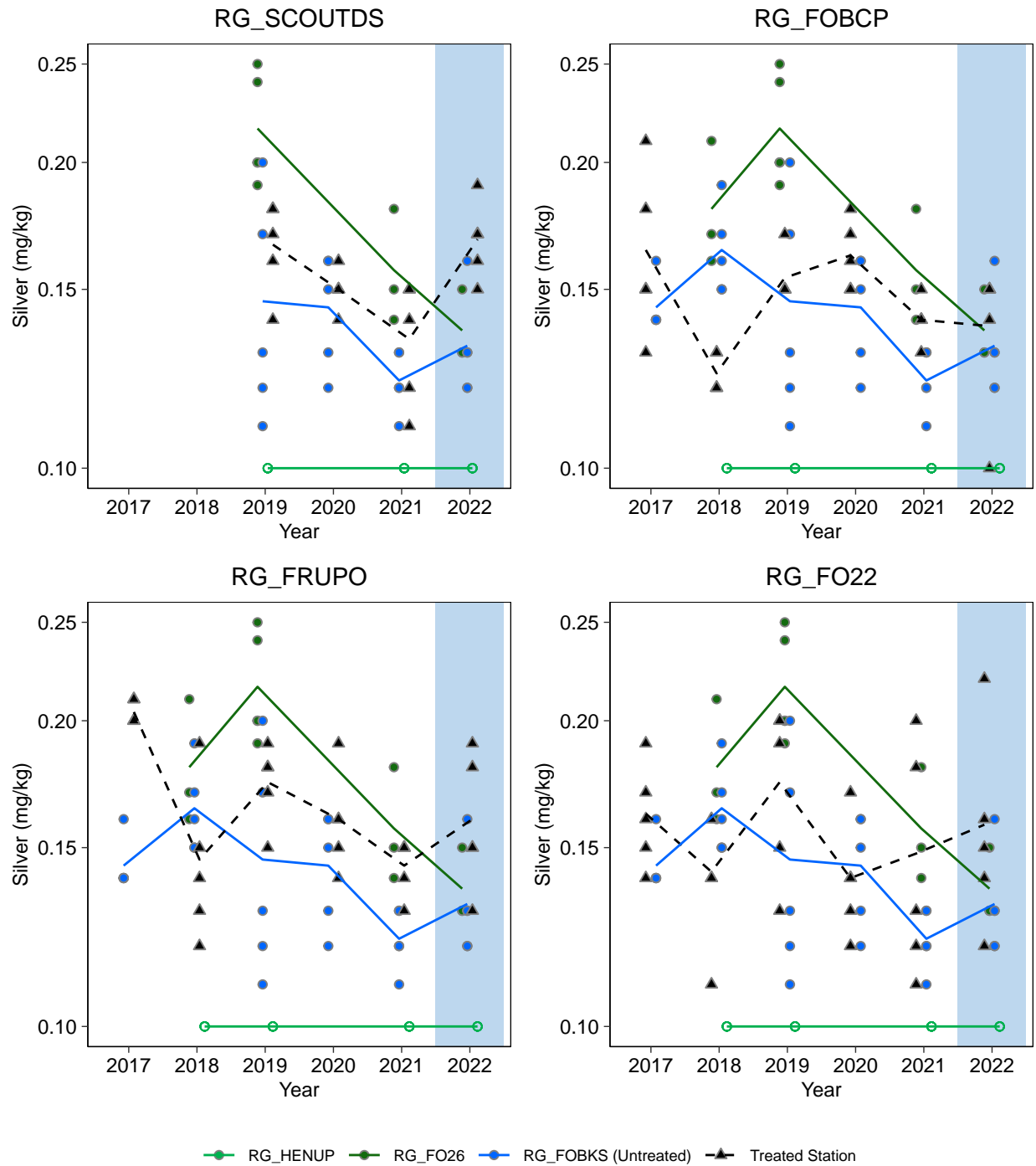


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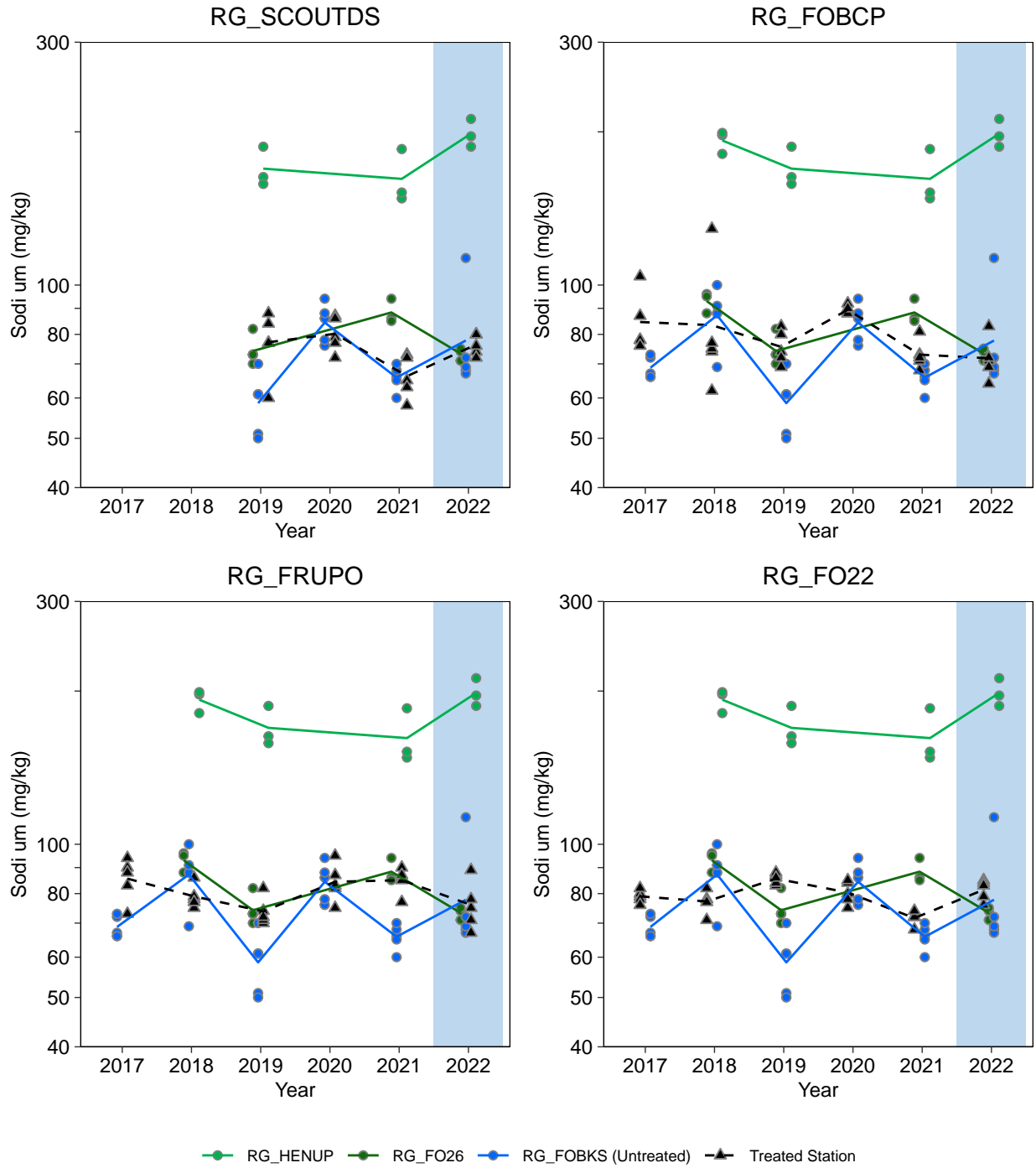


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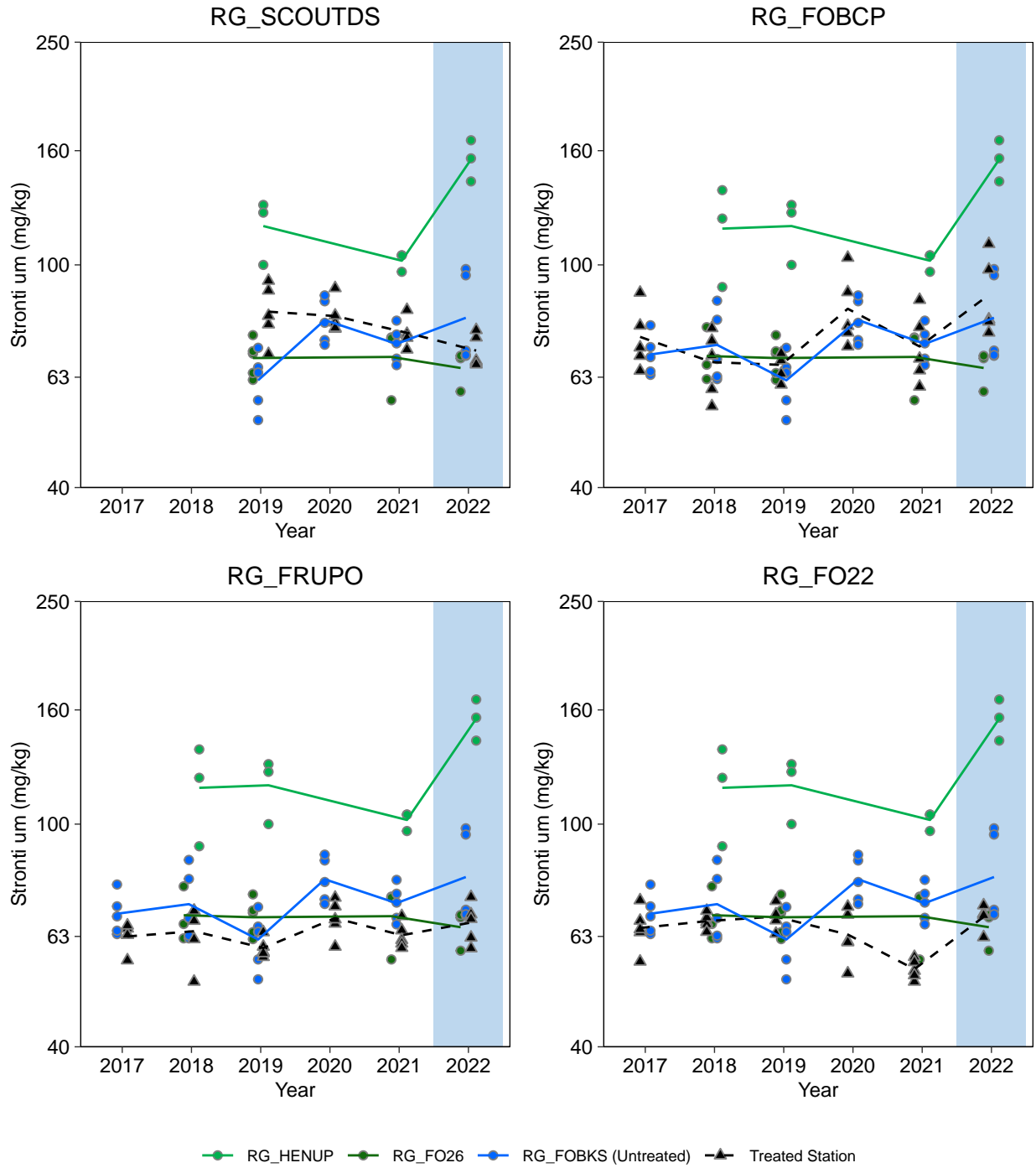


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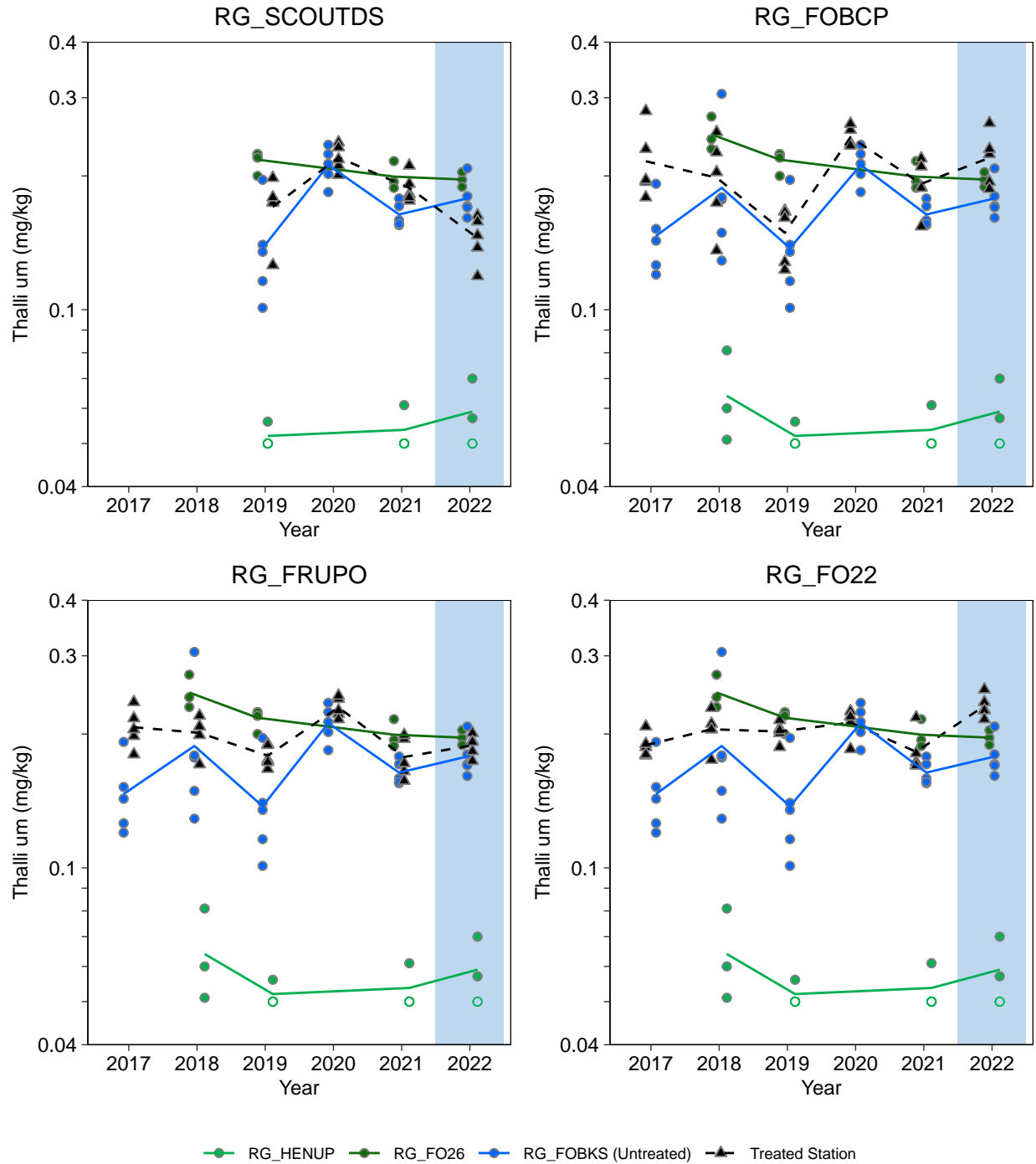


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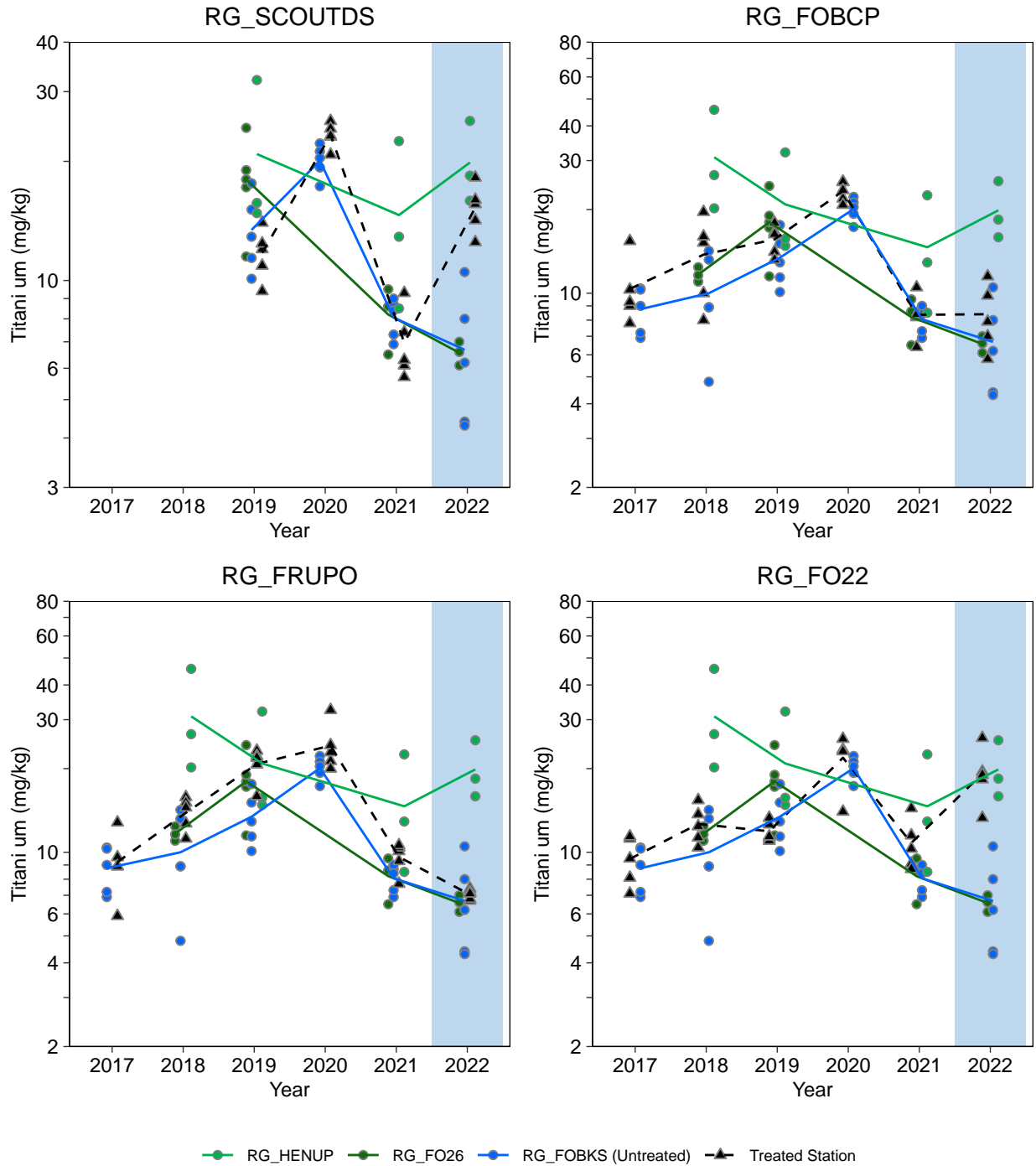


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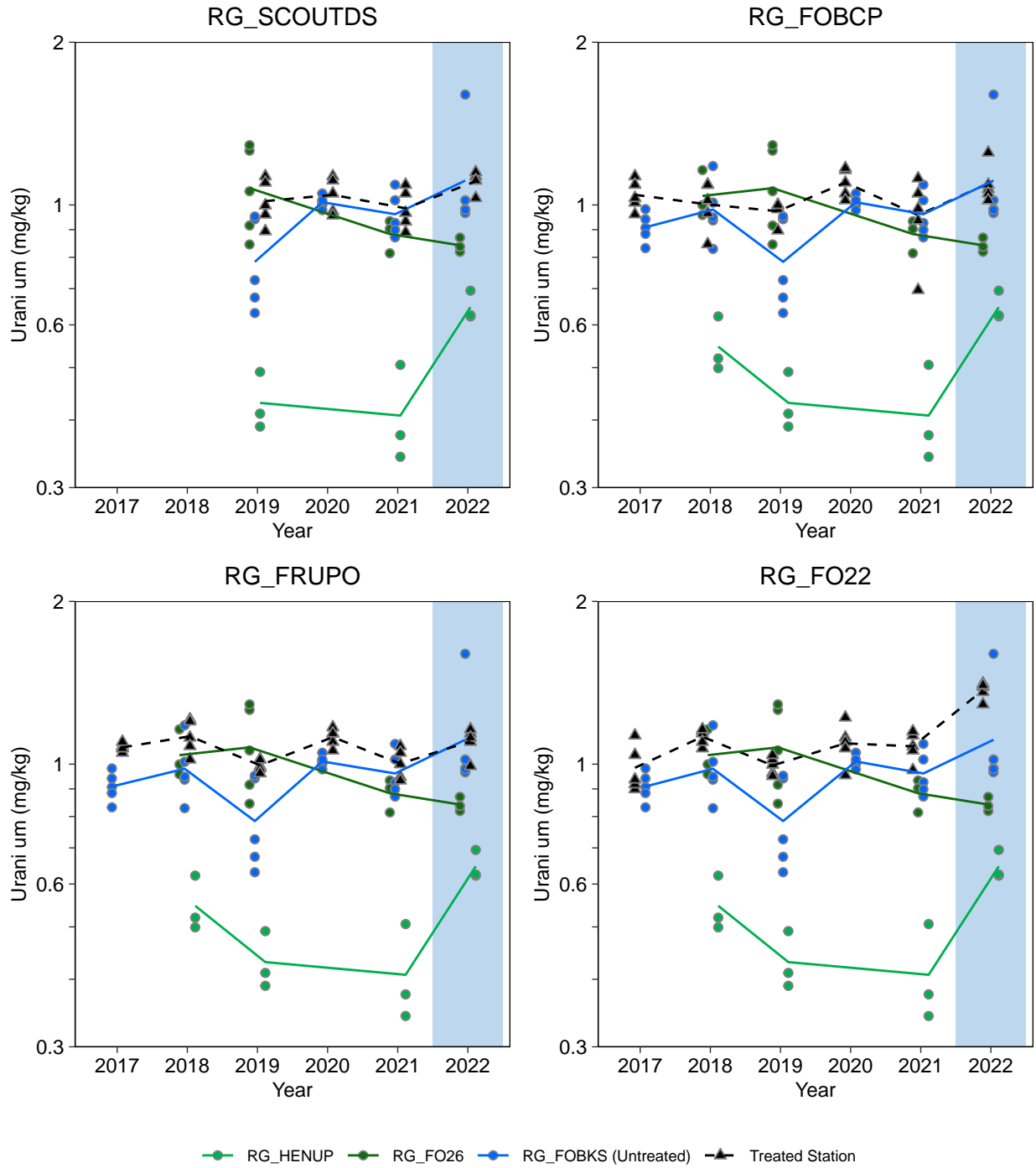


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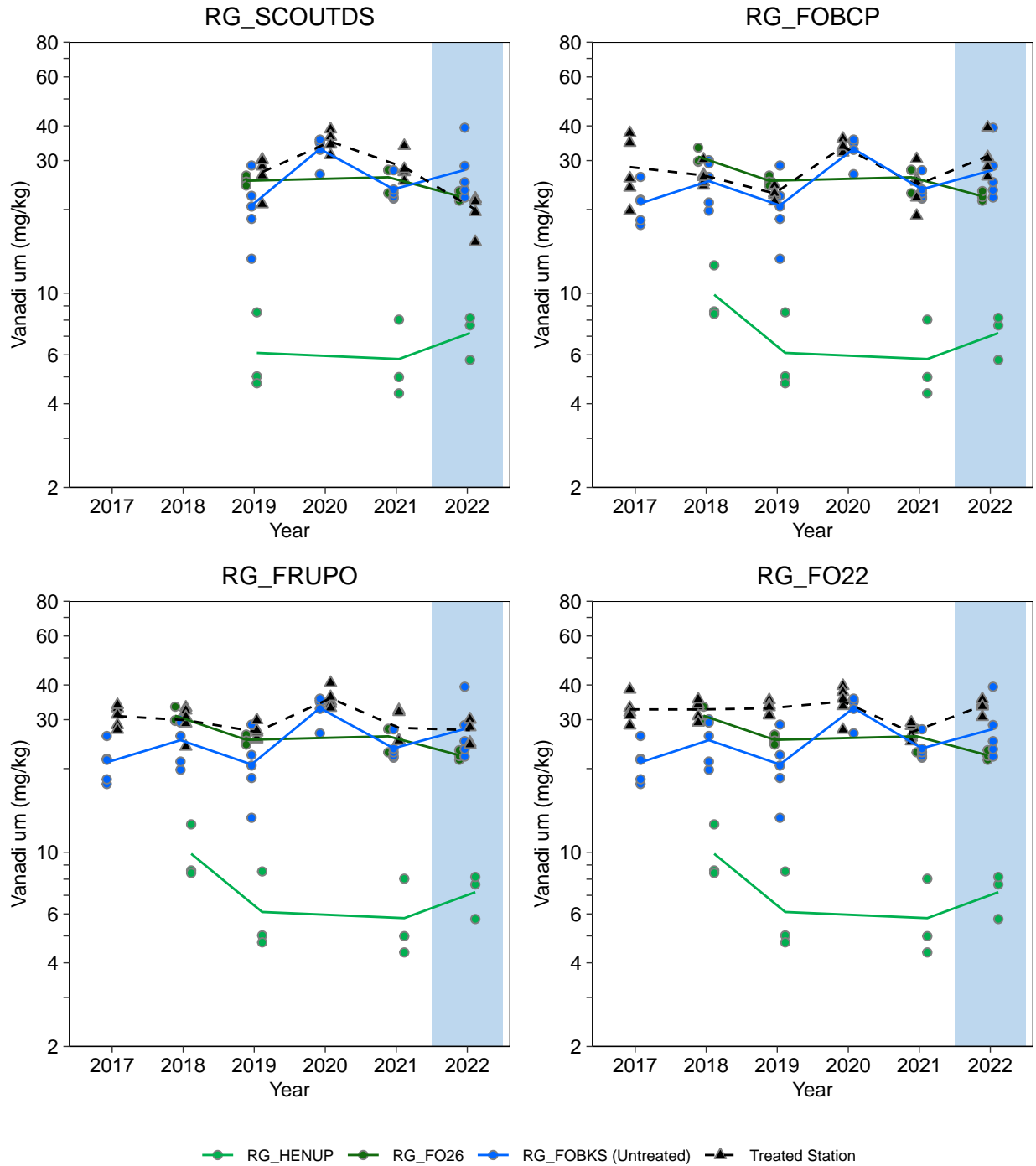


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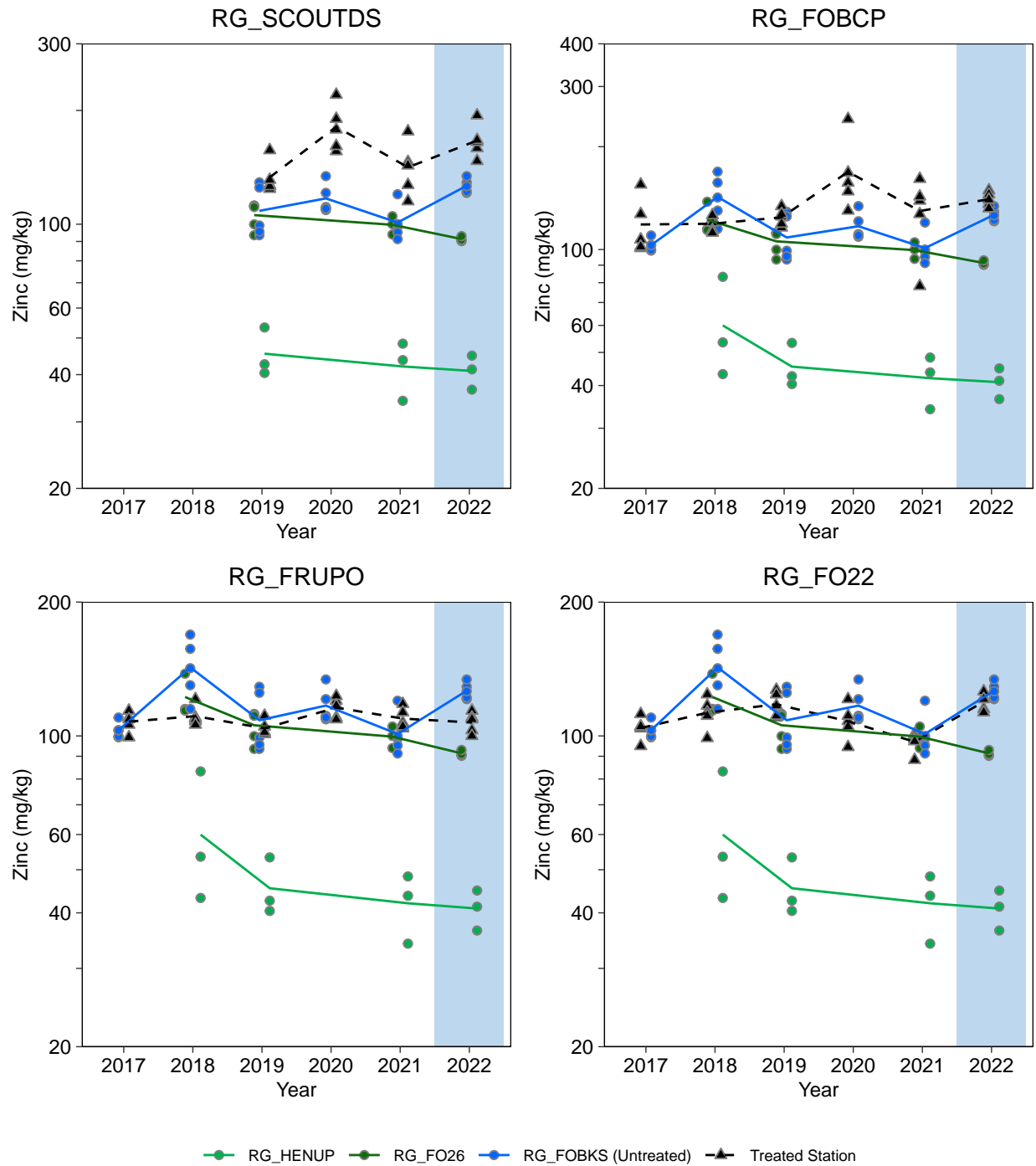


Figure F.3: Comparison of Sediment Composition, Metal and PAH Concentrations Upstream (RG_FOBKS) and Downstream of Treatment (RG_SCOUTDS)

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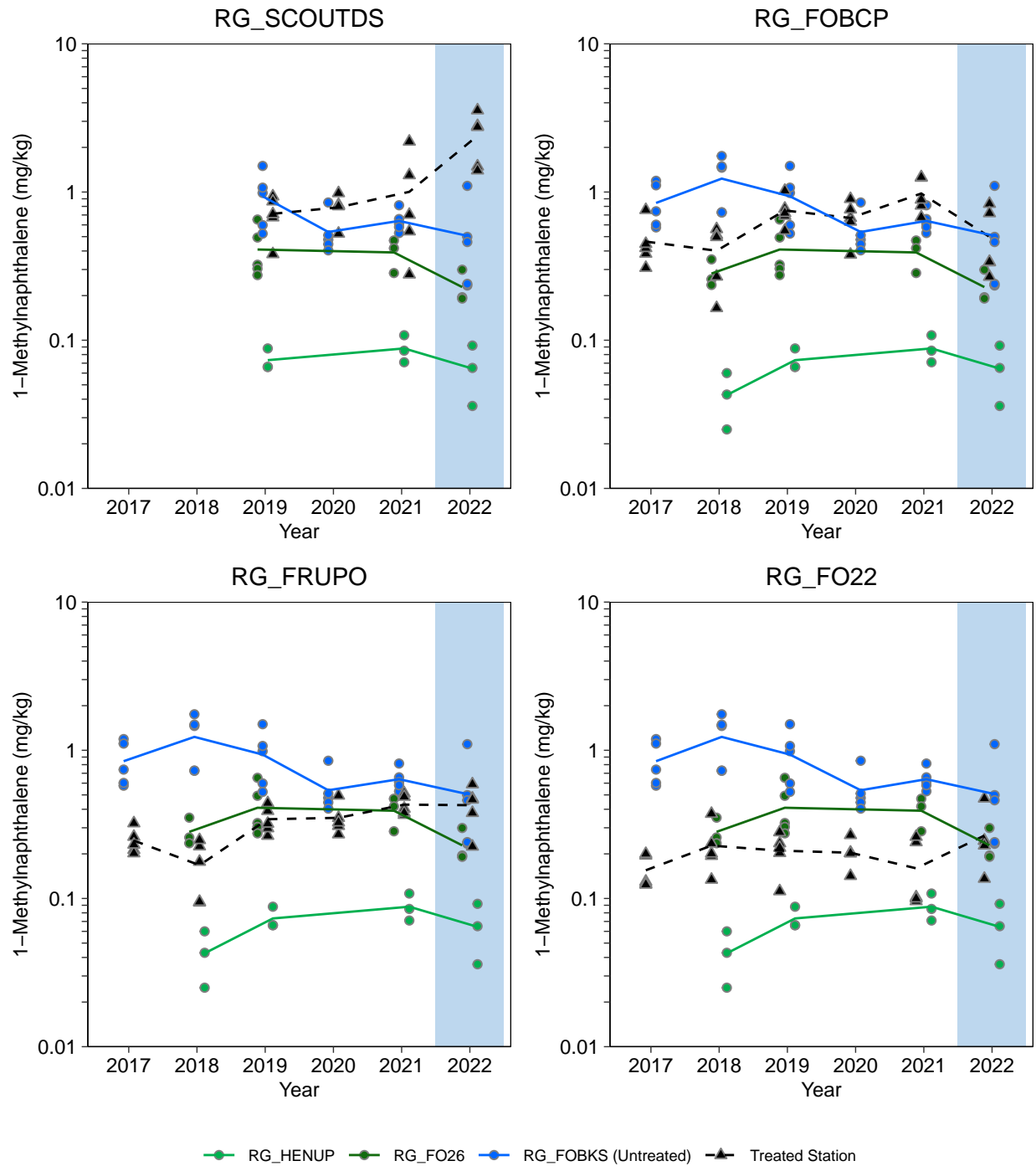


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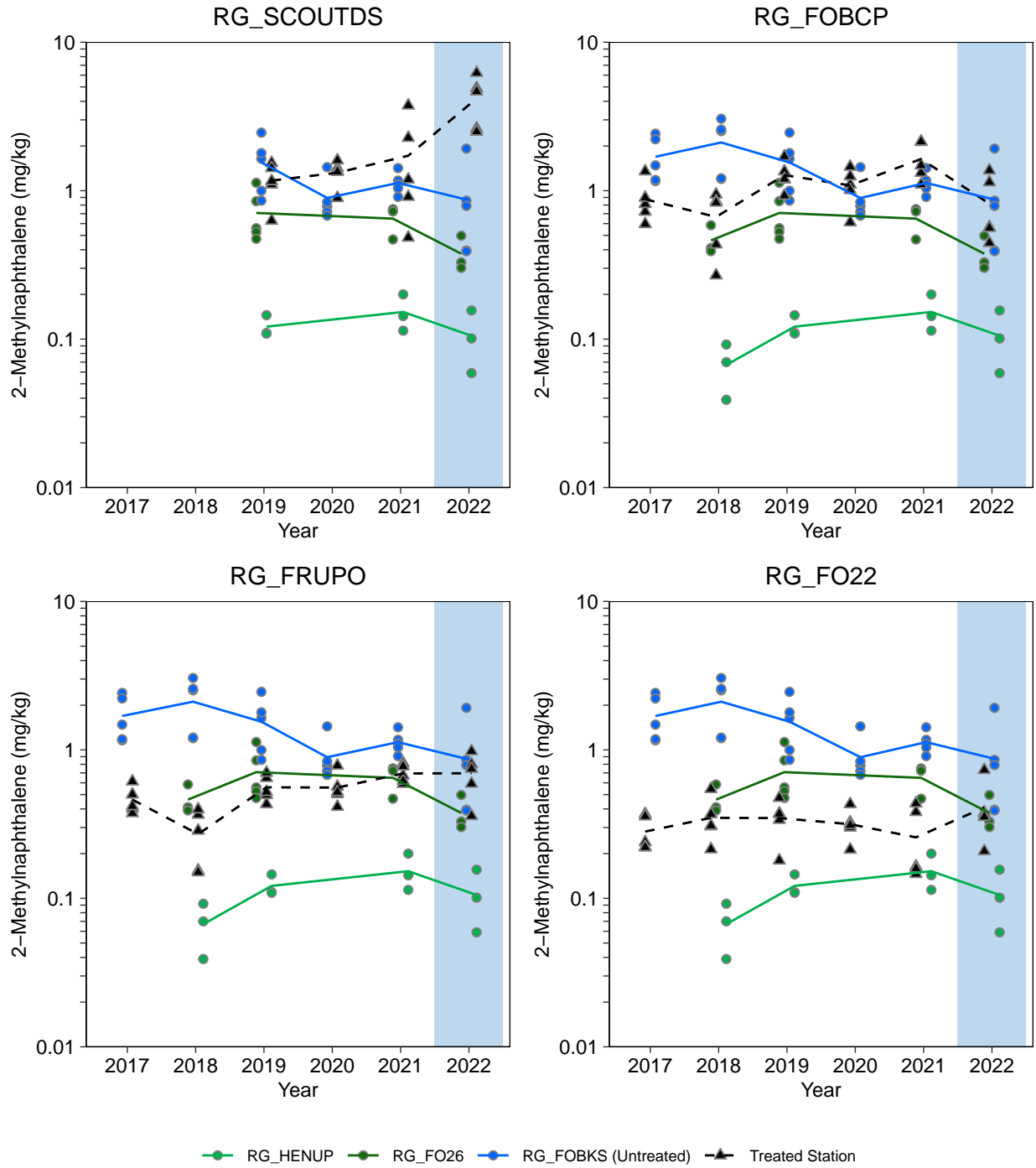


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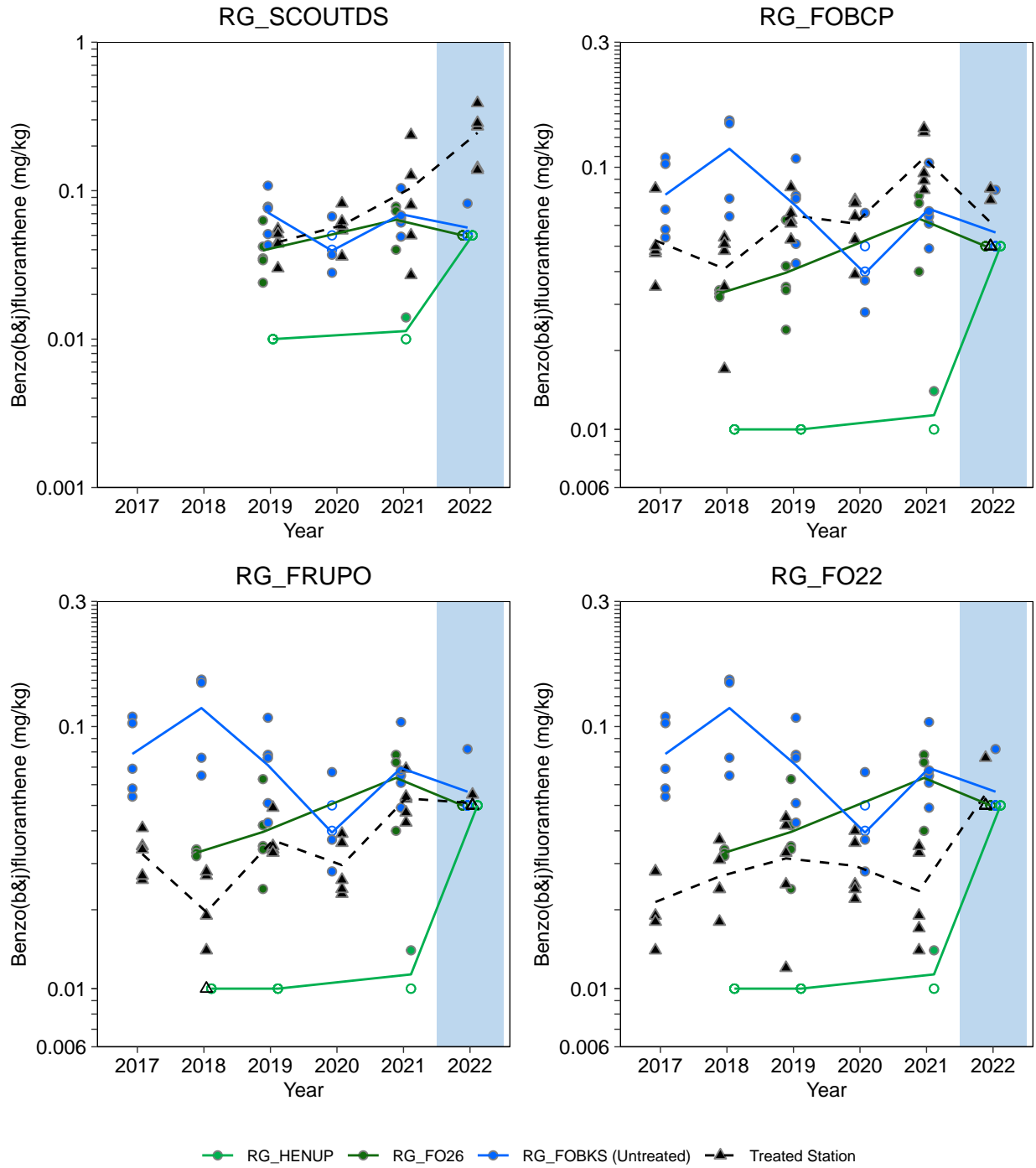


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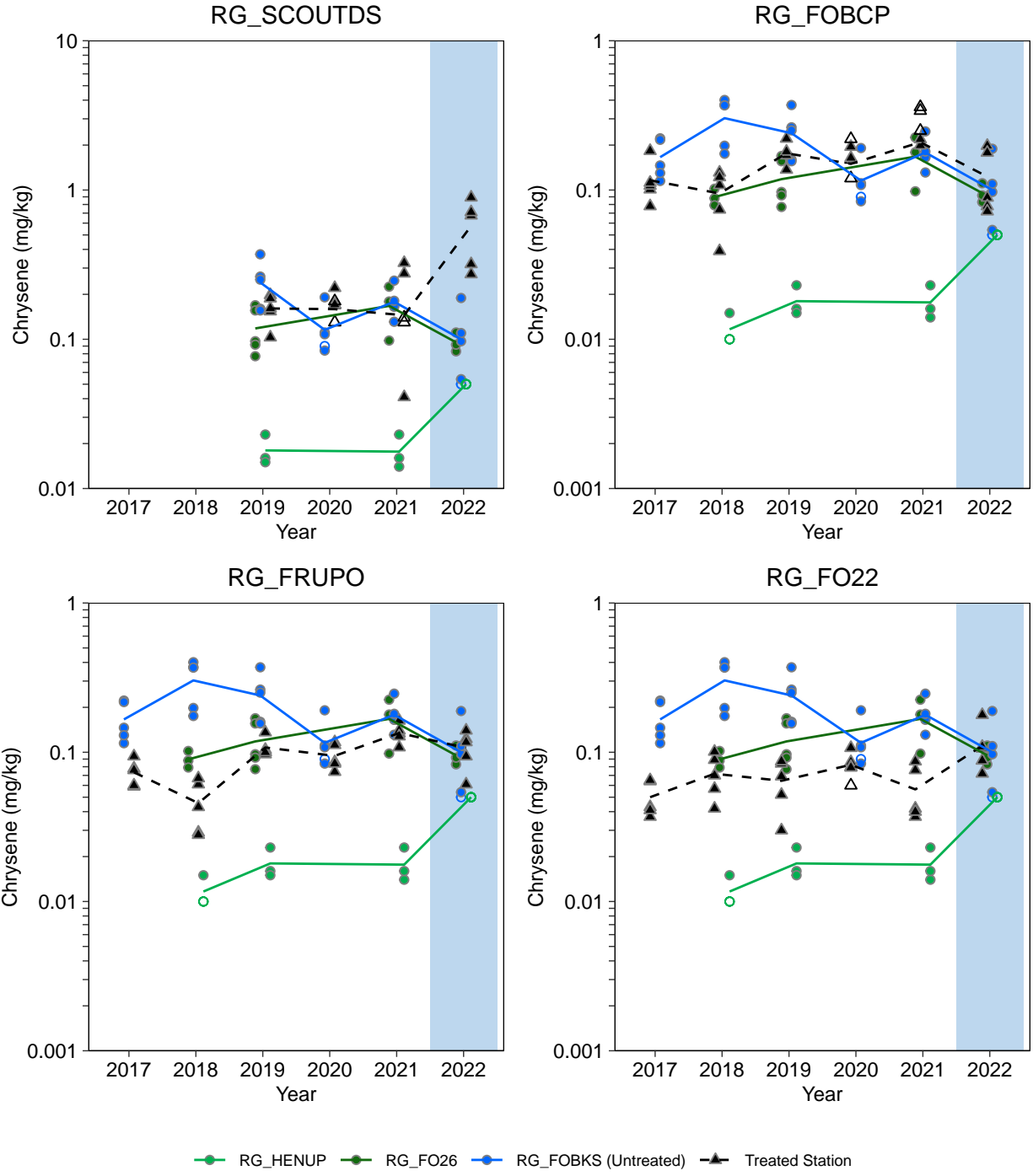


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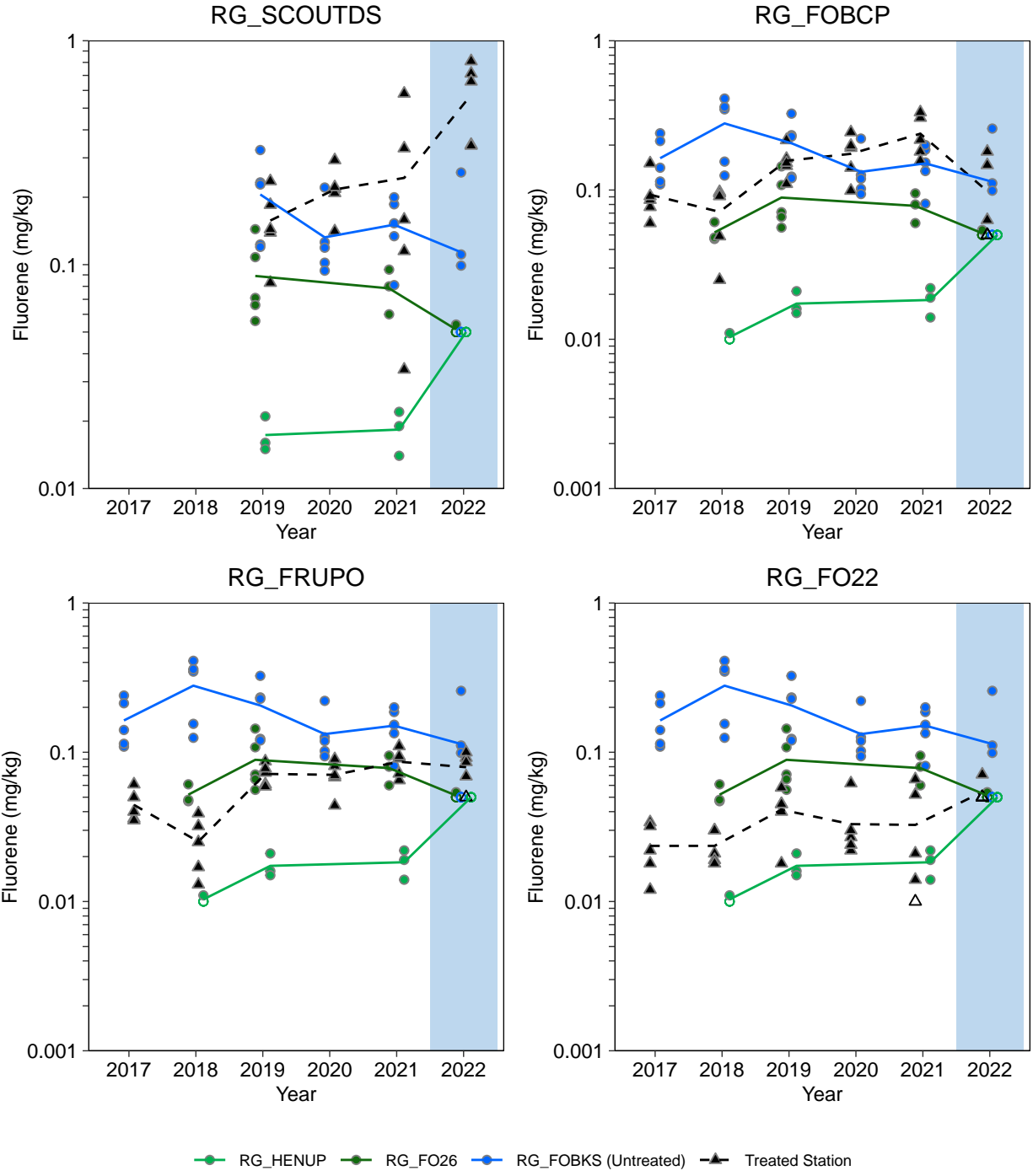


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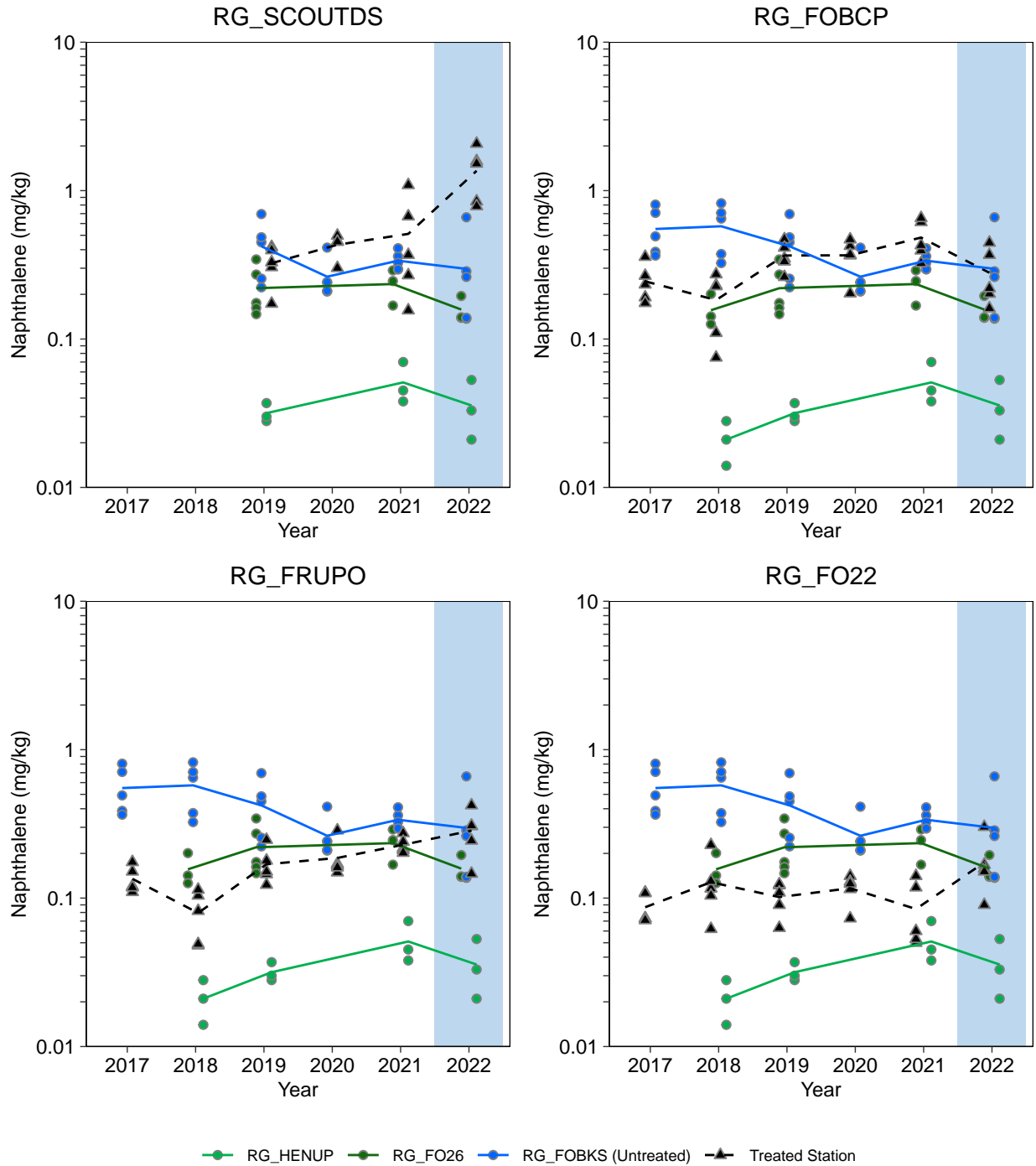


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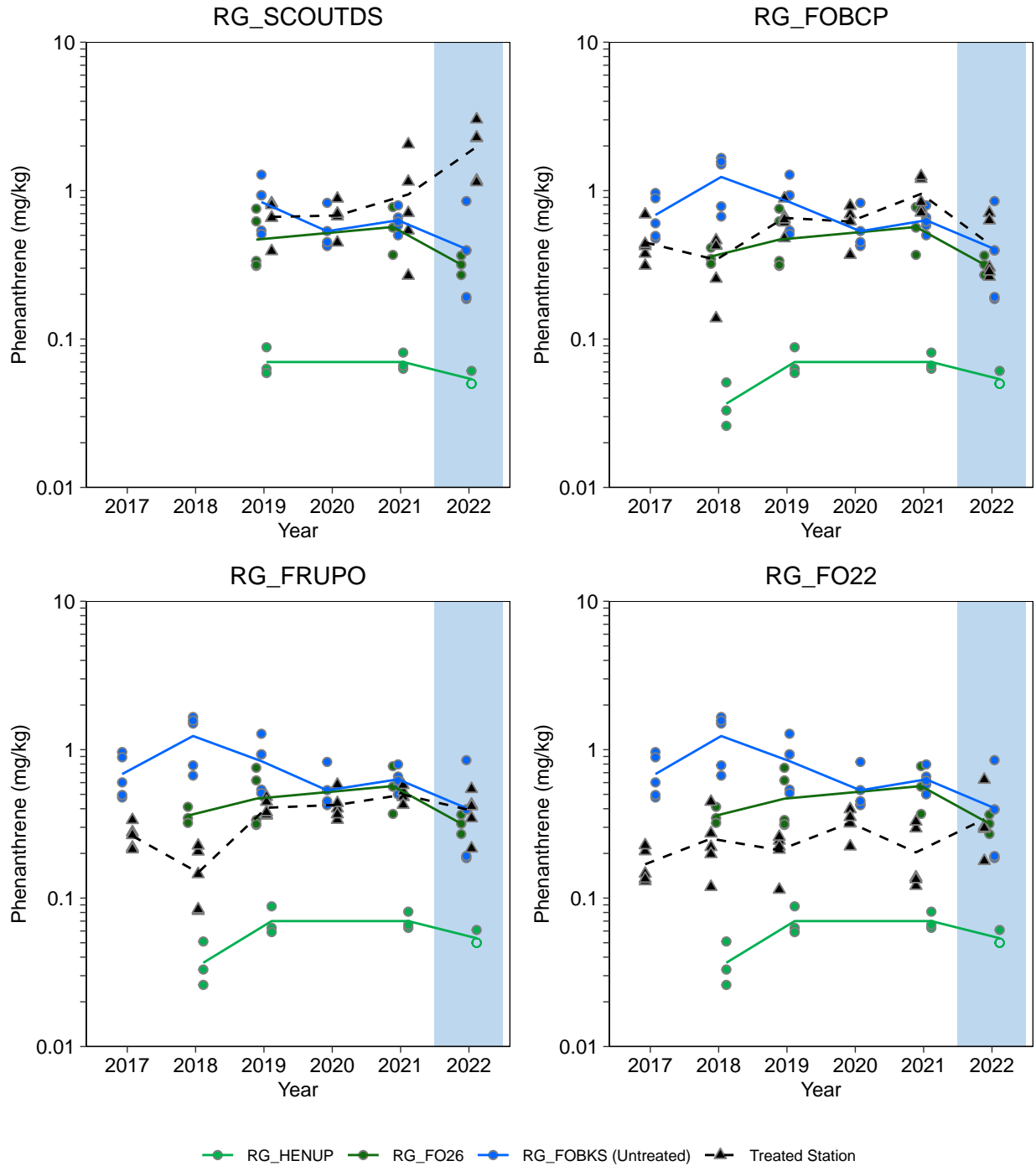


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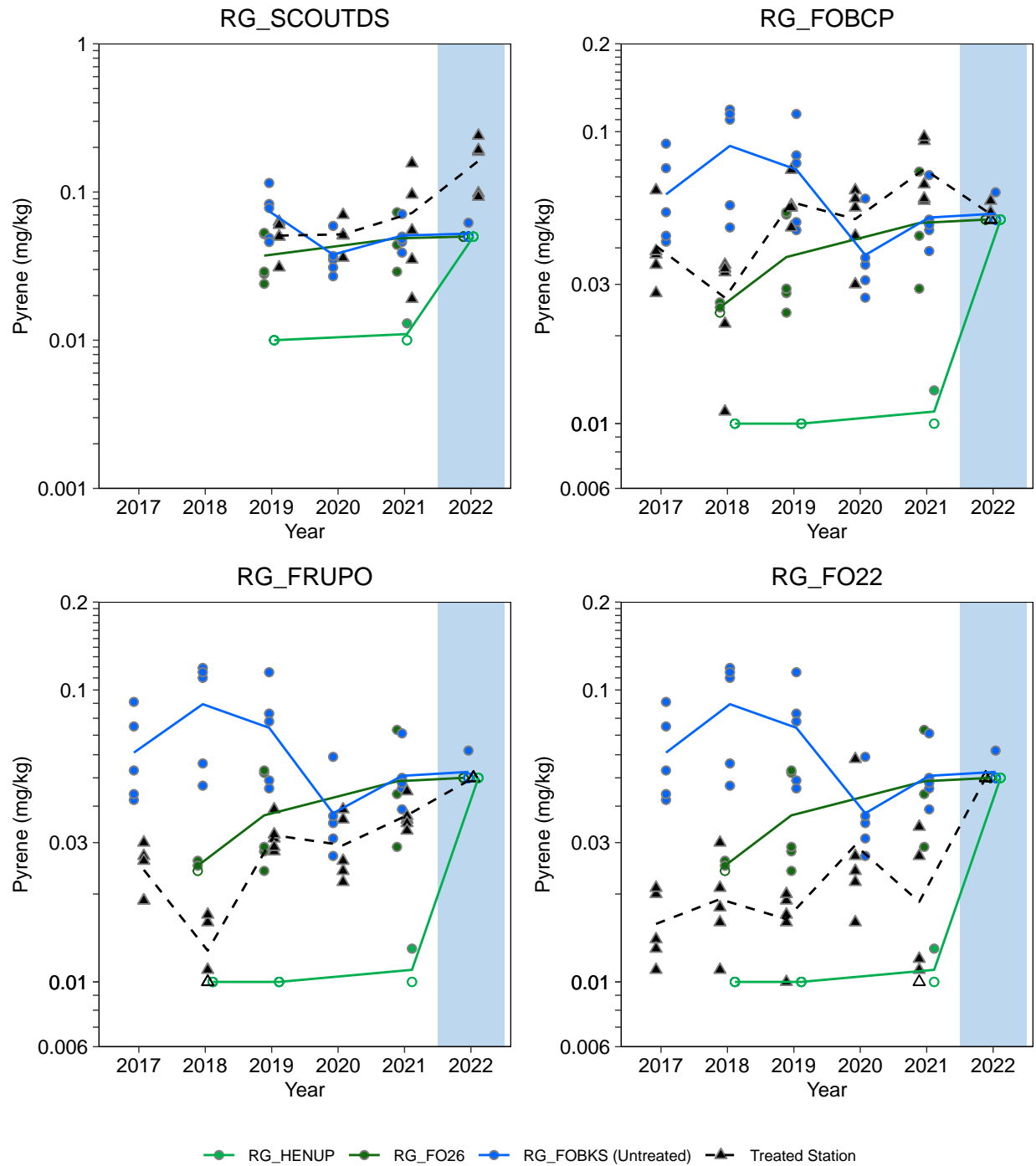


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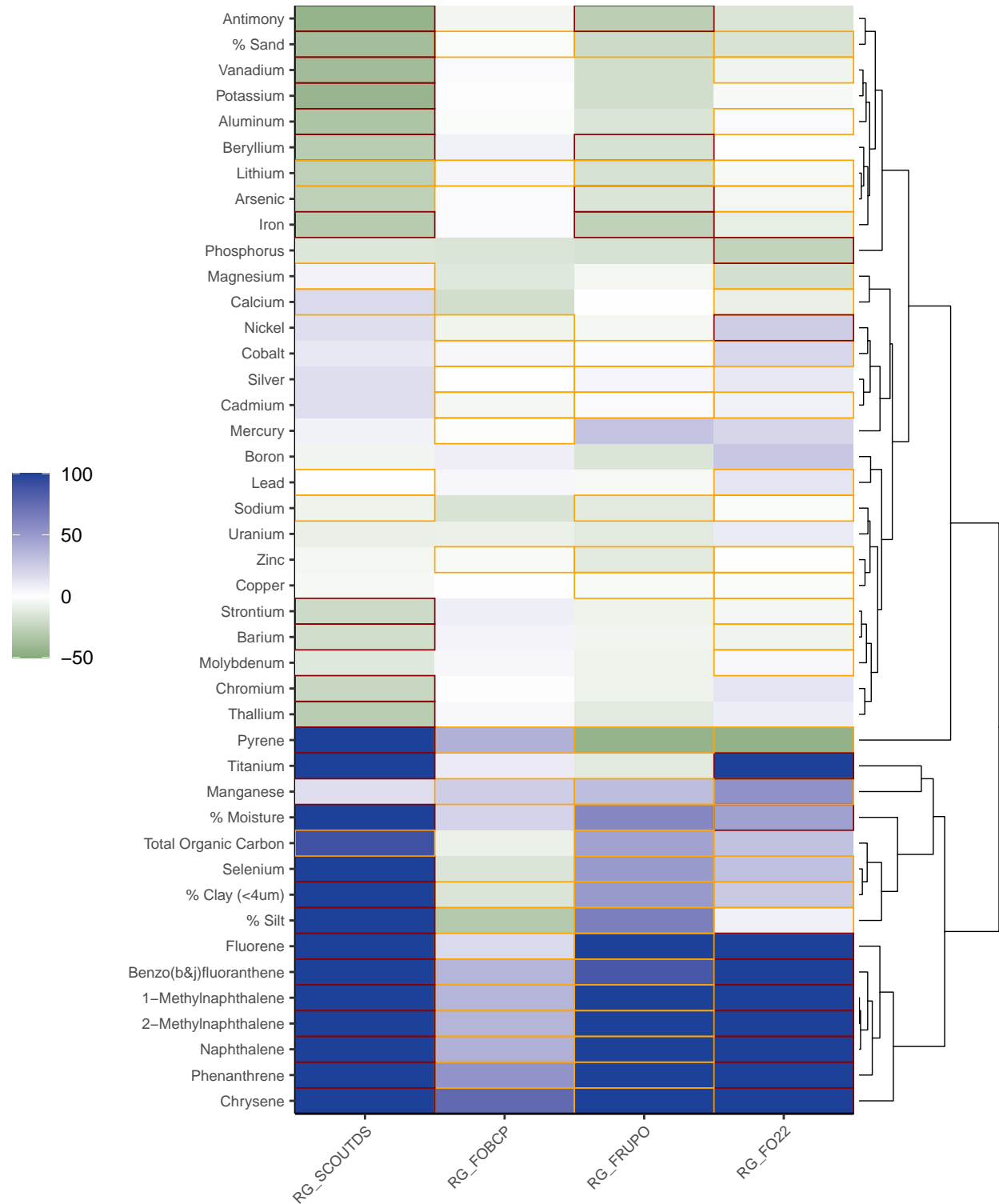


Figure F.4: Heatmap of Magnitude of Differences (MOD) from Statistical Analysis of Sediment Upstream and Downstream of Treatment, 2017 to 2022.

Notes: Orange boxes show significant BA (Year) x Treatment effects and red boxes show significant BA x Treatment effects. BA = Before-After term. Any MODs greater than 100 were rounded down to 100.

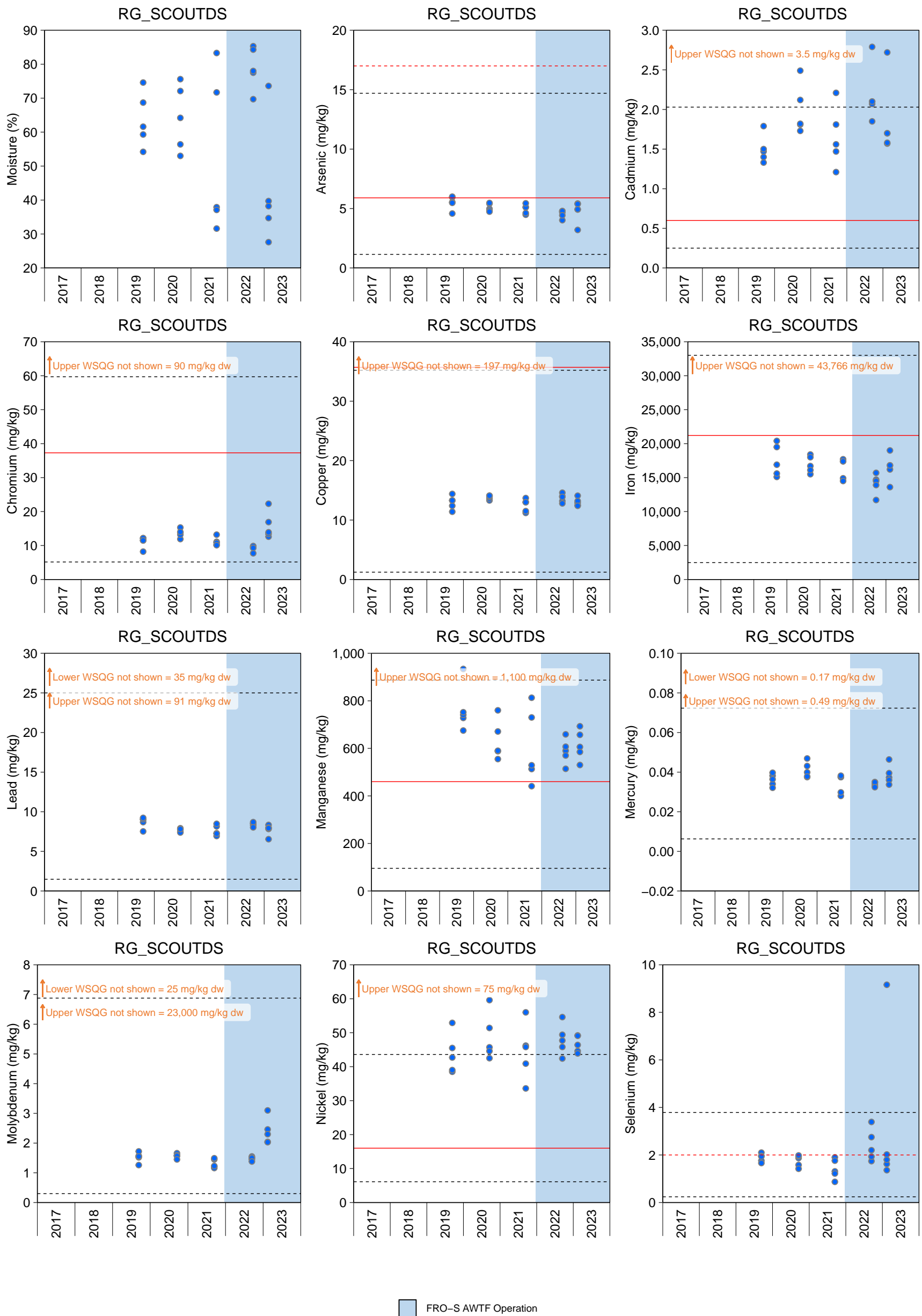


Figure F.5: Analyte Concentrations Relative to British Columbia Working Sediment Quality Guidelines, FRO LAEMP, 2017 to 2023

Notes: Green represents reference stations and blue represents mine-exposed stations. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Solid red line represents Lower Working Sediment Quality Guideline (WSQG). Hashed red line represents Upper WSQG (or alert concentration in the case of selenium; BC MOECCS 2021). Hashed black lines represent the reference area normal range (2.5th and 97.5th percentiles of 2017 to 2020 pooled reference area data, Minnow 2020).

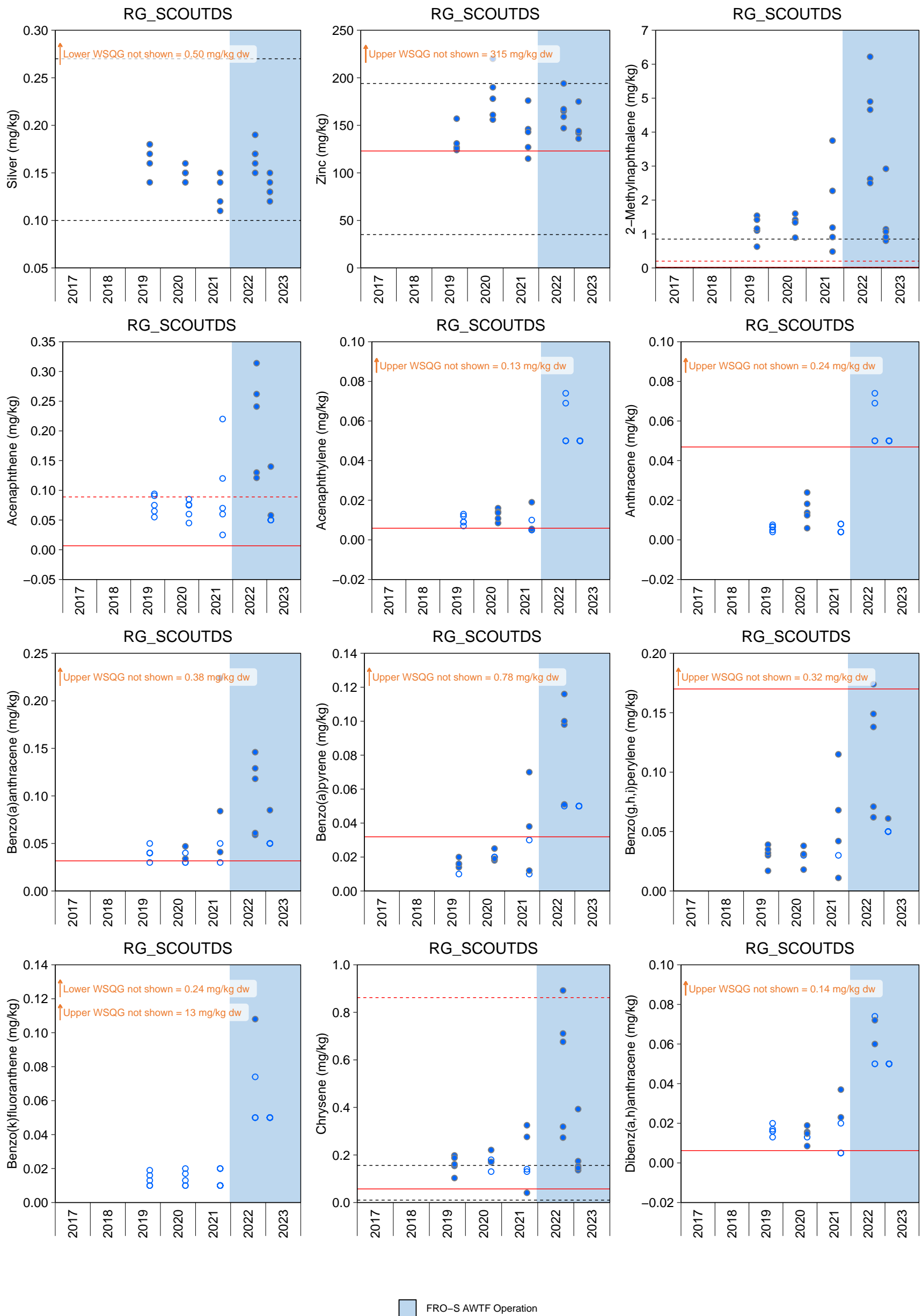


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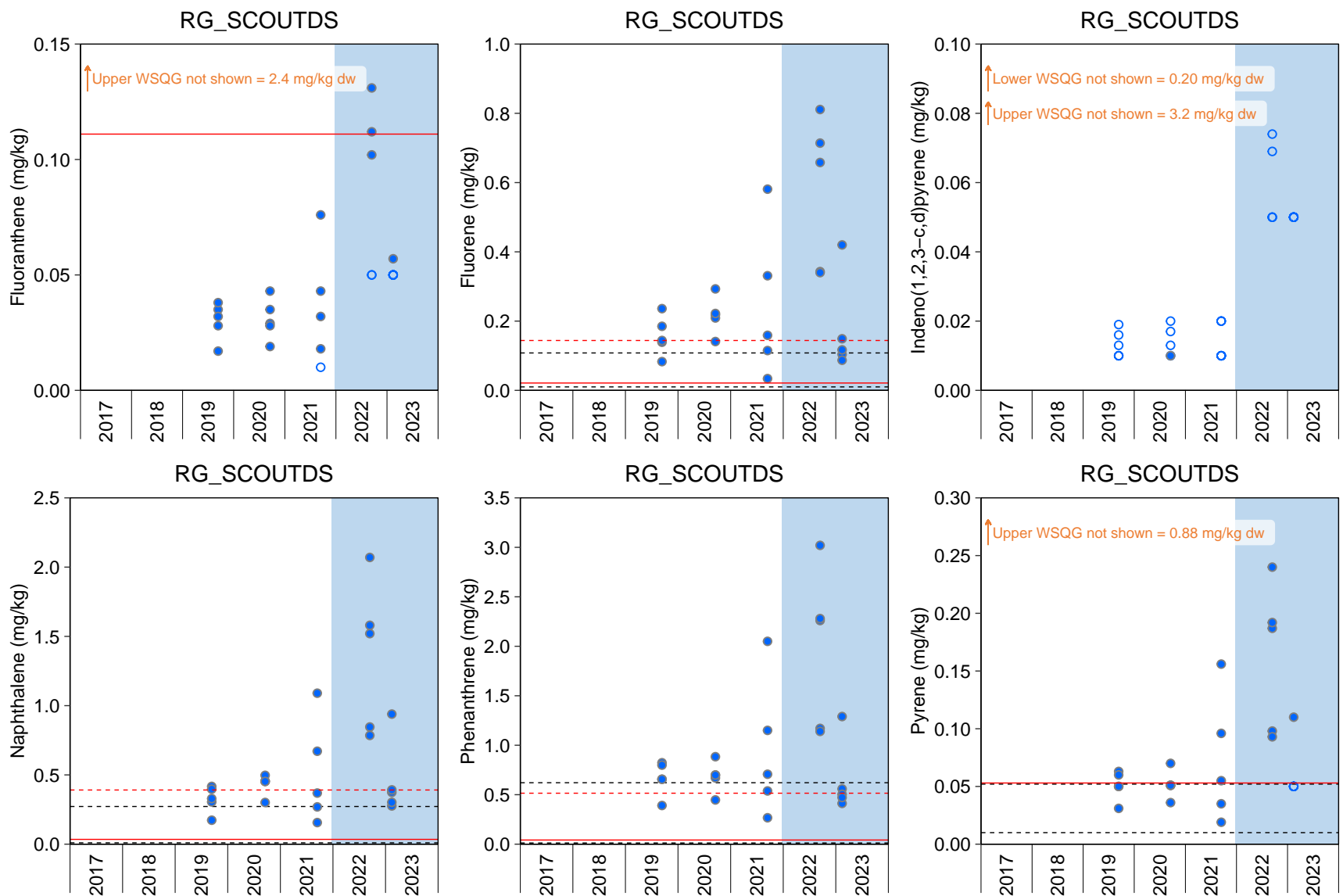


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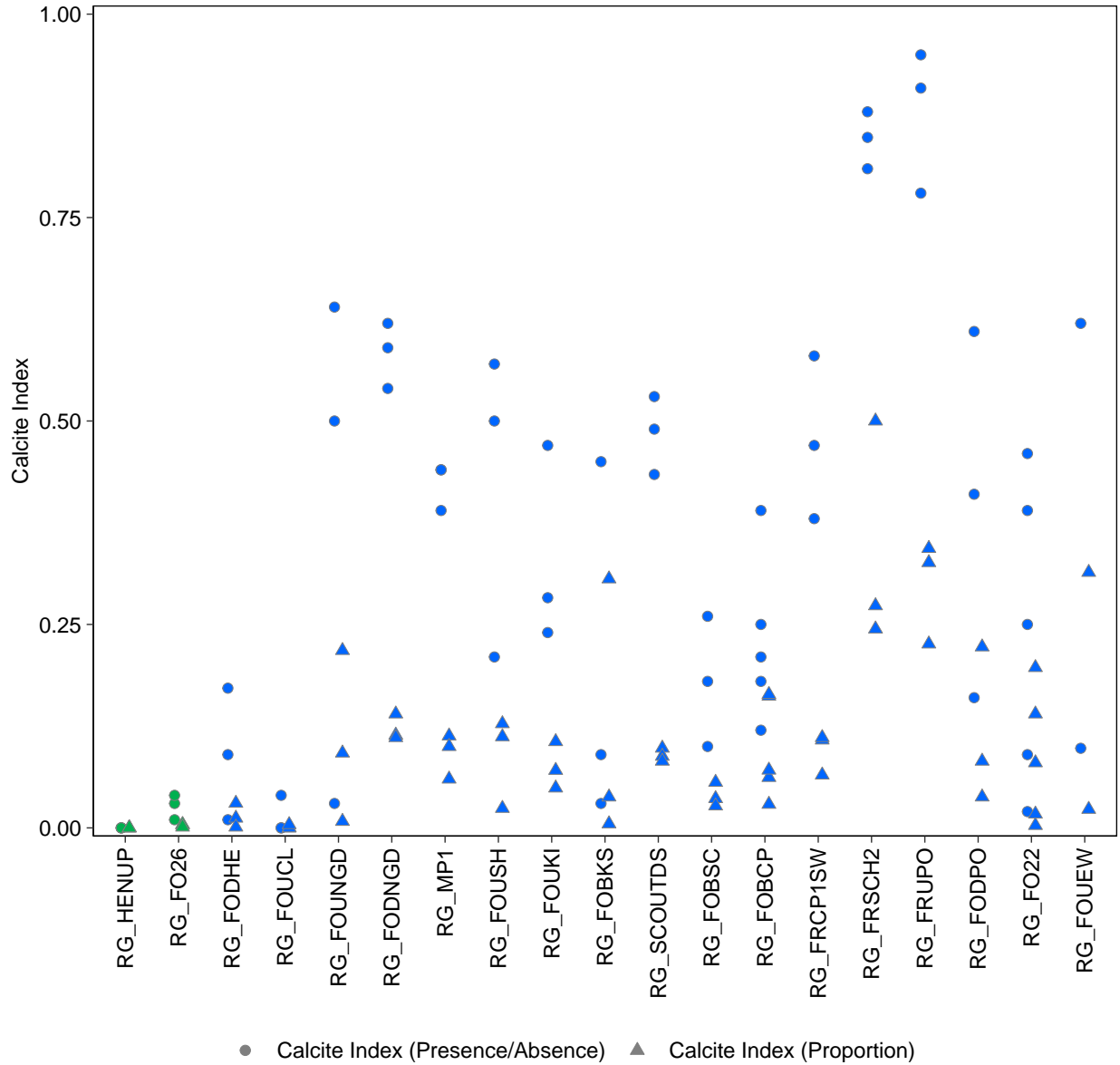


Figure F.6: Calcite Index FRO LAEMP, 2022

Notes: Green symbols represent reference areas and blue symbols represent exposed areas. In 2022, calcite presence was measured using both a presence/absence and proportional method and both calculated indices are presented.

Table F.1: Sediment Quality Samples and Summary Statistics for Lotic Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Parameter	Units	BC Sediment Quality Guidelines		RG_HENUP									RG_FO26							
		Lower SQG	Upper SQG	RG_HENUP-1	RG_HENUP-2	RG_HENUP-3	Minimum	Median	Maximum	Mean	Standard Deviation	RG_FO26-1	RG_FO26-2	RG_FO26-3	Minimum	Median	Maximum	Mean	Standard Deviation	
		12-Sep-22	12-Sep-22	12-Sep-22	12-Sep-22	12-Sep-22	12-Sep-22	12-Sep-22	12-Sep-22	12-Sep-22	12-Sep-22	16-Sep-22	16-Sep-22	16-Sep-22	16-Sep-22	16-Sep-22	16-Sep-22	16-Sep-22	16-Sep-22	
Physical Tests	Moisture	%	-	-	29.3	33.0	25.3	25.3	29.3	33.0	29.2	3.85	52.6	43.5	40.7	40.7	43.5	52.6	45.6	6.22
	pH(1:2 Soil:Water)	pH	-	-	8.19	8.40	8.50	8.19	8.40	8.50	8.36	0.158	7.97	8.16	8.05	7.97	8.05	8.16	8.06	0.0954
Particle Size	% Gravel (>2 mm)	%	-	-	<1	1.80	4.60	<1	1.80	4.60	2.47	1.87	2.80	1.80	1.20	1.20	1.80	2.80	1.93	0.808
	% Sand (2.00 mm - 1.00 mm)	%	-	-	<1	3.00	6.10	<1	3.00	6.10	3.37	2.07	4.60	2.70	2.00	2.00	2.70	4.60	3.10	1.35
	% Sand (1.00 mm - 0.50 mm)	%	-	-	9.70	14.2	23.4	9.70	14.2	23.4	15.8	6.98	7.00	5.40	16.1	5.40	7.00	16.1	9.50	5.77
	% Sand (0.50 mm - 0.25 mm)	%	-	-	32.7	30.0	34.2	30.0	32.7	34.2	32.3	2.13	13.6	23.5	35.4	13.6	23.5	35.4	24.2	10.9
	% Sand (0.25 mm - 0.125 mm)	%	-	-	22.4	20.3	15.5	15.5	20.3	22.4	19.4	3.54	20.5	29.2	23.5	20.5	23.5	29.2	24.4	4.42
	% Sand (0.125 mm - 0.063 mm)	%	-	-	14.8	10.8	5.00	5.00	10.8	14.8	10.2	4.93	8.90	14.8	7.60	7.60	8.90	14.8	10.4	3.84
	% Silt (0.063 mm - 0.0312 mm)	%	-	-	9.30	8.10	4.10	4.10	8.10	9.30	7.17	2.72	19.4	10.5	6.10	6.10	10.5	19.4	12.0	6.78
	% Silt (0.0312 mm - 0.004 mm)	%	-	-	8.40	9.30	5.40	5.40	8.40	9.30	7.70	2.04	20.0	9.90	6.30	6.30	9.90	20.0	12.1	7.10
% Clay (<4 µm)	%	-	-	2.00	2.50	1.70	1.70	2.00	2.50	2.07	0.404	3.20	2.20	1.80	1.80	2.20	3.20	2.40	0.721	
Organic Carbon	Total Organic Carbon	%	-	-	5.71	5.30	5.17	5.17	5.30	5.71	5.39	0.282	4.90	2.81	2.79	2.79	2.81	4.90	3.50	1.21
Metals	Aluminum (Al)	mg/kg	-	-	2,120	2,340	1,590	1,590	2,120	2,340	2,017	386	5,820	5,960	5,640	5,640	5,820	5,960	5,807	160
	Antimony (Sb)	mg/kg	-	-	<0.1	0.110	<0.1	<0.1	<0.1	0.110	0.103	-	0.500	0.580	0.580	0.500	0.580	0.580	0.553	0.0462
	Arsenic (As)	mg/kg	5.9	17	1.76	1.84	1.34	1.34	1.76	1.84	1.65	0.269	5.06	5.27	5.37	5.06	5.27	5.37	5.23	0.158
	Barium (Ba)	mg/kg	-	-	18.5	22.4	14.7	14.7	18.5	22.4	18.5	3.85	139	144	144	139	144	144	142	2.89
	Beryllium (Be)	mg/kg	-	-	0.140	0.170	0.120	0.120	0.140	0.170	0.143	0.0252	0.520	0.540	0.500	0.500	0.520	0.540	0.520	0.0200
	Bismuth (Bi)	mg/kg	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
	Boron (B)	mg/kg	-	-	<5	<5	<5	<5	<5	<5	<5	-	5.60	<5	<5	<5	<5	5.60	5.20	-
	Cadmium (Cd)	mg/kg	0.60	3.5	0.436	0.352	0.352	0.352	0.436	0.352	0.380	0.0485	0.755	0.731	0.747	0.731	0.747	0.755	0.744	0.0122
	Calcium (Ca)	mg/kg	-	-	304,000	372,000	343,000	304,000	343,000	372,000	339,667	34,122	54,500	62,400	59,700	54,500	59,700	62,400	58,867	4,015
	Chromium (Cr)	mg/kg	37	90	7.55	7.78	6.07	6.07	7.55	7.78	7.13	0.928	10.5	10.3	9.95	9.95	10.3	10.5	10.2	0.278
	Cobalt (Co)	mg/kg	-	-	1.20	1.39	0.970	0.970	1.20	1.39	1.19	0.210	5.57	5.84	5.67	5.57	5.67	5.84	5.69	0.137
	Copper (Cu)	mg/kg	36	197	1.89	2.19	1.54	1.54	1.89	2.19	1.87	0.325	13.6	13.6	13.2	13.2	13.6	13.6	13.5	0.231
	Iron (Fe)	mg/kg	21,200	43,766	3,550	3,900	2,770	2,770	3,550	3,900	3,407	578	13,800	15,700	14,900	13,800	14,900	15,700	14,800	953.9
	Lead (Pb)	mg/kg	35	91.3	2.26	2.68	1.93	1.93	2.26	2.68	2.29	0.376	8.85	9.18	8.62	8.62	8.85	9.18	8.88	0.281
	Lithium (Li)	mg/kg	-	-	8.50	9.90	7.10	7.10	8.50	9.90	8.50	1.40	8.60	9.80	8.40	8.40	8.60	9.80	8.93	0.757
	Magnesium (Mg)	mg/kg	-	-	46,600	51,300	37,500	37,500	46,600	51,300	45,133	7,016	11,300	11,900	10,600	10,600	11,300	11,900	11,267	651
	Manganese (Mn)	mg/kg	460	1,100	120	138	108	108	120	138	122	15.1	497	449	469	449	469	497	472	24.1
	Mercury (Hg)	mg/kg	0.17	0.49	0.00810	0.00800	0.00750	0.00750	0.00800	0.00810	0.00787	0.000321	0.0353	0.0306	0.0307	0.0306	0.0307	0.0353	0.0322	0.00269
	Molybdenum (Mo)	mg/kg	25	23,000	0.460	0.490	0.340	0.340	0.460	0.490	0.430	0.0794	1.46	1.62	1.47	1.46	1.47	1.62	1.52	0.0896
	Nickel (Ni)	mg/kg	16	75	8.04	9.36	6.56	6.56	8.04	9.36	7.99	1.40	19.2	19.3	18.8	18.8	19.2	19.3	19.1	0.265
	Phosphorus (P)	mg/kg	-	-	329	505	405	329	405	505	413	88.3	1,320	1,320	1,310	1,310	1,320	1,320	1,317	5.77
	Potassium (K)	mg/kg	-	-	570	660	460	460	570	660	563	100	1,280	1,260	1,230	1,230	1,260	1,280	1,257	25.2
	Selenium (Se)	mg/kg	2.0	-	0.320	0.390	0.280	0.280	0.320	0.390	0.330	0.0557	0.990	0.830	0.750	0.750	0.830	0.990	0.857	0.122
	Silver (Ag)	mg/kg	0.50	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0.150	0.130	0.130	0.130	0.130	0.150	0.137	0.0115
	Sodium (Na)	mg/kg	-	-	196	212	187	187	196	212	198	12.7	74.0	75.0	71.0	71.0	74.0	75.0	73.3	2.08
	Strontium (Sr)	mg/kg	-	-	141	167	155	141	155	167	154	13.0	59.4	68.1	68.8	59.4	68.1	68.8	65.4	5.24
	Sulfur (S)	mg/kg	-	-	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	-	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	-
	Thallium (Tl)	mg/kg	-	-	0.0570	0.0700	<0.05	<0.05	0.0570	0.0700	0.0590	0.00867	0.196	0.189	0.204	0.189	0.196	0.204	0.196	0.00751
	Tin (Sn)	mg/kg	-	-	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	-
	Titanium (Ti)	mg/kg	-	-	18.4	25.3	15.9	15.9	18.4	25.3	19.9	4.87	7.00	6.60	6.10	6.10	6.60	7.00	6.57	0.451
	Tungsten (W)	mg/kg	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
	Uranium (U)	mg/kg	-	-	0.622	0.694	0.625	0.622	0.625	0.694	0.647	0.0407	0.870	0.819	0.837	0.819	0.837	0.870	0.842	0.0259
Vanadium (V)	mg/kg	-	-	7.66	8.15	5.75	5.75	7.66	8.15	7.19	1.27	21.5	22.2	23.3	21.5	22.2	23.3	22.3	0.907	
Zinc (Zn)	mg/kg	123	315	41.3	44.9	36.5	36.5	41.3	44.9	40.9	4.21	90.2	90.9	93.0	90.2	90.9	93.0	91.4	1.46	
Zirconium (Zr)	mg/kg	-	-	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	-	

Value > Lower Working Sediment Quality Guideline (WSQG).
 Value > Upper Working Sediment Quality Guideline (WSQG, or alert concentration in the case of Selenium).

Notes: All summary stats calculated to 3 significant figures. "-" indicates no data available.

Table F.1: Sediment Quality Samples and Summary Statistics for Lotic Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Parameter	Units	BC Sediment Quality Guidelines		RG_HENUP								RG_FO26							
		Lower SQG	Upper SQG	RG_HENUP-1	RG_HENUP-2	RG_HENUP-3	Minimum	Median	Maximum	Mean	Standard Deviation	RG_FO26-1	RG_FO26-2	RG_FO26-3	Minimum	Median	Maximum	Mean	Standard Deviation
				12-Sep-22	12-Sep-22	12-Sep-22						16-Sep-22	16-Sep-22	16-Sep-22					
Acenaphthene	mg/kg	0.0067	0.089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Acenaphthylene	mg/kg	0.0059	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Acridine	mg/kg	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Anthracene	mg/kg	0.047	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Benz(a)anthracene	mg/kg	0.032	0.39	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Benzo(a)pyrene	mg/kg	0.032	0.78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Benzo(b&j)fluoranthene	mg/kg	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Benzo(b+j+k)fluoranthene	mg/kg	-	-	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	-	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	-
Benzo(g,h,i)perylene	mg/kg	0.17	3.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Benzo(k)fluoranthene	mg/kg	0.24	13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Chrysene	mg/kg	0.057	0.86	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	0.111	0.0830	0.0920	0.0830	0.0920	0.111	0.0953	0.0143
Dibenz(a,h)anthracene	mg/kg	0.0062	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Fluoranthene	mg/kg	0.11	2.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Fluorene	mg/kg	0.021	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	0.0540	<0.05	<0.05	<0.05	<0.05	0.0540	0.0513	-
Indeno(1,2,3-c,d)pyrene	mg/kg	0.20	3.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
1-Methylnaphthalene	mg/kg	-	-	0.0360	0.0650	0.0920	0.0360	0.0650	0.0920	0.0643	0.0280	0.299	0.195	0.191	0.191	0.195	0.299	0.228	0.0612
2-Methylnaphthalene	mg/kg	0.020	0.201	0.0590	0.101	0.156	0.0590	0.101	0.156	0.105	0.0486	0.497	0.329	0.302	0.302	0.329	0.497	0.376	0.106
Naphthalene	mg/kg	0.035	0.39	0.0210	0.0330	0.0530	0.0210	0.0330	0.0530	0.0357	0.0162	0.195	0.139	0.140	0.139	0.140	0.195	0.158	0.0320
Phenanthrene	mg/kg	0.042	0.52	<0.05	<0.05	0.0610	<0.05	<0.05	0.0610	0.0537	-	0.365	0.270	0.317	0.270	0.317	0.365	0.317	0.0475
Pyrene	mg/kg	0.053	0.88	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Quinoline	mg/kg	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
d12-Chrysene	%	-	-	124	124	123	123	124	124	124	0.577	119	122	124	119	122	124	122	2.52
d8-Naphthalene	%	-	-	113	112	113	112	113	113	113	0.577	107	114	116	107	114	116	112	4.73
d10-Phenanthrene	%	-	-	115	116	115	115	115	116	115	0.577	112	116	115	112	115	116	114	2.08
B(a)P Total Potency Equivalent	mg/kg	-	-	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	-	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	-
IACR (CCME)	mg/kg	-	-	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	-	0.630	0.620	0.620	0.620	0.620	0.630	0.623	0.00577

Value > Lower Working Sediment Quality Guideline (WSQG).
 Value > Upper Working Sediment Quality Guideline (WSQG, or alert concentration in the case of Selenium).
 Notes: All summary stats calculated to 3 significant figures. "-" indicates no data available.

Table F.1: Sediment Quality Samples and Summary Statistics for Lotic Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Parameter	Units	BC Sediment Quality Guidelines		RG_FOUKI					RG_FOUKI					
		Lower SQG	Upper SQG	RG_FOUKI-1	RG_FOUKI-2	RG_FOUKI-3	RG_FOUKI-4	RG_FOUKI-5	Minimum	Median	Maximum	Mean	Standard Deviation	
				13-Sep-22	13-Sep-22	13-Sep-22	13-Sep-22	13-Sep-22						
Physical Tests	Moisture	%	-	-	66.7	45.9	87.2	85.5	71.7	45.9	71.7	87.2	71.4	16.7
	pH(1:2 Soil:Water)	pH	-	-	7.92	8.27	7.05	7.80	7.87	7.05	7.87	8.27	7.78	0.448
Particle Size	% Gravel (>2 mm)	%	-	-	1.80	7.80	<1	<1	3.30	<1	1.80	7.80	2.98	2.85
	% Sand (2.00 mm - 1.00 mm)	%	-	-	<1	4.60	1.50	2.00	2.30	<1	2.00	4.60	2.28	1.33
	% Sand (1.00 mm - 0.50 mm)	%	-	-	3.80	10.7	2.40	2.00	3.90	2.00	3.80	10.7	4.56	3.53
	% Sand (0.50 mm - 0.25 mm)	%	-	-	15.9	11.8	4.10	3.70	10.5	3.70	10.5	15.9	9.20	5.23
	% Sand (0.25 mm - 0.125 mm)	%	-	-	18.7	11.8	5.30	8.80	11.4	5.30	11.4	18.7	11.2	4.93
	% Sand (0.125 mm - 0.063 mm)	%	-	-	12.1	9.80	7.10	11.2	12.0	7.10	11.2	12.1	10.4	2.08
	% Silt (0.063 mm - 0.0312 mm)	%	-	-	19.7	17.3	32.5	29.6	22.8	17.3	22.8	32.5	24.4	6.48
	% Silt (0.0312 mm - 0.004 mm)	%	-	-	22.3	21.1	37.5	34.3	26.6	21.1	26.6	37.5	28.4	7.27
	% Clay (<4 µm)	%	-	-	4.80	5.10	9.60	8.40	7.20	4.80	7.20	9.60	7.02	2.07
Organic Carbon	Total Organic Carbon	%	-	-	9.63	8.53	16.6	14.2	12.5	8.53	12.5	16.6	12.3	3.30
Metals	Aluminum (Al)	mg/kg	-	-	6,700	6,710	8,500	4,680	4,430	4,430	6,700	8,500	6,204	1,677
	Antimony (Sb)	mg/kg	-	-	0.630	0.740	0.760	0.570	0.560	0.560	0.630	0.760	0.652	0.0936
	Arsenic (As)	mg/kg	5.9	17	5.51	5.72	4.80	4.70	4.43	4.43	4.80	5.72	5.03	0.554
	Barium (Ba)	mg/kg	-	-	247	208	299	268	176	176	247	299	240	48.6
	Beryllium (Be)	mg/kg	-	-	0.560	0.620	0.630	0.500	0.530	0.500	0.560	0.630	0.568	0.0563
	Bismuth (Bi)	mg/kg	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
	Boron (B)	mg/kg	-	-	6.40	7.00	8.30	6.60	5.20	5.20	6.60	8.30	6.70	1.12
	Cadmium (Cd)	mg/kg	0.60	3.5	1.87	2.28	3.09	2.60	2.11	1.87	2.28	3.09	2.39	0.473
	Calcium (Ca)	mg/kg	-	-	86,000	80,600	104,000	92,100	69,100	69,100	86,000	104,000	86,360	12,994
	Chromium (Cr)	mg/kg	37	90	12.6	12.4	13.4	9.73	8.87	8.87	12.4	13.4	11.4	1.98
	Cobalt (Co)	mg/kg	-	-	8.71	7.94	9.12	8.60	6.82	6.82	8.60	9.12	8.24	0.899
	Copper (Cu)	mg/kg	36	197	15.3	16.5	18.8	16.1	13.7	13.7	16.1	18.8	16.1	1.86
	Iron (Fe)	mg/kg	21,200	43,766	15,500	17,800	16,800	13,400	13,000	13,000	15,500	17,800	15,300	2,088
	Lead (Pb)	mg/kg	35	91.3	9.37	11.8	9.95	9.00	8.54	8.54	9.37	11.8	9.73	1.27
	Lithium (Li)	mg/kg	-	-	10.7	11.6	9.60	8.10	7.00	7.00	9.60	11.6	9.40	1.87
	Magnesium (Mg)	mg/kg	-	-	12,600	12,200	14,600	12,200	11,500	11,500	12,200	14,600	12,620	1,176
	Manganese (Mn)	mg/kg	460	1,100	609	736	926	949	624	609	736	949	769	162
	Mercury (Hg)	mg/kg	0.17	0.49	0.0410	0.0418	0.0384	0.0388	0.0363	0.0363	0.0388	0.0418	0.0393	0.00219
	Molybdenum (Mo)	mg/kg	25	23,000	1.83	2.46	2.29	1.85	1.66	1.66	1.85	2.46	2.02	0.340
	Nickel (Ni)	mg/kg	16	75	45.9	53.6	60.4	52.2	43.6	43.6	52.2	60.4	51.1	6.66
	Phosphorus (P)	mg/kg	-	-	1,390	1,050	1,600	776	1,310	776	1,310	1,600	1,225	319
	Potassium (K)	mg/kg	-	-	1,460	1,350	1,620	1,010	940	940	1,350	1,620	1,276	292
	Selenium (Se)	mg/kg	2.0	-	2.80	21.2	5.04	3.56	3.22	2.80	3.56	21.2	7.16	7.89
	Silver (Ag)	mg/kg	0.50	-	0.190	0.220	0.220	0.210	0.180	0.180	0.210	0.220	0.204	0.0182
	Sodium (Na)	mg/kg	-	-	89.0	90.0	107	86.0	74.0	74.0	89.0	107	89.2	11.8
	Strontium (Sr)	mg/kg	-	-	83.8	84.7	99.6	76.7	67.8	67.8	83.8	99.6	82.5	11.7
	Sulfur (S)	mg/kg	-	-	1,200	1,100	<1,000	1,300	<1,000	<1000	1,100	1,300	1,120	98.0
	Thallium (Tl)	mg/kg	-	-	0.197	0.199	0.203	0.148	0.146	0.146	0.197	0.203	0.179	0.0289
	Tin (Sn)	mg/kg	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	-
	Titanium (Ti)	mg/kg	-	-	21.6	21.7	17.1	21.1	15.8	15.8	21.1	21.7	19.5	2.80
	Tungsten (W)	mg/kg	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
	Uranium (U)	mg/kg	-	-	1.40	1.24	1.31	1.28	1.11	1.11	1.28	1.40	1.27	0.106
Vanadium (V)	mg/kg	-	-	28.0	27.0	28.2	21.1	19.7	19.7	27.0	28.2	24.8	4.07	
Zinc (Zn)	mg/kg	123	315	153	184	240	186	157	153	184	240	184	34.7	
Zirconium (Zr)	mg/kg	-	-	1.00	1.10	1.00	1.10	1.00	1.00	1.00	1.10	1.04	0.0548	

Value > Lower Working Sediment Quality Guideline (WSQG).
 Value > Upper Working Sediment Quality Guideline (WSQG), or alert concentration in the case of Selenium).

Notes: All summary stats calculated to 3 significant figures. "-" indicates no data available.

Table F.1: Sediment Quality Samples and Summary Statistics for Lotic Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Parameter	Units	BC Sediment Quality Guidelines		RG_FOUKI					RG_FOUKI					
		Lower SQG	Upper SQG	RG_FOUKI-1	RG_FOUKI-2	RG_FOUKI-3	RG_FOUKI-4	RG_FOUKI-5	Minimum	Median	Maximum	Mean	Standard Deviation	
				13-Sep-22	13-Sep-22	13-Sep-22	13-Sep-22	13-Sep-22						
Polycyclic Aromatic Hydrocarbons	Acenaphthene	mg/kg	0.0067	0.089	0.117	0.0790	0.375	0.326	0.157	0.0790	0.157	0.375	0.211	0.132
	Acenaphthylene	mg/kg	0.0059	0.13	<0.05	<0.05	<0.074	<0.073	<0.05	<0.05	<0.05	<0.074	<0.05	-
	Acridine	mg/kg	-	-	0.202	0.145	0.674	0.583	0.292	0.145	0.292	0.674	0.379	0.236
	Anthracene	mg/kg	0.047	0.25	<0.05	<0.05	<0.074	<0.073	<0.05	<0.05	<0.05	<0.074	<0.05	-
	Benz(a)anthracene	mg/kg	0.032	0.39	0.0510	<0.05	0.163	0.147	0.0740	<0.05	0.0740	0.163	0.0970	0.0557
	Benzo(a)pyrene	mg/kg	0.032	0.78	<0.05	<0.05	0.140	0.123	0.0610	<0.05	0.0610	0.140	0.0848	0.0428
	Benzo(b&j)fluoranthene	mg/kg	-	-	0.116	0.0840	0.368	0.290	0.165	0.0840	0.165	0.368	0.205	0.120
	Benzo(b+j+k)fluoranthene	mg/kg	-	-	0.116	0.0840	0.368	0.290	0.165	0.0840	0.165	0.368	0.205	0.120
	Benzo(g,h,i)perylene	mg/kg	0.17	3.2	0.0620	<0.05	0.180	0.150	0.0820	<0.05	0.0820	0.180	0.105	0.0562
	Benzo(k)fluoranthene	mg/kg	0.24	13	<0.05	<0.05	<0.074	<0.073	<0.05	<0.05	<0.05	<0.074	<0.05	-
	Chrysene	mg/kg	0.057	0.86	0.298	0.187	0.887	0.668	0.383	0.187	0.383	0.887	0.485	0.287
	Dibenz(a,h)anthracene	mg/kg	0.0062	0.14	<0.05	<0.05	0.0820	0.0730	<0.05	<0.05	<0.05	0.0820	0.0610	0.00509
	Fluoranthene	mg/kg	0.11	2.4	<0.05	<0.05	0.115	0.110	0.0550	<0.05	0.0550	0.115	0.0760	0.0346
	Fluorene	mg/kg	0.021	0.14	0.310	0.219	1.03	0.878	0.444	0.219	0.444	1.03	0.576	0.358
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.20	3.2	<0.05	<0.05	<0.074	<0.073	<0.05	<0.05	<0.05	<0.074	<0.05	-
	1-Methylnaphthalene	mg/kg	-	-	1.26	0.869	3.97	3.48	1.73	0.869	1.73	3.97	2.26	1.38
	2-Methylnaphthalene	mg/kg	0.020	0.201	2.28	1.56	7.28	6.29	3.12	1.56	3.12	7.28	4.11	2.53
	Naphthalene	mg/kg	0.035	0.39	0.721	0.502	2.29	2.02	0.982	0.502	0.982	2.29	1.30	0.802
	Phenanthrene	mg/kg	0.042	0.52	1.04	0.668	3.03	2.72	1.38	0.668	1.38	3.03	1.77	1.05
	Pyrene	mg/kg	0.053	0.88	0.0840	0.0570	0.248	0.228	0.114	0.0570	0.114	0.248	0.146	0.0865
	Quinoline	mg/kg	-	-	<0.05	<0.05	<0.074	<0.073	<0.05	<0.05	<0.05	<0.074	<0.05	-
d12-Chrysene	%	-	-	124	119	127	112	128	112	124	128	122	6.60	
d8-Naphthalene	%	-	-	116	109	126	115	120	109	116	126	117	6.30	
d10-Phenanthrene	%	-	-	114	109	112	127	119	109	114	127	116	7.05	
B(a)P Total Potency Equivalent	mg/kg	-	-	0.0750	0.0680	0.293	0.255	0.120	0.0680	0.120	0.293	0.162	0.105	
IACR (CCME)	mg/kg	-	-	1.37	1.04	4.22	3.49	1.89	1.04	1.89	4.22	2.40	1.38	

Value > Lower Working Sediment Quality Guideline (WSQG).
 Value > Upper Working Sediment Quality Guideline (WSQG, or alert concentration in the case of Selenium).

Notes: All summary stats calculated to 3 significant figures. "-" indicates no data available.

Table F.1: Sediment Quality Samples and Summary Statistics for Lotic Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Parameter	Units	BC Sediment Quality Guidelines		RG_FOBKS					RG_FOBKS					
		Lower SQG	Upper SQG	RG_FOBKS-1	RG_FOBKS-2	RG_FOBKS-3	RG_FOBKS-4	RG_FOBKS-5	Minimum	Median	Maximum	Mean	Standard Deviation	
				12-Sep-22	13-Sep-22	13-Sep-22	13-Sep-22	13-Sep-22						
Physical Tests	Moisture	%	-	-	25.4	27.8	37.0	32.9	47.3	25.4	32.9	47.3	34.1	8.65
	pH(1:2 Soil:Water)	pH	-	-	8.14	8.23	8.26	8.19	8.23	8.14	8.23	8.26	8.21	0.0464
Particle Size	% Gravel (>2 mm)	%	-	-	12.6	10.3	6.40	4.70	<1	<1	6.40	12.6	7.00	3.67
	% Sand (2.00 mm - 1.00 mm)	%	-	-	16.0	15.5	5.30	2.80	14.5	2.80	14.5	16.0	10.8	6.27
	% Sand (1.00 mm - 0.50 mm)	%	-	-	14.2	29.8	8.10	6.40	25.6	6.40	14.2	29.8	16.8	10.5
	% Sand (0.50 mm - 0.25 mm)	%	-	-	14.0	18.5	24.5	29.5	11.0	11.0	18.5	29.5	19.5	7.56
	% Sand (0.25 mm - 0.125 mm)	%	-	-	11.2	7.80	19.4	24.4	9.40	7.80	11.2	24.4	14.4	7.14
	% Sand (0.125 mm - 0.063 mm)	%	-	-	7.30	5.20	13.3	12.9	8.90	5.20	8.90	13.3	9.52	3.52
	% Silt (0.063 mm - 0.0312 mm)	%	-	-	10.0	4.80	9.30	7.90	12.3	4.80	9.30	12.3	8.86	2.77
	% Silt (0.0312 mm - 0.004 mm)	%	-	-	12.1	6.10	10.8	8.80	14.9	6.10	10.8	14.9	10.5	3.33
% Clay (<4 µm)	%	-	-	2.60	2.00	2.90	2.60	2.80	2.00	2.60	2.90	2.58	0.349	
Organic Carbon	Total Organic Carbon	%	-	-	5.11	2.79	6.65	3.97	5.20	2.79	5.11	6.65	4.74	1.45
Metals	Aluminum (Al)	mg/kg	-	-	8,730	5,630	4,640	5,000	5,280	4,640	5,280	8,730	5,856	1,647
	Antimony (Sb)	mg/kg	-	-	0.620	0.610	0.630	0.650	0.580	0.580	0.620	0.650	0.618	0.0259
	Arsenic (As)	mg/kg	5.9	17	5.95	5.24	4.75	5.04	4.51	4.51	5.04	5.95	5.10	0.551
	Barium (Ba)	mg/kg	-	-	198	160	200	161	216	160	198	216	187	25.2
	Beryllium (Be)	mg/kg	-	-	0.670	0.580	0.540	0.520	0.500	0.500	0.540	0.670	0.562	0.0672
	Bismuth (Bi)	mg/kg	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
	Boron (B)	mg/kg	-	-	10.0	5.90	<5	<5	<5	<5	<5	10.0	6.18	2.32
	Cadmium (Cd)	mg/kg	0.60	3.5	1.43	1.38	1.44	1.42	1.58	1.38	1.43	1.58	1.45	0.0762
	Calcium (Ca)	mg/kg	-	-	70,600	75,400	63,800	57,900	60,100	57,900	63,800	75,400	65,560	7,311
	Chromium (Cr)	mg/kg	37	90	14.5	10.4	8.19	8.92	9.91	8.19	9.91	14.5	10.4	2.46
	Cobalt (Co)	mg/kg	-	-	5.47	5.06	6.02	5.83	6.01	5.06	5.83	6.02	5.68	0.411
	Copper (Cu)	mg/kg	36	197	12.6	12.4	11.1	12.1	13.3	11.1	12.4	13.3	12.3	0.803
	Iron (Fe)	mg/kg	21,200	43,766	21,300	19,300	13,000	13,700	12,300	12,300	13,700	21,300	15,920	4,090
	Lead (Pb)	mg/kg	35	91.3	7.85	7.07	7.21	7.81	7.50	7.07	7.50	7.85	7.49	0.349
	Lithium (Li)	mg/kg	-	-	11.8	9.50	8.30	9.30	8.60	8.30	9.30	11.8	9.50	1.38
	Magnesium (Mg)	mg/kg	-	-	10,200	10,100	10,400	10,400	11,700	10,100	10,400	11,700	10,560	650
	Manganese (Mn)	mg/kg	460	1,100	468	425	448	437	432	425	437	468	442	16.8
	Mercury (Hg)	mg/kg	0.17	0.49	0.0263	0.0252	0.0319	0.0288	0.0345	0.0252	0.0288	0.0345	0.0293	0.00387
	Molybdenum (Mo)	mg/kg	25	23,000	1.65	1.33	1.22	1.26	1.33	1.22	1.33	1.65	1.36	0.170
	Nickel (Ni)	mg/kg	16	75	32.7	30.3	33.9	35.5	36.1	30.3	33.9	36.1	33.7	2.32
	Phosphorus (P)	mg/kg	-	-	3,850	1,130	1,040	1,120	986	986	1,120	3,850	1,625	1,245
	Potassium (K)	mg/kg	-	-	2,450	1,430	1,120	1,160	1,290	1,120	1,290	2,450	1,490	550
	Selenium (Se)	mg/kg	2.0	-	0.970	0.900	1.23	1.01	1.74	0.900	1.01	1.74	1.17	0.342
	Silver (Ag)	mg/kg	0.50	-	0.130	0.120	0.120	0.130	0.160	0.120	0.130	0.160	0.132	0.0164
	Sodium (Na)	mg/kg	-	-	113	72.0	68.0	67.0	69.0	67.0	69.0	113	77.8	19.8
	Strontium (Sr)	mg/kg	-	-	98.3	95.8	70.3	68.8	69.0	68.8	70.3	98.3	80.4	15.2
	Sulfur (S)	mg/kg	-	-	<1,000	<1,000	<1,000	<1,000	<1,000	<1000	<1000	<1000	<1000	-
	Thallium (Tl)	mg/kg	-	-	0.208	0.171	0.161	0.180	0.170	0.161	0.171	0.208	0.178	0.0181
	Tin (Sn)	mg/kg	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	-
	Titanium (Ti)	mg/kg	-	-	10.5	6.20	4.40	4.30	8.00	4.30	6.20	10.5	6.68	2.62
	Tungsten (W)	mg/kg	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
	Uranium (U)	mg/kg	-	-	1.60	1.02	0.966	0.982	0.979	0.966	0.982	1.60	1.11	0.275
Vanadium (V)	mg/kg	-	-	39.4	28.7	22.1	23.5	25.1	22.1	25.1	39.4	27.8	6.96	
Zinc (Zn)	mg/kg	123	315	129	121	122	126	134	121	126	134	126	5.32	
Zirconium (Zr)	mg/kg	-	-	1.20	<1	<1	<1	<1	<1	<1	1.20	1.04	-	

Value > Lower Working Sediment Quality Guideline (WSQG).
 Value > Upper Working Sediment Quality Guideline (WSQG, or alert concentration in the case of Selenium).

Notes: All summary stats calculated to 3 significant figures. "-" indicates no data available.

Table F.1: Sediment Quality Samples and Summary Statistics for Lotic Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Parameter	Units	BC Sediment Quality Guidelines		RG_FOBKS					RG_FOBKS					
		Lower SQG	Upper SQG	RG_FOBKS-1	RG_FOBKS-2	RG_FOBKS-3	RG_FOBKS-4	RG_FOBKS-5	Minimum	Median	Maximum	Mean	Standard Deviation	
				12-Sep-22	13-Sep-22	13-Sep-22	13-Sep-22	13-Sep-22						
Polycyclic Aromatic Hydrocarbons	Acenaphthene	mg/kg	0.0067	0.089	<0.05	<0.05	<0.05	<0.05	0.0870	<0.05	<0.05	0.0870	0.0574	-
	Acenaphthylene	mg/kg	0.0059	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Acridine	mg/kg	-	-	<0.05	<0.05	0.0670	0.0620	0.140	<0.05	0.0620	0.140	0.0738	0.0377
	Anthracene	mg/kg	0.047	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benz(a)anthracene	mg/kg	0.032	0.39	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benzo(a)pyrene	mg/kg	0.032	0.78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benzo(b&j)fluoranthene	mg/kg	-	-	<0.05	<0.05	<0.05	<0.05	0.0820	<0.05	<0.05	0.0820	0.0564	-
	Benzo(b+j+k)fluoranthene	mg/kg	-	-	<0.075	<0.075	<0.075	<0.075	0.0820	<0.075	<0.075	0.0820	0.0764	-
	Benzo(g,h,i)perylene	mg/kg	0.17	3.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benzo(k)fluoranthene	mg/kg	0.24	13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Chrysene	mg/kg	0.057	0.86	<0.05	0.0540	0.0970	0.110	0.189	<0.05	0.0970	0.189	0.100	0.0572
	Dibenz(a,h)anthracene	mg/kg	0.0062	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Fluoranthene	mg/kg	0.11	2.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Fluorene	mg/kg	0.021	0.14	<0.05	<0.05	0.111	0.0990	0.258	<0.05	0.0990	0.258	0.114	0.0766
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.20	3.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	1-Methylnaphthalene	mg/kg	-	-	0.234	0.240	0.498	0.460	1.10	0.234	0.460	1.10	0.506	0.353
	2-Methylnaphthalene	mg/kg	0.020	0.201	0.395	0.391	0.857	0.790	1.92	0.391	0.790	1.92	0.871	0.625
	Naphthalene	mg/kg	0.035	0.39	0.137	0.139	0.286	0.262	0.661	0.137	0.262	0.661	0.297	0.215
	Phenanthrene	mg/kg	0.042	0.52	0.186	0.192	0.396	0.395	0.850	0.186	0.395	0.850	0.404	0.270
	Pyrene	mg/kg	0.053	0.88	<0.05	<0.05	<0.05	<0.05	0.0620	<0.05	<0.05	0.0620	0.0524	-
	Quinoline	mg/kg	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
d12-Chrysene	%	-	-	125	130	121	127	123	121	125	130	125	3.49	
d8-Naphthalene	%	-	-	117	122	114	129	120	114	120	129	120	5.68	
d10-Phenanthrene	%	-	-	119	122	115	129	117	115	119	129	120	5.46	
B(a)P Total Potency Equivalent	mg/kg	-	-	<0.065	<0.065	<0.065	<0.065	0.0680	<0.065	<0.065	0.0680	0.0656	-	
IACR (CCME)	mg/kg	-	-	<0.6	0.600	0.620	0.630	1.02	<0.6	0.620	1.02	0.694	0.189	

Value > Lower Working Sediment Quality Guideline (WSQG).
 Value > Upper Working Sediment Quality Guideline (WSQG, or alert concentration in the case of Selenium).

Notes: All summary stats calculated to 3 significant figures. "-" indicates no data available.

Table F.1: Sediment Quality Samples and Summary Statistics for Lotic Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Parameter	Units	BC Sediment Quality Guidelines		RG_SCOUTDS					RG_SCOUTDS					
		Lower SQG	Upper SQG	RG_SCOUTDS-1	RG_SCOUTDS-2	RG_SCOUTDS-3	RG_SCOUTDS-4	RG_SCOUTDS-5	Minimum	Median	Maximum	Mean	Standard Deviation	
				14-Sep-22	14-Sep-22	14-Sep-22	14-Sep-22	14-Sep-22						
Physical Tests	Moisture	%	-	-	77.5	85.3	78.0	84.3	69.7	69.7	78.0	85.3	79.0	8.65
	pH(1:2 Soil:Water)	pH	-	-	8.00	7.93	8.10	8.20	8.15	7.93	8.10	8.20	8.08	0.0464
Particle Size	% Gravel (>2 mm)	%	-	-	3.90	7.80	<1	1.20	5.80	<1	3.90	7.80	3.94	3.67
	% Sand (2.00 mm - 1.00 mm)	%	-	-	3.90	4.00	7.20	2.60	2.70	2.60	3.90	7.20	4.08	6.27
	% Sand (1.00 mm - 0.50 mm)	%	-	-	9.20	5.70	12.5	9.30	6.70	5.70	9.20	12.5	8.68	10.5
	% Sand (0.50 mm - 0.25 mm)	%	-	-	14.9	5.20	11.3	24.9	16.7	5.20	14.9	24.9	14.6	7.56
	% Sand (0.25 mm - 0.125 mm)	%	-	-	11.5	8.30	10.8	11.4	16.1	8.30	11.4	16.1	11.6	7.14
	% Sand (0.125 mm - 0.063 mm)	%	-	-	11.5	11.0	11.3	9.90	13.8	9.90	11.3	13.8	11.5	3.52
	% Silt (0.063 mm - 0.0312 mm)	%	-	-	19.2	24.4	19.5	16.7	16.6	16.6	19.2	24.4	19.3	2.77
	% Silt (0.0312 mm - 0.004 mm)	%	-	-	21.0	27.1	21.9	19.5	17.6	17.6	21.0	27.1	21.4	3.33
% Clay (<4 µm)	%	-	-	4.90	6.50	5.50	4.50	4.00	4.00	4.90	6.50	5.08	0.349	
Organic Carbon	Total Organic Carbon	%	-	-	8.76	11.1	8.40	8.48	7.26	7.26	8.48	11.1	8.80	1.45
Metals	Aluminum (Al)	mg/kg	-	-	4,850	3,560	4,990	4,960	4,610	3,560	4,850	4,990	4,594	1,647
	Antimony (Sb)	mg/kg	-	-	0.540	0.390	0.490	0.520	0.480	0.390	0.490	0.540	0.484	0.0259
	Arsenic (As)	mg/kg	5.9	17	4.79	4.02	4.68	4.78	4.43	4.02	4.68	4.79	4.54	0.551
	Barium (Ba)	mg/kg	-	-	166	180	184	190	154	154	180	190	175	25.2
	Beryllium (Be)	mg/kg	-	-	0.490	0.410	0.520	0.470	0.470	0.410	0.470	0.520	0.472	0.0672
	Bismuth (Bi)	mg/kg	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
	Boron (B)	mg/kg	-	-	6.70	5.50	5.50	5.40	5.10	5.10	5.50	6.70	5.64	2.32
	Cadmium (Cd)	mg/kg	0.60	3.5	2.10	2.79	2.07	2.10	1.85	1.85	2.10	2.79	2.18	0.0762
	Calcium (Ca)	mg/kg	-	-	68,900	83,400	64,600	64,700	68,000	64,600	68,000	83,400	69,920	7,311
	Chromium (Cr)	mg/kg	37	90	9.71	7.71	9.39	9.85	9.29	7.71	9.39	9.85	9.19	2.46
	Cobalt (Co)	mg/kg	-	-	7.07	7.83	7.30	7.69	6.78	6.78	7.30	7.83	7.33	0.411
	Copper (Cu)	mg/kg	36	197	13.2	14.0	14.6	13.9	12.8	12.8	13.9	14.6	13.7	0.803
	Iron (Fe)	mg/kg	21,200	43,766	15,700	11,700	14,700	14,500	13,900	11,700	14,500	15,700	14,100	4,090
	Lead (Pb)	mg/kg	35	91.3	8.30	8.51	8.51	8.69	8.03	8.03	8.51	8.69	8.41	0.349
	Lithium (Li)	mg/kg	-	-	7.80	6.10	8.00	8.00	8.00	6.10	8.00	8.00	7.58	1.38
	Magnesium (Mg)	mg/kg	-	-	11,200	11,200	9,590	9,860	10,800	9,590	10,800	11,200	10,530	650
	Manganese (Mn)	mg/kg	460	1,100	590	659	570	607	514	514	590	659	588	16.8
	Mercury (Hg)	mg/kg	0.17	0.49	0.0331	0.0340	0.0350	0.0349	0.0324	0.0324	0.0340	0.0350	0.0339	0.00387
	Molybdenum (Mo)	mg/kg	25	23,000	1.55	1.45	1.51	1.50	1.38	1.38	1.50	1.55	1.48	0.170
	Nickel (Ni)	mg/kg	16	75	45.8	54.6	47.7	49.4	42.4	42.4	47.7	54.6	48.0	2.32
	Phosphorus (P)	mg/kg	-	-	1,850	1,050	1,420	1,440	1,430	1,050	1,430	1,850	1,438	1,245
	Potassium (K)	mg/kg	-	-	1,120	800	1,140	1,090	940	800	1,090	1,140	1,018	550
	Selenium (Se)	mg/kg	2.0	-	2.75	3.39	2.20	1.74	1.93	1.74	2.20	3.39	2.40	0.342
	Silver (Ag)	mg/kg	0.50	-	0.160	0.190	0.170	0.170	0.150	0.150	0.170	0.190	0.168	0.0164
	Sodium (Na)	mg/kg	-	-	80.0	74.0	76.0	80.0	72.0	72.0	76.0	80.0	76.4	19.8
	Strontium (Sr)	mg/kg	-	-	66.9	74.2	67.4	76.5	66.4	66.4	74.2	76.5	70.3	15.2
	Sulfur (S)	mg/kg	-	-	1,100	1,400	<1,000	<1,000	<1,000	<1,000	<1,000	1,400	1,100	-
	Thallium (Tl)	mg/kg	-	-	0.163	0.119	0.147	0.158	0.138	0.119	0.147	0.163	0.145	0.0181
	Tin (Sn)	mg/kg	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	-
	Titanium (Ti)	mg/kg	-	-	15.6	14.2	18.2	16.0	12.5	12.5	15.6	18.2	15.3	2.62
	Tungsten (W)	mg/kg	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
	Uranium (U)	mg/kg	-	-	1.13	1.15	1.11	1.11	1.03	1.03	1.11	1.15	1.11	0.275
Vanadium (V)	mg/kg	-	-	21.8	15.3	21.9	21.4	19.6	15.3	21.4	21.9	20.0	6.96	
Zinc (Zn)	mg/kg	123	315	159	194	165	167	147	147	165	194	166	5.32	
Zirconium (Zr)	mg/kg	-	-	1.50	1.30	<1	<1	<1	<1	<1	1.50	1.16	-	

Value > Lower Working Sediment Quality Guideline (WSQG).
 Value > Upper Working Sediment Quality Guideline (WSQG, or alert concentration in the case of Selenium).

Notes: All summary stats calculated to 3 significant figures. "-" indicates no data available.

Table F.1: Sediment Quality Samples and Summary Statistics for Lotic Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Parameter	Units	BC Sediment Quality Guidelines		RG_SCOUTDS					RG_SCOUTDS					
		Lower SQG	Upper SQG	RG_SCOUTDS-1	RG_SCOUTDS-2	RG_SCOUTDS-3	RG_SCOUTDS-4	RG_SCOUTDS-5	Minimum	Median	Maximum	Mean	Standard Deviation	
				14-Sep-22	14-Sep-22	14-Sep-22	14-Sep-22	14-Sep-22						
Polycyclic Aromatic Hydrocarbons	Acenaphthene	mg/kg	0.0067	0.089	0.130	0.262	0.241	0.314	0.121	0.121	0.241	0.314	0.214	-
	Acenaphthylene	mg/kg	0.0059	0.13	<0.05	<0.074	<0.05	<0.069	<0.05	<0.05	<0.05	<0.074	<0.05	-
	Acridine	mg/kg	-	-	0.224	0.452	0.448	0.572	0.231	0.224	0.448	0.572	0.385	0.0377
	Anthracene	mg/kg	0.047	0.25	<0.05	<0.074	<0.05	<0.069	<0.05	<0.05	<0.05	<0.074	<0.05	-
	Benz(a)anthracene	mg/kg	0.032	0.39	0.0590	0.129	0.118	0.146	0.0610	0.0590	0.118	0.146	0.103	-
	Benzo(a)pyrene	mg/kg	0.032	0.78	0.0510	0.0980	0.100	0.116	<0.05	<0.05	0.0980	0.116	0.0830	-
	Benzo(b&j)fluoranthene	mg/kg	-	-	0.142	0.271	0.286	0.389	0.138	0.138	0.271	0.389	0.245	-
	Benzo(b+j+k)fluoranthene	mg/kg	-	-	0.142	0.271	0.286	0.497	0.138	0.138	0.271	0.497	0.267	-
	Benzo(g,h,i)perylene	mg/kg	0.17	3.2	0.0710	0.138	0.149	0.174	0.0620	0.0620	0.138	0.174	0.119	-
	Benzo(k)fluoranthene	mg/kg	0.24	13	<0.05	<0.074	<0.05	0.108	<0.05	<0.05	<0.05	0.108	0.0616	-
	Chrysene	mg/kg	0.057	0.86	0.319	0.676	0.711	0.892	0.273	0.273	0.676	0.892	0.574	0.0572
	Dibenz(a,h)anthracene	mg/kg	0.0062	0.14	<0.05	<0.074	0.0600	0.0720	<0.05	<0.05	0.0550	<0.074	0.0580	-
	Fluoranthene	mg/kg	0.11	2.4	<0.05	0.102	0.112	0.131	<0.05	<0.05	0.102	0.131	0.0890	-
	Fluorene	mg/kg	0.021	0.14	0.343	0.714	0.658	0.811	0.340	0.340	0.658	0.811	0.573	0.0766
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.20	3.2	<0.05	<0.074	<0.05	<0.069	<0.05	<0.05	<0.05	<0.074	<0.05	-
	1-Methylnaphthalene	mg/kg	-	-	1.49	2.79	2.75	3.56	1.40	1.40	2.75	3.56	2.40	0.353
	2-Methylnaphthalene	mg/kg	0.020	0.201	2.62	4.90	4.66	6.22	2.50	2.50	4.66	6.22	4.18	0.625
	Naphthalene	mg/kg	0.035	0.39	0.846	1.58	1.52	2.07	0.785	0.785	1.52	2.07	1.36	0.215
	Phenanthrene	mg/kg	0.042	0.52	1.17	2.26	2.28	3.02	1.14	1.14	2.26	3.02	1.97	0.270
	Pyrene	mg/kg	0.053	0.88	0.0980	0.187	0.192	0.240	0.0930	0.0930	0.187	0.240	0.162	-
	Quinoline	mg/kg	-	-	<0.05	<0.074	<0.05	<0.069	<0.05	<0.05	<0.05	<0.074	<0.05	-
d12-Chrysene	%	-	-	128	83.0	75.1	72.0	114	72.0	83.0	128	94.4	3.49	
d8-Naphthalene	%	-	-	119	76.1	70.9	72.1	120	70.9	76.1	120	91.6	5.68	
d10-Phenanthrene	%	-	-	118	74.8	69.4	68.6	118	68.6	74.8	118	89.8	5.46	
B(a)P Total Potency Equivalent	mg/kg	-	-	0.105	0.190	0.214	0.266	0.0780	0.0780	0.190	0.266	0.171	-	
IACR (CCME)	mg/kg	-	-	1.64	3.10	3.20	4.64	1.53	1.53	3.10	4.64	2.82	0.189	

Value > Lower Working Sediment Quality Guideline (WSQG).
 Value > Upper Working Sediment Quality Guideline (WSQG, or alert concentration in the case of Selenium).
 Notes: All summary stats calculated to 3 significant figures. "-" indicates no data available.

Table F.1: Sediment Quality Samples and Summary Statistics for Lotic Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Parameter	Units	BC Sediment Quality Guidelines		RG_FOBCP					RG_FOBCP					
		Lower SQG	Upper SQG	RG_FOBCP-1	RG_FOBCP-2	RG_FOBCP-3	RG_FOBCP-4	RG_FOBCP-5	Minimum	Median	Maximum	Mean	Standard Deviation	
				14-Sep-22	14-Sep-22	14-Sep-22	14-Sep-22	15-Sep-22						
Physical Tests	Moisture	%	-	-	47.0	32.6	30.4	32.0	42.9	30.4	32.6	47.0	37.0	8.65
	pH(1:2 Soil:Water)	pH	-	-	8.26	8.28	8.16	8.06	8.33	8.06	8.26	8.33	8.22	0.0464
Particle Size	% Gravel (>2 mm)	%	-	-	5.40	1.60	1.90	<1	3.30	<1	1.90	5.40	2.64	3.67
	% Sand (2.00 mm - 1.00 mm)	%	-	-	1.70	2.30	1.40	4.90	1.90	1.40	1.90	4.90	2.44	6.27
	% Sand (1.00 mm - 0.50 mm)	%	-	-	8.40	26.3	12.8	37.3	2.60	2.60	12.8	37.3	17.5	10.5
	% Sand (0.50 mm - 0.25 mm)	%	-	-	19.4	42.6	43.1	35.0	13.2	13.2	35.0	43.1	30.7	7.56
	% Sand (0.25 mm - 0.125 mm)	%	-	-	17.7	11.7	27.1	7.40	26.1	7.40	17.7	27.1	18.0	7.14
	% Sand (0.125 mm - 0.063 mm)	%	-	-	14.8	5.10	6.10	4.80	20.1	4.80	6.10	20.1	10.2	3.52
	% Silt (0.063 mm - 0.0312 mm)	%	-	-	13.2	3.70	3.30	3.40	14.7	3.30	3.70	14.7	7.66	2.77
	% Silt (0.0312 mm - 0.004 mm)	%	-	-	16.0	5.00	4.30	4.30	15.1	4.30	5.00	16.0	8.94	3.33
% Clay (<4 µm)	%	-	-	3.40	1.70	<1	2.10	3.00	<1	2.10	3.40	2.24	0.349	
Organic Carbon	Total Organic Carbon	%	-	-	5.16	2.72	2.31	3.78	4.65	2.31	3.78	5.16	3.72	1.45
Metals	Aluminum (Al)	mg/kg	-	-	5,200	5,400	5,320	7,920	6,370	5,200	5,400	7,920	6,042	1,647
	Antimony (Sb)	mg/kg	-	-	0.590	0.730	0.730	0.890	0.570	0.570	0.730	0.890	0.702	0.0259
	Arsenic (As)	mg/kg	5.9	17	4.62	5.92	6.16	6.45	4.78	4.62	5.92	6.45	5.59	0.551
	Barium (Ba)	mg/kg	-	-	210	200	184	266	215	184	210	266	215	25.2
	Beryllium (Be)	mg/kg	-	-	0.500	0.600	0.630	0.820	0.550	0.500	0.600	0.820	0.620	0.0672
	Bismuth (Bi)	mg/kg	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
	Boron (B)	mg/kg	-	-	5.20	5.10	5.20	8.50	7.50	5.10	5.20	8.50	6.30	2.32
	Cadmium (Cd)	mg/kg	0.60	3.5	1.99	1.37	1.35	1.55	1.84	1.35	1.55	1.99	1.62	0.0762
	Calcium (Ca)	mg/kg	-	-	72,600	44,400	61,900	41,900	71,900	41,900	61,900	72,600	58,540	7,311
	Chromium (Cr)	mg/kg	37	90	9.75	9.89	10.7	13.5	11.9	9.75	10.7	13.5	11.1	2.46
	Cobalt (Co)	mg/kg	-	-	6.65	5.42	5.74	6.18	5.74	5.42	5.74	6.65	5.95	0.411
	Copper (Cu)	mg/kg	36	197	12.5	12.7	11.2	15.1	11.7	11.2	12.5	15.1	12.6	0.803
	Iron (Fe)	mg/kg	21,200	43,766	13,700	16,900	22,400	19,100	12,800	12,800	16,900	22,400	16,980	4,090
	Lead (Pb)	mg/kg	35	91.3	7.15	7.90	7.50	9.09	7.15	7.15	7.50	9.09	7.76	0.349
	Lithium (Li)	mg/kg	-	-	8.30	10.0	7.90	11.3	9.80	7.90	9.80	11.3	9.46	1.38
	Magnesium (Mg)	mg/kg	-	-	10,600	7,810	9,030	6,780	13,300	6,780	9,030	13,300	9,504	650
	Manganese (Mn)	mg/kg	460	1,100	459	437	464	500	465	437	464	500	465	16.8
	Mercury (Hg)	mg/kg	0.17	0.49	0.0339	0.0270	0.0308	0.0281	0.0317	0.0270	0.0308	0.0339	0.0303	0.00387
	Molybdenum (Mo)	mg/kg	25	23,000	1.46	1.47	1.59	1.93	1.24	1.24	1.47	1.93	1.54	0.170
	Nickel (Ni)	mg/kg	16	75	47.1	35.6	34.4	39.9	51.4	34.4	39.9	51.4	41.7	2.32
	Phosphorus (P)	mg/kg	-	-	1,050	1,370	1,370	1,550	1,270	1,050	1,370	1,550	1,322	1,245
	Potassium (K)	mg/kg	-	-	1,310	1,330	1,390	2,170	1,780	1,310	1,390	2,170	1,596	550
	Selenium (Se)	mg/kg	2.0	-	1.87	0.920	0.780	1.07	1.86	0.780	1.07	1.87	1.30	0.342
	Silver (Ag)	mg/kg	0.50	-	0.150	0.140	0.100	0.150	0.150	0.100	0.150	0.150	0.138	0.0164
	Sodium (Na)	mg/kg	-	-	71.0	64.0	72.0	69.0	83.0	64.0	71.0	83.0	71.8	19.8
	Strontium (Sr)	mg/kg	-	-	79.9	98.1	79.2	109	75.7	75.7	79.9	109	88.4	15.2
	Sulfur (S)	mg/kg	-	-	<1,000	<1,000	<1,000	<1,000	<1,000	<1000	<1000	<1000	<1000	-
	Thallium (Tl)	mg/kg	-	-	0.224	0.194	0.187	0.263	0.230	0.187	0.224	0.263	0.220	0.0181
	Tin (Sn)	mg/kg	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	-
	Titanium (Ti)	mg/kg	-	-	7.90	5.80	7.00	9.80	11.5	5.80	7.90	11.5	8.40	2.62
	Tungsten (W)	mg/kg	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
Uranium (U)	mg/kg	-	-	1.07	1.09	1.05	1.25	1.02	1.02	1.07	1.25	1.10	0.275	
Vanadium (V)	mg/kg	-	-	26.3	28.5	30.9	39.5	30.6	26.3	30.6	39.5	31.2	6.96	
Zinc (Zn)	mg/kg	123	315	149	136	132	145	140	132	140	149	140	5.32	
Zirconium (Zr)	mg/kg	-	-	<1	<1	<1	1.00	<1	<1	<1	1.00	1.00	-	

Value > Lower Working Sediment Quality Guideline (WSQG).
 Value > Upper Working Sediment Quality Guideline (WSQG, or alert concentration in the case of Selenium).

Notes: All summary stats calculated to 3 significant figures. "-" indicates no data available.

Table F.1: Sediment Quality Samples and Summary Statistics for Lotic Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Parameter	Units	BC Sediment Quality Guidelines		RG_FOBCP					RG_FOBCP					
		Lower SQG	Upper SQG	RG_FOBCP-1	RG_FOBCP-2	RG_FOBCP-3	RG_FOBCP-4	RG_FOBCP-5	Minimum	Median	Maximum	Mean	Standard Deviation	
				14-Sep-22	14-Sep-22	14-Sep-22	14-Sep-22	15-Sep-22						
Polycyclic Aromatic Hydrocarbons	Acenaphthene	mg/kg	0.0067	0.089	0.0700	<0.05	<0.05	<0.05	0.0590	<0.05	<0.05	0.0700	0.0558	-
	Acenaphthylene	mg/kg	0.0059	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Acridine	mg/kg	-	-	0.125	<0.05	<0.05	<0.05	0.0970	<0.05	<0.05	0.125	0.0744	0.0377
	Anthracene	mg/kg	0.047	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benz(a)anthracene	mg/kg	0.032	0.39	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benzo(a)pyrene	mg/kg	0.032	0.78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benzo(b&j)fluoranthene	mg/kg	-	-	0.0830	<0.05	<0.05	<0.05	0.0750	<0.05	<0.05	0.0830	0.0616	-
	Benzo(b+j+k)fluoranthene	mg/kg	-	-	0.0830	<0.075	<0.075	<0.075	0.0750	<0.075	<0.075	0.0830	0.0766	-
	Benzo(g,h,i)perylene	mg/kg	0.17	3.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benzo(k)fluoranthene	mg/kg	0.24	13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Chrysene	mg/kg	0.057	0.86	0.198	0.0890	0.0780	0.0720	0.178	0.0720	0.0890	0.198	0.123	0.0572
	Dibenz(a,h)anthracene	mg/kg	0.0062	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Fluoranthene	mg/kg	0.11	2.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Fluorene	mg/kg	0.021	0.14	0.181	0.0630	<0.05	<0.05	0.147	<0.05	0.0630	0.181	0.0982	0.0766
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.20	3.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	1-Methylnaphthalene	mg/kg	-	-	0.833	0.336	0.268	0.338	0.720	0.268	0.338	0.833	0.499	0.353
	2-Methylnaphthalene	mg/kg	0.020	0.201	1.37	0.568	0.445	0.561	1.14	0.445	0.568	1.37	0.817	0.625
	Naphthalene	mg/kg	0.035	0.39	0.446	0.202	0.161	0.220	0.369	0.161	0.220	0.446	0.280	0.215
	Phenanthrene	mg/kg	0.042	0.52	0.707	0.304	0.263	0.285	0.630	0.263	0.304	0.707	0.438	0.270
	Pyrene	mg/kg	0.053	0.88	0.0580	<0.05	<0.05	<0.05	0.0530	<0.05	<0.05	0.0580	0.0522	-
	Quinoline	mg/kg	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
d12-Chrysene	%	-	-	109	122	123	123	116	109	122	123	119	3.49	
d8-Naphthalene	%	-	-	113	125	107	123	112	107	113	125	116	5.68	
d10-Phenanthrene	%	-	-	114	120	118	125	111	111	118	125	118	5.46	
B(a)P Total Potency Equivalent	mg/kg	-	-	0.0680	<0.065	<0.065	<0.065	0.0670	<0.065	<0.065	0.0680	0.0660	-	
IACR (CCME)	mg/kg	-	-	1.03	0.620	0.610	0.610	0.970	0.610	0.620	1.03	0.768	0.189	

Value > Lower Working Sediment Quality Guideline (WSQG).
 Value > Upper Working Sediment Quality Guideline (WSQG, or alert concentration in the case of Selenium).
 Notes: All summary stats calculated to 3 significant figures. "-" indicates no data available.

Table F.1: Sediment Quality Samples and Summary Statistics for Lotic Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Parameter	Units	BC Sediment Quality Guidelines		RG_FRUPO					RG_FRUPO					
		Lower SQG	Upper SQG	RG_FRUPO-1	RG_FRUPO-2	RG_FRUPO-3	RG_FRUPO-4	RG_FRUPO-5	Minimum	Median	Maximum	Mean	Standard Deviation	
				18-Sep-22	18-Sep-22	18-Sep-22	18-Sep-22	18-Sep-22						
Physical Tests	Moisture	%	-	-	51.6	33.3	49.5	46.4	45.8	33.3	46.4	51.6	45.3	8.65
	pH(1:2 Soil:Water)	pH	-	-	8.08	8.18	8.04	8.09	8.15	8.04	8.09	8.18	8.11	0.0464
Particle Size	% Gravel (>2 mm)	%	-	-	3.10	<1	<1	1.10	1.90	<1	1.10	3.10	1.62	3.67
	% Sand (2.00 mm - 1.00 mm)	%	-	-	2.50	2.70	<1	<1	1.50	<1	1.50	2.70	1.74	6.27
	% Sand (1.00 mm - 0.50 mm)	%	-	-	12.4	13.2	4.40	6.50	2.00	2.00	6.50	13.2	7.70	10.5
	% Sand (0.50 mm - 0.25 mm)	%	-	-	11.5	42.3	21.3	21.4	6.90	6.90	21.3	42.3	20.7	7.56
	% Sand (0.25 mm - 0.125 mm)	%	-	-	12.8	16.0	18.6	19.8	25.0	12.8	18.6	25.0	18.4	7.14
	% Sand (0.125 mm - 0.063 mm)	%	-	-	10.5	9.30	11.4	13.8	22.7	9.30	11.4	22.7	13.5	3.52
	% Silt (0.063 mm - 0.0312 mm)	%	-	-	19.0	6.60	17.5	15.6	18.7	6.60	17.5	19.0	15.5	2.77
	% Silt (0.0312 mm - 0.004 mm)	%	-	-	23.2	7.20	21.5	17.5	18.1	7.20	18.1	23.2	17.5	3.33
% Clay (<4 µm)	%	-	-	5.00	2.10	5.10	3.70	3.20	2.10	3.70	5.10	3.82	0.349	
Organic Carbon	Total Organic Carbon	%	-	-	7.67	2.71	5.49	5.06	4.24	2.71	5.06	7.67	5.03	1.45
Metals	Aluminum (Al)	mg/kg	-	-	5,210	5,980	6,680	6,100	5,500	5,210	5,980	6,680	5,894	1,647
	Antimony (Sb)	mg/kg	-	-	0.650	0.670	0.650	0.590	0.530	0.530	0.650	0.670	0.618	0.0259
	Arsenic (As)	mg/kg	5.9	17	5.00	5.76	5.36	5.14	4.76	4.76	5.14	5.76	5.20	0.551
	Barium (Ba)	mg/kg	-	-	186	168	197	175	156	156	175	197	176	25.2
	Beryllium (Be)	mg/kg	-	-	0.480	0.610	0.550	0.580	0.500	0.480	0.550	0.610	0.544	0.0672
	Bismuth (Bi)	mg/kg	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
	Boron (B)	mg/kg	-	-	<5	<5	5.70	5.40	5.00	<5	5.00	5.70	5.22	2.32
	Cadmium (Cd)	mg/kg	0.60	3.5	1.39	1.24	1.32	1.32	1.20	1.20	1.32	1.39	1.29	0.0762
	Calcium (Ca)	mg/kg	-	-	46,600	40,300	49,200	49,600	47,900	40,300	47,900	49,600	46,720	7,311
	Chromium (Cr)	mg/kg	37	90	10.4	10.5	12.7	11.4	10.6	10.4	10.6	12.7	11.1	2.46
	Cobalt (Co)	mg/kg	-	-	5.33	5.43	5.86	5.56	5.01	5.01	5.43	5.86	5.44	0.411
	Copper (Cu)	mg/kg	36	197	15.2	12.4	14.2	12.5	11.4	11.4	12.5	15.2	13.1	0.803
	Iron (Fe)	mg/kg	21,200	43,766	11,900	15,000	13,200	13,600	11,300	11,300	13,200	15,000	13,000	4,090
	Lead (Pb)	mg/kg	35	91.3	7.77	7.99	8.53	7.90	7.26	7.26	7.90	8.53	7.89	0.349
	Lithium (Li)	mg/kg	-	-	6.90	8.30	8.90	9.00	7.90	6.90	8.30	9.00	8.20	1.38
	Magnesium (Mg)	mg/kg	-	-	10,100	9,160	10,800	11,500	12,300	9,160	10,800	12,300	10,772	650
	Manganese (Mn)	mg/kg	460	1,100	427	416	444	427	382	382	427	444	419	16.8
	Mercury (Hg)	mg/kg	0.17	0.49	0.0436	0.0298	0.0365	0.0331	0.0333	0.0298	0.0333	0.0436	0.0353	0.00387
	Molybdenum (Mo)	mg/kg	25	23,000	1.55	1.56	1.69	1.52	1.36	1.36	1.55	1.69	1.54	0.170
	Nickel (Ni)	mg/kg	16	75	28.1	28.7	28.6	28.4	25.1	25.1	28.4	28.7	27.8	2.32
	Phosphorus (P)	mg/kg	-	-	1,430	1,610	1,400	1,610	1,460	1,400	1,460	1,610	1,502	1,245
	Potassium (K)	mg/kg	-	-	1,330	1,460	1,650	1,490	1,290	1,290	1,460	1,650	1,444	550
	Selenium (Se)	mg/kg	2.0	-	2.92	1.26	1.80	1.75	2.04	1.26	1.80	2.92	1.95	0.342
	Silver (Ag)	mg/kg	0.50	-	0.190	0.130	0.180	0.150	0.150	0.130	0.150	0.190	0.160	0.0164
	Sodium (Na)	mg/kg	-	-	71.0	67.0	89.0	75.0	78.0	67.0	75.0	89.0	76.0	19.8
	Strontium (Sr)	mg/kg	-	-	60.0	69.0	74.1	67.7	62.7	60.0	67.7	74.1	66.7	15.2
	Sulfur (S)	mg/kg	-	-	<1,000	<1,000	<1,000	<1,000	<1,000	<1000	<1000	<1000	<1000	-
	Thallium (Tl)	mg/kg	-	-	0.183	0.193	0.201	0.192	0.174	0.174	0.192	0.201	0.189	0.0181
	Tin (Sn)	mg/kg	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	-
	Titanium (Ti)	mg/kg	-	-	7.40	6.70	6.80	7.20	7.10	6.70	7.10	7.40	7.04	2.62
	Tungsten (W)	mg/kg	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
Uranium (U)	mg/kg	-	-	1.14	1.16	1.10	1.12	0.992	0.992	1.12	1.16	1.10	0.275	
Vanadium (V)	mg/kg	-	-	24.8	30.0	30.1	28.2	24.4	24.4	28.2	30.1	27.5	6.96	
Zinc (Zn)	mg/kg	123	315	103	114	110	109	100	100	109	114	107	5.32	
Zirconium (Zr)	mg/kg	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	

Value > Lower Working Sediment Quality Guideline (WSQG).
 Value > Upper Working Sediment Quality Guideline (WSQG), or alert concentration in the case of Selenium).

Notes: All summary stats calculated to 3 significant figures. "-" indicates no data available.

Table F.1: Sediment Quality Samples and Summary Statistics for Lotic Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Parameter	Units	BC Sediment Quality Guidelines		RG_FRUPO					RG_FRUPO					
		Lower SQG	Upper SQG	RG_FRUPO-1	RG_FRUPO-2	RG_FRUPO-3	RG_FRUPO-4	RG_FRUPO-5	Minimum	Median	Maximum	Mean	Standard Deviation	
				18-Sep-22	18-Sep-22	18-Sep-22	18-Sep-22	18-Sep-22						
Polycyclic Aromatic Hydrocarbons	Acenaphthene	mg/kg	0.0067	0.089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Acenaphthylene	mg/kg	0.0059	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Acridine	mg/kg	-	-	0.0590	<0.05	0.0590	0.0540	<0.05	<0.05	0.0540	0.0590	0.0544	0.0377
	Anthracene	mg/kg	0.047	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benz(a)anthracene	mg/kg	0.032	0.39	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benzo(a)pyrene	mg/kg	0.032	0.78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benzo(b&j)fluoranthene	mg/kg	-	-	0.0550	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.0550	0.0510	-
	Benzo(b+j+k)fluoranthene	mg/kg	-	-	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	-
	Benzo(g,h,i)perylene	mg/kg	0.17	3.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benzo(k)fluoranthene	mg/kg	0.24	13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Chrysene	mg/kg	0.057	0.86	0.123	0.0610	0.140	0.117	0.0940	0.0610	0.117	0.140	0.107	0.0572
	Dibenz(a,h)anthracene	mg/kg	0.0062	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Fluoranthene	mg/kg	0.11	2.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Fluorene	mg/kg	0.021	0.14	0.0920	<0.05	0.100	0.0860	0.0690	<0.05	0.0860	0.100	0.0794	0.0766
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.20	3.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	1-Methylnaphthalene	mg/kg	-	-	0.473	0.224	0.590	0.465	0.378	0.224	0.465	0.590	0.426	0.353
	2-Methylnaphthalene	mg/kg	0.020	0.201	0.801	0.359	0.980	0.746	0.592	0.359	0.746	0.980	0.696	0.625
	Naphthalene	mg/kg	0.035	0.39	0.305	0.146	0.422	0.308	0.244	0.146	0.305	0.422	0.285	0.215
	Phenanthrene	mg/kg	0.042	0.52	0.426	0.216	0.544	0.416	0.345	0.216	0.416	0.544	0.389	0.270
	Pyrene	mg/kg	0.053	0.88	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Quinoline	mg/kg	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	d12-Chrysene	%	-	-	102	106	114	104	112	102	106	114	108	3.49
	d8-Naphthalene	%	-	-	107	105	116	102	112	102	107	116	108	5.68
d10-Phenanthrene	%	-	-	93.7	96.2	104	96.1	102	93.7	96.2	104	98.4	5.46	
B(a)P Total Potency Equivalent	mg/kg	-	-	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	-	
IACR (CCME)	mg/kg	-	-	0.820	0.610	0.640	0.630	0.620	0.610	0.630	0.820	0.664	0.189	

Value > Lower Working Sediment Quality Guideline (WSQG).
 Value > Upper Working Sediment Quality Guideline (WSQG, or alert concentration in the case of Selenium).

Notes: All summary stats calculated to 3 significant figures. "-" indicates no data available.

Table F.1: Sediment Quality Samples and Summary Statistics for Lotic Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Parameter	Units	BC Sediment Quality Guidelines		RG_FO22					RG_FO22					
		Lower SQG	Upper SQG	RG_FO22-1	RG_FO22-2	RG_FO22-3	RG_FO22-4	RG_FO22-5	Minimum	Median	Maximum	Mean	Standard Deviation	
				09-Sep-22	09-Sep-22	09-Sep-22	09-Sep-22	09-Sep-22						
Physical Tests	Moisture	%	-	-	32.7	45.4	37.5	34.0	34.2	32.7	34.2	45.4	36.8	8.65
	pH(1:2 Soil:Water)	pH	-	-	8.02	7.53	7.90	7.95	8.11	7.53	7.95	8.11	7.90	0.0464
Particle Size	% Gravel (>2 mm)	%	-	-	<1	<1	3.20	<1	1.60	<1	<1	3.20	1.56	3.67
	% Sand (2.00 mm - 1.00 mm)	%	-	-	<1	<1	<1	1.30	4.50	<1	<1	4.50	1.76	6.27
	% Sand (1.00 mm - 0.50 mm)	%	-	-	4.30	<1	1.70	7.10	14.5	<1	4.30	14.5	5.72	10.5
	% Sand (0.50 mm - 0.25 mm)	%	-	-	26.6	2.30	21.6	58.2	24.2	2.30	24.2	58.2	26.6	7.56
	% Sand (0.25 mm - 0.125 mm)	%	-	-	39.0	22.7	40.0	21.6	23.1	21.6	23.1	40.0	29.3	7.14
	% Sand (0.125 mm - 0.063 mm)	%	-	-	14.3	29.5	12.3	3.70	13.1	3.70	13.1	29.5	14.6	3.52
	% Silt (0.063 mm - 0.0312 mm)	%	-	-	7.50	20.9	9.00	2.90	9.20	2.90	9.00	20.9	9.90	2.77
	% Silt (0.0312 mm - 0.004 mm)	%	-	-	6.00	19.7	9.30	3.50	8.20	3.50	8.20	19.7	9.34	3.33
% Clay (<4 µm)	%	-	-	2.10	4.70	2.50	1.40	1.60	1.40	2.10	4.70	2.46	0.349	
Organic Carbon	Total Organic Carbon	%	-	-	2.08	5.56	4.41	4.67	2.93	2.08	4.41	5.56	3.93	1.45
Metals	Aluminum (Al)	mg/kg	-	-	7,810	7,620	7,800	7,990	7,140	7,140	7,800	7,990	7,672	1,647
	Antimony (Sb)	mg/kg	-	-	0.690	0.610	0.650	0.720	0.740	0.610	0.690	0.740	0.682	0.0259
	Arsenic (As)	mg/kg	5.9	17	6.74	5.22	5.77	6.92	6.32	5.22	6.32	6.92	6.19	0.551
	Barium (Ba)	mg/kg	-	-	180	176	180	199	200	176	180	200	187	25.2
	Beryllium (Be)	mg/kg	-	-	0.660	0.640	0.680	0.750	0.710	0.640	0.680	0.750	0.688	0.0672
	Bismuth (Bi)	mg/kg	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
	Boron (B)	mg/kg	-	-	7.10	7.90	8.40	6.70	6.20	6.20	7.10	8.40	7.26	2.32
	Cadmium (Cd)	mg/kg	0.60	3.5	1.06	1.44	1.20	1.12	1.21	1.06	1.20	1.44	1.21	0.0762
	Calcium (Ca)	mg/kg	-	-	33,700	47,400	36,300	25,800	34,900	25,800	34,900	47,400	35,620	7,311
	Chromium (Cr)	mg/kg	37	90	14.6	14.5	13.7	14.7	13.9	13.7	14.5	14.7	14.3	2.46
	Cobalt (Co)	mg/kg	-	-	6.56	5.75	6.07	6.87	6.08	5.75	6.08	6.87	6.27	0.411
	Copper (Cu)	mg/kg	36	197	12.6	13.9	12.5	13.1	13.3	12.5	13.1	13.9	13.1	0.803
	Iron (Fe)	mg/kg	21,200	43,766	17,700	13,700	15,600	18,600	18,800	13,700	17,700	18,800	16,880	4,090
	Lead (Pb)	mg/kg	35	91.3	9.74	9.24	9.72	10.0	9.76	9.24	9.74	10.0	9.69	0.349
	Lithium (Li)	mg/kg	-	-	9.40	10.3	9.60	8.90	9.30	8.90	9.40	10.3	9.50	1.38
	Magnesium (Mg)	mg/kg	-	-	9,210	12,600	9,050	5,970	9,280	5,970	9,210	12,600	9,222	650
	Manganese (Mn)	mg/kg	460	1,100	394	395	390	458	393	390	394	458	406	16.8
	Mercury (Hg)	mg/kg	0.17	0.49	0.0321	0.0413	0.0366	0.0270	0.0307	0.0270	0.0321	0.0413	0.0335	0.00387
	Molybdenum (Mo)	mg/kg	25	23,000	1.48	1.45	1.55	1.64	1.64	1.45	1.55	1.64	1.55	0.170
	Nickel (Ni)	mg/kg	16	75	28.0	30.9	28.3	29.7	26.7	26.7	28.3	30.9	28.7	2.32
	Phosphorus (P)	mg/kg	-	-	1,670	1,360	1,350	1,500	1,720	1,350	1,500	1,720	1,520	1,245
	Potassium (K)	mg/kg	-	-	1,750	1,730	1,850	1,910	1,650	1,650	1,750	1,910	1,778	550
	Selenium (Se)	mg/kg	2.0	-	1.57	2.56	1.84	1.59	1.56	1.56	1.59	2.56	1.82	0.342
	Silver (Ag)	mg/kg	0.50	-	0.140	0.220	0.160	0.120	0.150	0.120	0.150	0.220	0.158	0.0164
	Sodium (Na)	mg/kg	-	-	85.0	84.0	83.0	76.0	79.0	76.0	83.0	85.0	81.4	19.8
	Strontium (Sr)	mg/kg	-	-	69.1	62.8	69.2	71.6	68.7	62.8	69.1	71.6	68.3	15.2
	Sulfur (S)	mg/kg	-	-	<1,000	<1,000	<1,000	<1,000	<1,000	<1000	<1000	<1000	<1000	-
	Thallium (Tl)	mg/kg	-	-	0.227	0.252	0.236	0.226	0.216	0.216	0.227	0.252	0.231	0.0181
	Tin (Sn)	mg/kg	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	-
	Titanium (Ti)	mg/kg	-	-	19.5	25.8	18.3	13.3	19.0	13.3	19.0	25.8	19.2	2.62
	Tungsten (W)	mg/kg	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
Uranium (U)	mg/kg	-	-	1.41	1.29	1.36	1.39	1.40	1.29	1.39	1.41	1.37	0.275	
Vanadium (V)	mg/kg	-	-	34.6	30.7	33.9	35.6	33.5	30.7	33.9	35.6	33.7	6.96	
Zinc (Zn)	mg/kg	123	315	122	115	113	126	121	113	121	126	119	5.32	
Zirconium (Zr)	mg/kg	-	-	1.90	1.50	1.70	1.40	1.40	1.40	1.50	1.90	1.58	-	

Value > Lower Working Sediment Quality Guideline (WSQG).
 Value > Upper Working Sediment Quality Guideline (WSQG), or alert concentration in the case of Selenium).

Notes: All summary stats calculated to 3 significant figures. "-" indicates no data available.

Table F.1: Sediment Quality Samples and Summary Statistics for Lotic Reference and Mine-Exposed Areas, FRO LAEMP, September 2022

Parameter	Units	BC Sediment Quality Guidelines		RG_FO22					RG_FO22					
		Lower SQG	Upper SQG	RG_FO22-1	RG_FO22-2	RG_FO22-3	RG_FO22-4	RG_FO22-5	Minimum	Median	Maximum	Mean	Standard Deviation	
				09-Sep-22	09-Sep-22	09-Sep-22	09-Sep-22	09-Sep-22						
Polycyclic Aromatic Hydrocarbons	Acenaphthene	mg/kg	0.0067	0.089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Acenaphthylene	mg/kg	0.0059	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Acridine	mg/kg	-	-	<0.05	0.0520	<0.05	<0.05	<0.05	<0.05	<0.05	0.0520	0.0504	0.0377
	Anthracene	mg/kg	0.047	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benz(a)anthracene	mg/kg	0.032	0.39	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benzo(a)pyrene	mg/kg	0.032	0.78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benzo(b&j)fluoranthene	mg/kg	-	-	<0.05	0.0760	<0.05	<0.05	<0.05	<0.05	<0.05	0.0760	0.0552	-
	Benzo(b+j+k)fluoranthene	mg/kg	-	-	<0.075	0.0760	<0.075	<0.075	<0.075	<0.075	<0.075	0.0760	0.0752	-
	Benzo(g,h,i)perylene	mg/kg	0.17	3.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Benzo(k)fluoranthene	mg/kg	0.24	13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Chrysene	mg/kg	0.057	0.86	0.0720	0.178	0.0880	0.106	0.109	0.0720	0.106	0.178	0.111	0.0572
	Dibenz(a,h)anthracene	mg/kg	0.0062	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Fluoranthene	mg/kg	0.11	2.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Fluorene	mg/kg	0.021	0.14	<0.05	0.0710	<0.05	<0.05	<0.05	<0.05	<0.05	0.0710	0.0542	0.0766
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.20	3.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	1-Methylnaphthalene	mg/kg	-	-	0.136	0.473	0.246	0.245	0.228	0.136	0.245	0.473	0.266	0.353
	2-Methylnaphthalene	mg/kg	0.020	0.201	0.208	0.733	0.379	0.371	0.354	0.208	0.371	0.733	0.409	0.625
	Naphthalene	mg/kg	0.035	0.39	0.0900	0.302	0.168	0.158	0.151	0.0900	0.158	0.302	0.174	0.215
	Phenanthrene	mg/kg	0.042	0.52	0.178	0.628	0.293	0.305	0.297	0.178	0.297	0.628	0.340	0.270
	Pyrene	mg/kg	0.053	0.88	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	Quinoline	mg/kg	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
	d12-Chrysene	%	-	-	72.9	63.5	69.3	71.7	69.5	63.5	69.5	72.9	69.4	3.49
	d8-Naphthalene	%	-	-	68.1	61.3	65.9	68.2	65.4	61.3	65.9	68.2	65.8	5.68
d10-Phenanthrene	%	-	-	66.1	62.1	65.5	65.8	63.3	62.1	65.5	66.1	64.6	5.46	
B(a)P Total Potency Equivalent	mg/kg	-	-	<0.065	0.0670	<0.065	<0.065	<0.065	<0.065	<0.065	0.0670	0.0654	-	
IACR (CCME)	mg/kg	-	-	0.610	0.980	0.620	0.630	0.630	0.610	0.630	0.980	0.694	0.189	

Value > Lower Working Sediment Quality Guideline (WSQG).
 Value > Upper Working Sediment Quality Guideline (WSQG, or alert concentration in the case of Selenium).

Notes: All summary stats calculated to 3 significant figures. "-" indicates no data available.

Table F.2: Statistical Comparison of Sediment Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2017 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts: 2022 versus Before Year		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
% Clay (<4um)	RG_SCOUTDS	0.717	0.223	0.001	0.775	0.289	2019	0.001	106
							2020		
							2021		
	RG_FOBCP	<0.001	0.265	-	-	0.011	2017	0.502	ns
							2018	0.066	88
							2019	0.818	ns
							2020	0.086	-45
							2021	0.679	ns
	RG_FRUPO	0.015	0.868	-	-	<0.001	2017	0.979	ns
							2018	<0.001	268
							2019	0.473	ns
							2020	0.939	ns
							2021	0.606	ns
	RG_FO22	0.009	0.001	-	-	0.010	2017	0.988	ns
							2018	<0.001	189
							2019	0.912	ns
2020							1.00	ns	
2021							0.968	ns	
% Moisture	RG_SCOUTDS	0.493	0.004	<0.001	0.056	0.998	2019	<0.001	117
							2020		
							2021		
	RG_FOBCP	<0.001	0.198	0.180	0.510	0.497	2017	0.180	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	<0.001	0.092	-	-	0.066	2017	<0.001	80
							2018	0.002	70
							2019	0.001	75
							2020	<0.001	79
							2021	0.925	ns
	RG_FO22	<0.001	<0.001	0.006	0.236	0.488	2017	0.006	47
							2018		
							2019		
2020									
2021									
% Sand	RG_SCOUTDS	0.475	0.948	0.007	0.144	0.218	2019	0.007	-38
							2020		
							2021		
	RG_FOBCP	<0.001	0.225	-	-	0.004	2017	0.801	ns
							2018	0.006	-54
							2019	1	ns
							2020	0.363	ns
							2021	0.914	ns
	RG_FRUPO	0.016	0.659	-	-	0.001	2017	0.261	ns
							2018	<0.001	-65
							2019	0.825	ns
							2020	0.961	ns
							2021	0.662	ns
	RG_FO22	0.006	0.031	-	-	0.005	2017	0.939	ns
							2018	0.001	-64
							2019	0.903	ns
2020							1.00	ns	
2021							0.915	ns	
% Silt	RG_SCOUTDS	0.166	0.370	<0.001	0.223	0.149	2019	<0.001	145
							2020		
							2021		
	RG_FOBCP	<0.001	0.926	0.116	0.587	0.119	2017	0.116	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	<0.001	0.327	-	-	0.088	2017	0.974	ns
							2018	<0.001	196
							2019	0.324	ns
							2020	0.288	ns
							2021	0.207	ns
	RG_FO22	<0.001	0.085	-	-	0.073	2017	1	ns
							2018	0.026	147
							2019	0.983	ns
2020							1.00	ns	
2021							0.611	ns	

P-Value for relevant BACI term < 0.1.
 Increase in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.
 Decrease in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated, Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table F.2: Statistical Comparison of Sediment Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2017 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts: 2022 versus Before Year		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Total Organic Carbon	RG_SCOUTDS	0.989	0.127	-	-	0.054	2019	<0.001	134
							2020	0.262	ns
							2021	<0.001	123
	RG_FOBCP	<0.001	0.025	0.669	0.101	0.137	2017	0.669	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.017	0.001	-	-	0.057	2017	0.65	ns
							2018	<0.001	129
							2019	0.099	60
							2020	0.179	ns
							2021	0.992	ns
	RG_FO22	0.017	<0.001	0.279	0.005	0.671	2017	0.279	ns
							2018		
							2019		
2020									
2021									
Aluminum	RG_SCOUTDS	0.033	0.275	0.018	0.005	0.301	2019	0.018	-34
							2020		
							2021		
	RG_FOBCP	0.684	0.318	0.907	0.004	0.670	2017	0.907	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.637	0.004	0.271	0.005	0.452	2017	0.271	ns
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.533	<0.001	-	-	0.016	2017	0.865	ns
							2018	1	ns
							2019	0.127	ns
2020							0.07	39	
2021							0.552	ns	
Antimony	RG_SCOUTDS	0.764	0.005	<0.001	0.964	0.853	2019	<0.001	-44
							2020		
							2021		
	RG_FOBCP	0.003	0.026	0.769	0.949	0.876	2017	0.769	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.092	<0.001	0.056	0.995	0.981	2017	0.056	-28
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.009	<0.001	0.346	0.999	0.907	2017	0.346	ns
							2018		
							2019		
2020									
2021									
Arsenic	RG_SCOUTDS	0.668	0.018	-	-	0.061	2019	<0.001	-42
							2020	0.294	ns
							2021	0.099	-21
	RG_FOBCP	<0.001	0.124	0.822	0.090	0.992	2017	0.822	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.059	<0.001	0.098	0.143	0.966	2017	0.098	-15
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.015	<0.001	-	-	0.038	2017	0.875	ns
							2018	0.993	ns
							2019	0.015	-30
2020							0.69	ns	
2021							0.839	ns	

P-Value for relevant BACI term < 0.1.
 Increase in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.
 Decrease in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated, Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table F.2: Statistical Comparison of Sediment Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2017 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts: 2022 versus Before Year		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Barium	RG_SCOUTDS	0.256	0.034	0.034	0.028	0.169	2019	0.034	-19
							2020		
							2021		
	RG_FOBCP	0.384	0.023	0.591	0.007	0.935	2017	0.591	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.791	0.922	0.451	<0.001	0.559	2017	0.451	ns
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.820	0.135	-	-	<0.001	2017	0.792	ns
							2018	0.862	ns
							2019	<0.001	-38
2020							0.52	ns	
2021							0.872	ns	
Beryllium	RG_SCOUTDS	0.469	0.113	0.003	0.018	0.382	2019	0.003	-29
							2020		
							2021		
	RG_FOBCP	0.003	0.448	0.573	0.005	0.810	2017	0.573	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.322	0.002	0.066	0.018	0.705	2017	0.066	-17
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.018	<0.001	0.968	0.295	0.116	2017	0.968	ns
							2018		
							2019		
2020									
2021									
Boron	RG_SCOUTDS	0.006	0.395	0.980	<0.001	0.991	2019	0.980	ns
							2020		
							2021		
	RG_FOBCP	0.064	0.448	0.547	0.001	0.654	2017	0.547	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.003	0.792	0.547	0.001	0.542	2017	0.547	ns
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.304	0.291	0.154	<0.001	0.538	2017	0.154	ns
							2018		
							2019		
2020									
2021									
Cadmium	RG_SCOUTDS	0.030	<0.001	0.194	0.602	0.442	2019	0.194	ns
							2020		
							2021		
	RG_FOBCP	0.834	0.009	-	-	0.022	2017	0.986	ns
							2018	0.127	ns
							2019	0.978	ns
							2020	0.083	-29
							2021	0.485	ns
	RG_FRUPO	0.725	<0.001	-	-	0.027	2017	0.881	ns
							2018	0.012	36
							2019	0.993	ns
							2020	0.9	ns
							2021	0.791	ns
	RG_FO22	0.566	<0.001	-	-	0.030	2017	0.957	ns
							2018	0.007	50
							2019	0.674	ns
2020							1.00	ns	
2021							1	ns	

P-Value for relevant BACI term < 0.1.
 Increase in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.
 Decrease in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated, Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table F.2: Statistical Comparison of Sediment Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2017 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts: 2022 versus Before Year		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Calcium	RG_SCOUTDS	0.016	0.236	-	-	<0.001	2019	0.067	-19
							2020	0.008	35
							2021	<0.001	52
	RG_FOBCP	0.106	0.463	0.159	0.037	0.318	2017	0.159	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.843	<0.001	0.959	0.004	0.164	2017	0.959	ns
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.570	<0.001	-	-	0.002	2017	0.93	ns
							2018	0.998	ns
							2019	<0.001	-41
2020							1.00	ns	
2021							1	ns	
Chromium	RG_SCOUTDS	0.135	0.182	0.089	<0.001	0.437	2019	0.089	-23
							2020		
							2021		
	RG_FOBCP	0.666	0.306	0.953	<0.001	0.999	2017	0.953	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.319	0.017	0.645	<0.001	0.803	2017	0.645	ns
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.884	<0.001	0.443	0.013	0.125	2017	0.443	ns
							2018		
							2019		
2020									
2021									
Cobalt	RG_SCOUTDS	0.590	0.001	0.382	<0.001	0.553	2019	0.382	ns
							2020		
							2021		
	RG_FOBCP	0.433	0.760	-	-	0.048	2017	0.999	ns
							2018	0.021	26
							2019	0.938	ns
							2020	0.731	ns
							2021	0.54	ns
	RG_FRUPO	0.233	0.076	-	-	<0.001	2017	0.017	-17
							2018	0.246	ns
							2019	0.992	ns
							2020	1	ns
							2021	0.028	20
	RG_FO22	0.555	0.165	-	-	<0.001	2017	0.997	ns
							2018	0.015	30
							2019	0.92	ns
2020							0.06	24	
2021							<0.001	57	
Copper	RG_SCOUTDS	0.167	<0.001	0.613	0.085	0.336	2019	0.613	ns
							2020		
							2021		
	RG_FOBCP	0.125	0.380	0.938	0.018	0.386	2017	0.938	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.183	0.007	-	-	0.053	2017	0.05	-19
							2018	0.316	ns
							2019	0.739	ns
							2020	0.972	ns
							2021	0.991	ns
	RG_FO22	0.187	0.022	-	-	0.002	2017	0.714	ns
							2018	0.427	ns
							2019	0.006	-28
2020							0.39	ns	
2021							0.98	ns	

■ P-Value for relevant BACI term < 0.1.

■ Increase in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25 %.

■ Decrease in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated, Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table F.2: Statistical Comparison of Sediment Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2017 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts: 2022 versus Before Year		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Iron	RG_SCOUTDS	0.980	0.005	0.004	0.857	0.538	2019	0.004	-30
							2020		
							2021		
	RG_FOBCP	<0.001	0.303	0.831	0.229	0.997	2017	0.831	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.370	0.087	0.004	0.260	0.975	2017	0.004	-26
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.053	0.001	-	-	0.013	2017	0.65	ns
							2018	0.984	ns
							2019	0.003	-41
2020							0.85	ns	
2021							0.937	ns	
Lead	RG_SCOUTDS	0.192	<0.001	-	-	0.009	2019	0.029	-19
							2020	0.367	ns
							2021	0.622	ns
	RG_FOBCP	0.173	0.973	0.615	0.335	0.916	2017	0.615	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.664	0.002	0.593	0.031	0.634	2017	0.593	ns
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.042	<0.001	-	-	0.013	2017	0.206	ns
							2018	0.103	ns
							2019	0.384	ns
2020							0.01	28	
2021							0.192	ns	
Lithium	RG_SCOUTDS	0.164	0.893	-	-	0.006	2019	<0.001	-48
							2020	0.488	ns
							2021	0.55	ns
	RG_FOBCP	0.108	0.418	-	-	0.055	2017	0.438	ns
							2018	0.511	ns
							2019	0.701	ns
							2020	0.863	ns
							2021	0.103	ns
	RG_FRUPO	0.988	0.737	-	-	0.023	2017	0.002	-33
							2018	0.645	ns
							2019	0.005	-31
							2020	0.967	ns
							2021	0.996	ns
	RG_FO22	0.192	0.392	-	-	0.013	2017	0.551	ns
							2018	0.992	ns
							2019	0.026	-26
2020							0.28	ns	
2021							0.812	ns	
Magnesium	RG_SCOUTDS	0.651	0.442	-	-	0.010	2019	0.098	-27
							2020	0.157	ns
							2021	0.301	ns
	RG_FOBCP	0.067	0.797	0.427	0.085	0.311	2017	0.427	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.106	0.277	0.723	0.065	0.167	2017	0.723	ns
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.021	0.998	-	-	0.004	2017	0.772	ns
							2018	0.63	ns
							2019	<0.001	-49
2020							0.98	ns	
2021							0.278	ns	

P-Value for relevant BACI term < 0.1.
 Increase in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.
 Decrease in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated, Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table F.2: Statistical Comparison of Sediment Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2017 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts: 2022 versus Before Year		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Manganese	RG_SCOUTDS	0.006	<0.001	0.184	0.203	0.826	2019	0.184	ns
							2020		
							2021		
	RG_FOBCP	<0.001	0.023	-	-	<0.001	2017	0.04	40
							2018	<0.001	81
							2019	0.968	ns
							2020	0.8	ns
							2021	0.373	ns
	RG_FRUPO	<0.001	<0.001	-	-	<0.001	2017	<0.001	58
							2018	<0.001	90
							2019	0.621	ns
							2020	0.803	ns
							2021	0.723	ns
	RG_FO22	0.058	<0.001	-	-	<0.001	2017	0.001	75
							2018	<0.001	153
							2019	0.529	ns
2020							0.21	ns	
2021							0.272	ns	
Mercury	RG_SCOUTDS	0.072	0.060	0.587	<0.001	0.278	2019	0.587	ns
							2020		
							2021		
	RG_FOBCP	0.001	0.368	-	-	0.003	2017	0.832	ns
							2018	0.083	34
							2019	1	ns
							2020	0.943	ns
							2021	0.014	-32
	RG_FRUPO	0.417	0.730	0.251	0.627	0.550	2017	0.251	ns
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.069	0.715	0.193	0.006	0.291	2017	0.193	ns
							2018		
							2019		
2020									
2021									
Molybdenum	RG_SCOUTDS	0.184	<0.001	0.167	0.238	0.249	2019	0.167	ns
							2020		
							2021		
	RG_FOBCP	0.025	0.077	0.770	0.016	0.991	2017	0.770	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.146	<0.001	0.476	0.196	0.664	2017	0.476	ns
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.013	0.009	-	-	0.024	2017	0.534	ns
							2018	0.278	ns
							2019	0.237	ns
2020							0.35	ns	
2021							0.642	ns	
Nickel	RG_SCOUTDS	0.780	<0.001	0.137	0.999	0.890	2019	0.137	ns
							2020		
							2021		
	RG_FOBCP	0.042	<0.001	-	-	0.043	2017	0.132	ns
							2018	0.36	ns
							2019	0.964	ns
							2020	0.152	ns
							2021	0.981	ns
	RG_FRUPO	0.008	<0.001	0.624	0.724	0.173	2017	0.624	ns
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.863	<0.001	0.030	0.496	0.321	2017	0.030	24
							2018		
							2019		
2020									
2021									

P-Value for relevant BACI term < 0.1.
 Increase in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.
 Decrease in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated, Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table F.2: Statistical Comparison of Sediment Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2017 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts: 2022 versus Before Year		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Phosphorus	RG_SCOUTDS	0.077	0.067	0.376	0.977	0.627	2019	0.376	ns
							2020		
							2021		
	RG_FOBCP	0.089	0.129	0.261	0.831	0.987	2017	0.261	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.155	<0.001	0.151	0.868	0.993	2017	0.151	ns
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.507	<0.001	0.035	0.996	0.661	2017	0.035	-25
							2018		
							2019		
2020									
2021									
Potassium	RG_SCOUTDS	0.023	0.375	0.005	<0.001	0.401	2019	0.005	-43
							2020		
							2021		
	RG_FOBCP	0.397	0.161	0.953	<0.001	0.687	2017	0.953	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.850	0.006	0.226	<0.001	0.711	2017	0.226	ns
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.449	<0.001	0.852	<0.001	0.145	2017	0.852	ns
							2018		
							2019		
2020									
2021									
Selenium	RG_SCOUTDS	0.045	0.002	<0.001	0.101	0.999	2019	<0.001	106
							2020		
							2021		
	RG_FOBCP	<0.001	0.003	0.469	0.500	0.395	2017	0.469	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.047	0.066	-	-	0.097	2017	0.918	ns
							2018	<0.001	155
							2019	0.328	ns
							2020	0.129	ns
							2021	0.965	ns
	RG_FO22	0.017	0.019	-	-	0.081	2017	0.693	ns
							2018	0.001	133
							2019	1	ns
2020							0.52	ns	
2021							0.998	ns	
Silver	RG_SCOUTDS	0.443	0.005	0.143	0.075	0.987	2019	0.143	ns
							2020		
							2021		
	RG_FOBCP	0.119	0.330	-	-	0.026	2017	0.853	ns
							2018	0.016	37
							2019	0.975	ns
							2020	0.833	ns
							2021	0.745	ns
	RG_FRUPO	0.348	<0.001	-	-	0.032	2017	0.382	ns
							2018	0.017	37
							2019	0.999	ns
							2020	0.838	ns
							2021	0.994	ns
	RG_FO22	0.651	0.085	0.359	0.727	0.547	2017	0.359	ns
							2018		
							2019		
2020									
2021									

P-Value for relevant BACI term < 0.1.
 Increase in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.
 Decrease in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated, Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table F.2: Statistical Comparison of Sediment Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2017 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts: 2022 versus Before Year		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Sodium	RG_SCOUTDS	0.232	0.239	-	-	0.087	2019	0.029	-24
							2020	0.878	ns
							2021	1	ns
	RG_FOBCP	0.629	0.057	0.125	0.004	0.393	2017	0.125	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.899	0.008	-	-	0.014	2017	0.06	-20
							2018	0.74	ns
							2019	0.034	-22
							2020	1	ns
							2021	0.02	-23
	RG_FO22	0.350	0.017	-	-	<0.001	2017	0.769	ns
							2018	0.096	20
							2019	<0.001	-27
2020							0.46	ns	
2021							0.992	ns	
Strontium	RG_SCOUTDS	0.920	0.167	0.007	0.431	0.109	2019	0.007	-21
							2020		
							2021		
	RG_FOBCP	0.001	0.374	0.399	0.046	0.987	2017	0.399	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.059	<0.001	0.337	0.064	0.987	2017	0.337	ns
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.035	<0.001	-	-	0.010	2017	0.64	ns
							2018	0.662	ns
							2019	0.014	-22
2020							0.75	ns	
2021							0.429	ns	
Thallium	RG_SCOUTDS	0.127	0.414	0.011	<0.001	0.802	2019	0.011	-29
							2020		
							2021		
	RG_FOBCP	0.256	0.002	0.820	<0.001	0.825	2017	0.820	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	0.833	<0.001	0.326	0.002	0.554	2017	0.326	ns
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.093	<0.001	0.491	0.048	0.231	2017	0.491	ns
							2018		
							2019		
2020									
2021									
Titanium	RG_SCOUTDS	0.154	0.207	0.004	<0.001	0.619	2019	0.004	152
							2020		
							2021		
	RG_FOBCP	<0.001	0.075	0.731	<0.001	0.994	2017	0.731	ns
							2018		
							2019		
							2020		
							2021		
	RG_FRUPO	<0.001	0.032	0.626	<0.001	0.763	2017	0.626	ns
							2018		
							2019		
							2020		
							2021		
	RG_FO22	0.564	0.007	<0.001	<0.001	0.826	2017	<0.001	164
							2018		
							2019		
2020									
2021									

P-Value for relevant BACI term < 0.1.
 Increase in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.
 Decrease in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated, Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table F.2: Statistical Comparison of Sediment Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2017 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts: 2022 versus Before Year		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Uranium	RG_SCOUTDS	0.011	0.045	0.339	0.300	0.271	2019	0.339	ns
							2020		
							2021		
	RG_FOBCP	0.011	0.023	0.334	0.199	0.684	2017	0.334	ns
							2018		
							2019		
	RG_FRUPO	0.031	<0.001	0.112	0.027	0.764	2020	0.112	ns
							2021		
							2017		
	RG_FO22	<0.001	<0.001	0.234	0.029	0.867	2018	0.234	ns
							2019		
							2020		
Vanadium	RG_SCOUTDS	0.062	0.439	0.002	<0.001	0.809	2017	0.002	-39
							2020		
							2021		
	RG_FOBCP	0.080	0.049	0.865	<0.001	0.903	2017	0.865	ns
							2018		
							2019		
	RG_FRUPO	0.859	<0.001	0.104	<0.001	0.684	2020	0.104	ns
							2021		
							2017		
	RG_FO22	0.266	<0.001	-	-	0.058	2018	0.217	ns
							2019		
							2020		
Zinc	RG_SCOUTDS	0.091	<0.001	0.601	0.011	0.505	2017	0.601	ns
							2020		
							2021		
	RG_FOBCP	0.125	0.005	-	-	0.036	2017	0.997	ns
							2018		
							2019		
	RG_FRUPO	0.264	0.071	-	-	0.009	2020	0.982	ns
							2021		
							2017		
	RG_FO22	0.013	0.110	-	-	0.046	2018	0.632	ns
							2019		
							2020		
1-Methylnaphthalene	RG_SCOUTDS	0.133	0.005	<0.001	0.984	0.792	2017	<0.001	364
							2020		
							2021		
	RG_FOBCP	0.010	0.083	-	-	0.004	2017	0.173	ns
							2018		
							2019		
	RG_FRUPO	0.599	<0.001	-	-	<0.001	2020	0.947	ns
							2021		
							2017		
	RG_FO22	0.613	<0.001	0.002	0.340	0.744	2018	0.001	216
							2019		
							2020		
							2021	0.002	145

P-Value for relevant BACI term < 0.1.
 Increase in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25 %.
 Decrease in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated, Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table F.2: Statistical Comparison of Sediment Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2017 to 2022


Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts: 2022 versus Before Year		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
2-Methylnaphthalene	RG_SCOUTDS	0.113	0.006	<0.001	0.984	0.781	2019	<0.001	381
							2020		
							2021		
	RG_FOBCP	0.007	0.052	-	-	0.006	2017	0.167	ns
							2018	0.003	233
							2019	0.951	ns
							2020	0.939	ns
							2021	0.727	ns
	RG_FRUPO	0.531	<0.001	-	-	<0.001	2017	0.001	222
							2018	<0.001	614
							2019	0.023	137
							2020	0.597	ns
							2021	0.535	ns
	RG_FO22	0.526	<0.001	0.003	0.414	0.725	2017	0.003	138
							2018		
							2019		
2020									
2021									
Benzo(b&j)fluoranthene	RG_SCOUTDS	0.030	0.015	<0.001	0.497	0.495	2019	<0.001	445
							2020		
							2021		
	RG_FOBCP	0.026	0.520	-	-	<0.001	2017	0.226	ns
							2018	0.001	253
							2019	0.864	ns
							2020	0.812	ns
							2021	0.824	ns
	RG_FRUPO	0.101	<0.001	-	-	<0.001	2017	0.103	ns
							2018	<0.001	438
							2019	0.397	ns
							2020	0.976	ns
							2021	0.981	ns
	RG_FO22	0.280	<0.001	0.012	0.662	0.105	2017	0.012	164
							2018		
							2019		
2020									
2021									
Chrysene	RG_SCOUTDS	0.163	0.154	<0.001	0.532	0.904	2019	<0.001	619
							2020		
							2021		
	RG_FOBCP	0.009	0.050	-	-	0.042	2017	0.178	ns
							2018	<0.001	328
							2019	0.304	ns
							2020	0.999	ns
							2021	0.945	ns
	RG_FRUPO	0.166	<0.001	-	-	<0.001	2017	0.004	163
							2018	<0.001	695
							2019	0.005	154
							2020	0.618	ns
							2021	0.335	ns
	RG_FO22	0.641	<0.001	<0.001	0.458	0.134	2017	<0.001	265
							2018		
							2019		
2020									
2021									
Fluorene	RG_SCOUTDS	0.304	0.009	<0.001	0.999	0.852	2019	<0.001	462
							2020		
							2021		
	RG_FOBCP	0.003	0.081	-	-	0.010	2017	0.655	ns
							2018	0.012	253
							2019	0.99	ns
							2020	0.734	ns
							2021	0.45	ns
	RG_FRUPO	0.351	<0.001	-	-	<0.001	2017	0.008	203
							2018	<0.001	812
							2019	0.067	129
							2020	0.526	ns
							2021	0.675	ns
	RG_FO22	0.221	<0.001	0.045	0.908	0.801	2017	0.045	157
							2018		
							2019		
2020									
2021									


P-Value for relevant BACI term < 0.1.
 Increase in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.
 Decrease in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

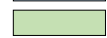
Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated, Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table F.2: Statistical Comparison of Sediment Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2017 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts: 2022 versus Before Year		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Naphthalene	RG_SCOUTDS	0.033	0.003	<0.001	0.999	0.690	2019	<0.001	334
							2020		
							2021		
	RG_FOBCP	0.079	0.063	-	-	0.001	2017	0.048	131
							2018	0.002	245
							2019	0.977	ns
							2020	0.792	ns
							2021	0.787	ns
	RG_FRUPO	0.727	<0.001	-	-	<0.001	2017	<0.001	328
							2018	<0.001	686
							2019	0.011	155
							2020	0.455	ns
							2021	0.363	ns
	RG_FO22	0.924	<0.001	0.001	0.614	0.422	2017	0.001	163
							2018		
							2019		
2020									
2021									
Phenanthrene	RG_SCOUTDS	0.389	0.007	<0.001	0.972	0.932	2019	<0.001	394
							2020		
							2021		
	RG_FOBCP	0.002	0.086	-	-	0.001	2017	0.242	ns
							2018	<0.001	331
							2019	0.636	ns
							2020	1	ns
							2021	0.846	ns
	RG_FRUPO	0.182	<0.001	-	-	<0.001	2017	0.003	175
							2018	<0.001	822
							2019	0.04	112
							2020	0.7	ns
							2021	0.65	ns
	RG_FO22	0.454	<0.001	<0.001	0.653	0.197	2017	<0.001	206
							2018		
							2019		
2020									
2021									
Pyrene	RG_SCOUTDS	0.038	0.029	<0.001	0.810	0.688	2019	<0.001	303
							2020		
							2021		
	RG_FOBCP	0.081	0.112	-	-	<0.001	2017	0.353	ns
							2018	<0.001	268
							2019	0.729	ns
							2020	0.91	ns
							2021	0.774	ns
	RG_FRUPO	0.099	<0.001	-	-	<0.001	2017	1.00	ns
							2018	1.00	ns
							2019	1.00	ns
							2020	1.00	ns
							2021	1.00	ns
	RG_FO22	0.174	<0.001	-	-	0.070	2017	1.00	ns
							2018	1.00	ns
							2019	1.00	ns
2020							1.00	ns	
2021							1.00	ns	

 P-Value for relevant BACI term < 0.1.

 Increase in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

 Decrease in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated, Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table F.3: Calcite Index Values in the Fording River, FRO LAEMP, 2013 to 2022

Biological Monitoring Area	Teck Water Station	Calcite Reach	Regional Calcite Monitoring Program Calcite Index Within Reaches										Calcite Concretion at Benthic Invertebrate Monitoring Areas Within Riffles																		
			2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2015	2016	2017	2018			2019			2020									
RG_HENUP	FR_HC3	HENR3	0.00	0.00	0.00	-	-	-	-	-	0.00	0.02	0.0	0.0	0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-		
RG_FO26	FR_UFR1	FORD12	0.00	0.00	0.00	0.27	-	0.30	0.28	0.15	0.14	0.02	0.0	0.0	0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-		
RG_UFR1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	-	-		
RG_FODHE	FR_FR1	FORD11	0.00	0.00	0.00	-	-	0.30	-	0.18	0.10	0.21	0.0	0.0	0.00	0.00	0.00	-	-	0.00	0.04	0.00	-	-	0.00	0.00	0.00	-	-		
RG_FOUCL	-		0.00	0.00	0.00	-	-	0.30	-	0.18	0.10	0.21	-	-	-	-	-	-	-	0.00	0.08	0.00	-	-	0.00	0.00	0.00	-	-		
RG_FOUNGD	-		0.0	-	0.00	-	0.08	0.00	-	-	0.03	0.08	0.01	-	-	0.00	0.00	0.00	-	-	0.03	0.08	0.01	-	-	0.00	0.00	0.00	-	-	
RG_FODNGD	FR_FRABEC1	-	-	-	-	-	-	-	-	-	-	-	0.0	-	0.00	0.03	0.00	0.06	-	-	0.00	0.01	0.00	-	-	0.15	0.00	0.00	-	-	
RG_MP1	FR_MULTIPLATE	FORD10	0.00	0.00	0.00	-	-	0.60	-	0.52	0.35	0.45	0.0	-	0.00	0.55	0.24	0.28	-	-	0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-	
RG_FOUSH	-		0.00	0.00	0.00	-	-	0.60	-	0.52	0.35	0.45	0.0	-	0.01	0.00	0.00	0.02	-	-	0.12	0.01	0.09	-	-	0.14	0.10	0.00	-	-	
RG_FOUKI	FR_FR2		0.0	0.8	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0.00	0.02	-	-	0.00	0.00	0.02	-	-	0.00	0.00	0.02	-	-	0.00	0.00	0.02	-	-
RG_FOBKS	GH_FR3		0.0	1.0	0.00	0.03	0.00	0.00	-	-	0.01	0.02	0.08	-	-	0.00	0.02	0.08	-	-	0.00	0.02	0.08	-	-	0.00	0.02	0.02	-	-	
RG_SCOUTDS	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	-	-	0.01	0.01	0.00	-	-	
RG_FOBSC	FR_FR4		0.00	0.00	0.00	0.00	0.32	0.70	0.54	0.44	0.25	0.43	-	0.8	0.06	0.00	0.01	0.06	-	-	0.00	0.01	0.00	-	-	0.03	0.13	0.17	-	-	
RG_FOBCP	FR_FRCP1		0.3	0.6	0.07	0.07	0.24	0.14	0.39	0.46	0.08	0.11	0.45	-	-	0.05	0.02	0.30	0.71	0.28	0.00	0.11	0.45	-	-	0.05	0.02	0.30	0.71	0.28	
RG_FRCP1SW	FR_FRCP1SW	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03	-	-	-	-	0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-		
RG_FRUPO	FR_FRRD	FORD8	-	-	-	-	-	-	-	-	-	-	-	-	0.00	0.00	0.06	0.00	-	-	0.10	0.06	0.10	-	-	0.01	0.00	0.00	-	-	
RG_FODPO	GH_PC2		0.31	0.49	0.48	-	-	0.60	-	0.69	0.67	0.70	0.0	0.0	0.00	0.00	0.00	0.01	-	-	0.01	0.01	0.04	-	-	0.02	0.21	0.06	-	-	
RG_FO22	FR_FRABCH		0.0	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RG_FOU EW	FR_FR5	FORD7/6	0.59	0.70	1.04	0.64	0.71	0.80	0.94	1.00	1.16	1.10	0.0	0.0	0.00	0.06	0.00	0.00	-	-	0.14	0.02	0.07	-	-	0.77	0.12	0.00	-	-	

Notes: "-" indicates that no calcite monitoring was completed. Calcite Index (CI) was calculated using binary presence/absence scoring to allow for comparisons over time. See table X.x for Calculated using the proportional calcite presence scoring method (CI').

Table F.3: Calcite Index Values in the Fording River, FRO LAEMP, 2013 to 2022

Biological Monitoring Area	Teck Water Station	Calcite Reach	Calcite Presence at Benthic Invertebrate Monitoring Areas Within Riffles																											
			2021				2022				2015	2016	2017	2018				2019				2020 ^a								
RG_HENUP	FR_HC3	HENR3	0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-	0.1	0.0	0.01	0.00	0.03	0.01	-	-	0.00	0.01	0.03	-	-	0.00	0.03	0.01	-	-
RG_FO26	FR_UFR1	FORD12	0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-	0.9	0.8	0.62	0.88	0.96	0.72	-	-	0.97	0.99	0.98	-	-	0.01	0.03	0.10	-	-
RG_UFR1	-	-	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	0.03	0.05	-	-
RG_FODHE	FR_FR1	FORD11	0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-	0.9	0.0	0.92	0.55	0.36	0.82	-	-	0.12	0.06	0.22	-	-	0.83	0.88	0.67	-	-
RG_FOUCL	-		0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.59	0.00	0.00	-	-
RG_FOUNGD	-		0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-	0.8	-	0.62	0.98	1.00	0.94	-	-	0.45	0.59	0.48	-	-	0.10	0.04	0.13	-	-
RG_FODNGD	FR_FRABEC1	-	0.00	0.00	0.01	-	-	0.00	0.00	0.00	-	-	0.8	-	0.96	0.89	0.93	0.90	-	-	0.36	0.42	0.39	-	-	0.88	0.92	0.80	-	-
RG_MP1	FR_MULTIPATE	FORD10	0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-	1.0	-	0.95	0.88	0.89	0.83	-	-	0.45	0.55	0.71	-	-	0.79	0.92	0.72	-	-
RG_FOUSH	-		0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-	1.0	-	0.89	0.97	0.96	0.90	-	-	0.99	1.00	0.99	-	-	0.91	0.79	0.88	-	-
RG_FOUKI	FR_FR2		0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-	1.0	1.8	0.78	0.61	0.81	0.58	-	-	0.46	0.51	0.49	-	-	0.49	0.51	0.84	-	-
RG_FOBKS	GH_FR3	FORD8	0.00	0.07	0.00	-	-	0.00	0.20	0.00	-	-	0.9	2.0	0.48	0.79	0.48	0.66	-	-	0.74	0.86	0.80	-	-	0.55	0.60	0.55	-	-
RG_SCOUTDS	-		0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.70	0.78	0.53	-	-
RG_FOBSC	FR_FR4		0.00	0.00	0.00	-	-	0.01	0.01	0.00	-	-	1.0	1.8	1.00	0.99	1.00	0.89	-	-	0.25	0.33	0.22	-	-	0.64	0.78	0.77	-	-
RG_FOBCP	FR_FRCP1	FORD7/6	0.00	0.00	0.02	0.04	0.09	0.01	0.07	0.10	0.02	0.00	1.0	1.6	0.99	0.81	0.94	0.92	1.00	0.97	0.85	0.50	0.85	-	-	0.87	0.80	0.86	-	-
RG_FRCP1SW	FR_FRCP1SW		0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-	-	-	1.00	-	-	-	-	-	0.41	0.09	0.70	-	-	0.18	0.53	0.56	-	-
RG_FRUPO	FR_FRRD		0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-	-	-	1.00	0.95	0.98	1.00	-	-	1.00	0.61	0.89	-	-	0.15	0.11	0.10	-	-
RG_FODPO	GH_PC2	FORD8	0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-	0.9	1.0	0.93	0.93	0.94	0.99	-	-	0.45	0.51	0.87	-	-	0.82	0.84	0.85	-	-
RG_FO22	FR_FRABCH		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.8	-	0.96	1.00	0.82	0.96	0.90	0.95	0.89	0.90	0.76	-	-	0.42	0.80	0.72	-	-
RG_FOU EW	FR_FR5	FORD7/6	0.00	0.00	0.00	-	-	0.00	0.06	0.79	-	-	1.0	-	0.99	1.00	1.00	1.00	-	-	0.89	0.95	0.51	-	-	0.98	0.93	0.84	-	-

Notes: "-" indicates that no calcite monitoring was completed. Calcite Index (CI) was calculated using binary presence/absence scoring to allow for comparisons over time. See table X.x for Calculated using the proportional calcite presence scoring method (CI').

Table F.3: Calcite Index Values in the Fording River, FRO LAEMP, 2013 to 2022

Biological Monitoring Area	Teck Water Station	Calcite Reach	Calcite Index at Benthic Invertebrate Monitoring Areas Within Riffles																																					
			2021					2022					2015	2016	2017	2018					2019					2020 ^a					2021					2022				
RG_HENUP	FR_HC3	HENR3	0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-	0.1	0.0	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.00	0.00	0.00	-	-
RG_FO26	FR_UFR1	FORD12	0.13	0.05	0.12	-	-	0.03	0.04	0.01	-	-	0.9	0.8	0.6	0.9	1.0	0.7	-	-	1.0	1.0	1.0	-	-	0.0	0.0	0.1	-	-	0.1	0.1	0.1	-	-	0.03	0.04	0.01	-	-
RG_UFR1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
RG_FODHE	FR_FR1	FORD11	0.53	0.54	0.25	-	-	0.17	0.09	0.01	-	-	0.9	0.0	0.9	0.6	0.4	0.8	-	-	0.2	0.1	0.1	-	-	0.8	0.9	0.7	-	-	0.5	0.5	0.3	-	-	0.17	0.09	0.01	-	-
RG_FOUCL	-		0.02	0.01	0.03	-	-	0.00	0.00	0.04	-	-	-	-	-	-	-	-	-	-	0.9	1.1	1.0	-	-	0.6	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.00	0.00	0.04	-	-
RG_FOUNGD	-		0.07	0.12	0.15	-	-	0.64	0.50	0.03	-	-	0.8	-	0.6	1.0	1.1	0.9	-	-	0.5	0.7	0.5	-	-	0.1	0.0	0.1	-	-	0.1	0.1	0.2	-	-	0.64	0.50	0.03	-	-
RG_FODNGD	FR_FRABEC1	-	0.15	0.00	0.14	-	-	0.54	0.62	0.59	-	-	0.8	-	1.0	0.9	0.9	1.0	-	-	0.4	0.4	0.4	-	-	1.0	0.9	0.8	-	-	0.2	0.0	0.2	-	-	0.54	0.62	0.59	-	-
RG_MP1	FR_MULTIPATE	FORD10	0.37	0.09	0.05	-	-	0.44	0.44	0.39	-	-	1.0	-	1.0	1.4	1.1	1.1	-	-	0.5	0.6	0.7	-	-	0.8	0.9	0.7	-	-	0.4	0.1	0.1	-	-	0.44	0.44	0.39	-	-
RG_FOUSH	-		0.19	0.04	0.39	-	-	0.21	0.57	0.50	-	-	1.0	-	0.9	1.0	1.0	0.9	-	-	1.1	1.0	1.1	-	-	1.1	0.9	0.9	-	-	0.2	0.0	0.4	-	-	0.21	0.57	0.50	-	-
RG_FOUKI	FR_FR2		0.39	0.36	0.42	-	-	0.24	0.47	0.28	-	-	1.0	1.8	0.8	0.6	0.8	0.6	-	-	0.5	0.5	0.5	-	-	0.5	0.5	0.9	-	-	0.4	0.4	0.4	-	-	0.24	0.47	0.28	-	-
RG_FOBKS	GH_FR3	FORD8	0.19	0.19	0.21	-	-	0.09	0.25	0.03	-	-	0.9	2.0	0.5	0.8	0.5	0.7	-	-	0.8	0.9	0.9	-	-	0.7	0.8	0.5	-	-	0.2	0.3	0.2	-	-	0.09	0.45	0.03	-	-
RG_SCOUTDS	-		0.19	0.00	0.01	-	-	0.43	0.53	0.49	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	-	-	0.6	0.6	0.6	-	-	0.2	0.0	0.0	-	-	0.43	0.53	0.49	-	-
RG_FOBSC	FR_FR4		0.01	0.29	0.10	-	-	0.25	0.09	0.18	-	-	1.2	1.8	1.1	1.0	1.0	1.0	-	-	0.3	0.2	0.3	-	-	0.7	0.9	0.9	-	-	0.0	0.3	0.2	-	-	0.26	0.10	0.18	-	-
RG_FOBCP	FR_FRCP1	FORD7/6	0.15	0.15	0.67	0.32	0.22	0.17	0.32	0.15	0.19	0.12	1.3	1.6	1.1	0.9	1.2	1.1	1.4	1.4	0.9	0.6	1.3	-	-	0.9	0.8	1.2	1.7	1.2	0.2	0.2	0.7	0.4	0.3	0.18	0.39	0.25	0.21	0.12
RG_FRCP1SW	FR_FRCP1SW		0.38	0.52	0.77	-	-	0.58	0.47	0.38	-	-	-	-	1.0	-	-	-	-	-	0.4	0.1	0.7	-	-	0.2	0.5	0.6	-	-	0.4	0.5	0.8	-	-	0.58	0.47	0.38	-	-
RG_FRUPO	FR_FRRD		0.89	0.75	0.78	-	-	0.78	0.95	0.91	-	-	-	-	1.0	1.0	1.0	1.0	-	-	1.0	0.7	1.1	-	-	0.1	0.1	0.2	-	-	0.9	0.8	0.8	-	-	0.78	0.95	0.91	-	-
RG_FODPO	GH_PC2	FORD8	0.59	0.84	0.88	-	-	0.16	0.41	0.61	-	-	0.9	1.0	0.9	0.9	0.9	1.0	-	-	0.5	0.5	0.9	-	-	0.8	1.1	0.9	-	-	0.6	0.8	0.9	-	-	0.16	0.41	0.61	-	-
RG_FO22	FR_FRABCH		0.52	0.60	0.49	0.48	0.70	0.02	0.09	0.44	0.25	0.39	0.8	-	1.0	1.0	0.8	1.0	0.9	1.0	0.9	0.8	0.9	0.9	0.5	0.4	0.8	0.7	0.9	0.7	0.5	0.6	0.5	0.5	0.7	0.02	0.09	0.46	0.25	0.39
RG_FOU EW	FR_FR5	FORD7/6	0.83	0.62	0.51	-	-	0.10	0.56	0.84	-	-	1.0	1.0	1.0	1.1	1.0	1.0	-	-	0.6	1.0	1.1	-	-	1.8	1.1	0.8	-	-	0.8	0.6	0.5	-	-	0.10	0.62	1.63	-	-

Notes: "-" indicates that no calcite monitoring was completed. Calcite Index (CI) was calculated using binary presence/absence scoring to allow for comparisons over time. See table X.x for Calculated using the proportional calcite presence scoring method (CI').

Table F.4: Calcite Index Values, FRO LAEMP, September 2022

Biological Monitoring Area		Calcite Reach	Regional Calcite Monitoring Program Calcite Index Within Reaches		Calcite Index at Benthic Invertebrate Monitoring Areas Within Riffles	
			CI	CI'	CI	CI'
Reference	RG_HENUP	HENR3	0.017	0.0057	0.00	0.00
	RG_FO26	FORD12	0.15	0.034	0.03	0.00
Mine-Exposed	RG_FODHE	FORD11	0.21	0.035	0.09	0.01
	RG_FOUCL				0.01	0.00
	RG_FOUNGD				0.39	0.11
	RG_FODNGD	-	-	-	0.58	0.12
	RG_MP1	FORD10	0.45	0.12	0.42	0.09
	RG_FOUSH				0.43	0.09
	RG_FOUKI				0.33	0.08
	RG_SCOUTDS	FORD9	0.43	0.10	0.48	0.09
	RG_FOBKS				0.19	0.12
	RG_FOBSC				0.18	0.04
	RG_FOBBCP				0.23	0.10
	RG_FRCP1SW				0.48	0.10
	RG-FRSCH2	FORD8	0.70	0.31	-	-
	RG_FRUPO				0.85	0.34
	RG_FODPO				0.88	0.30
	RG_FO22				0.39	0.11
RG_FOU EW	FORD7/6	1.1	0.80	0.78	0.52	

Notes: "-" indicates that no calcite monitoring was completed.
 CI represents calcite index determined by presence and CI' represents calcite index determined by fraction of rock having calcite.

APPENDIX G

**BENTHIC
INVERTEBRATES**

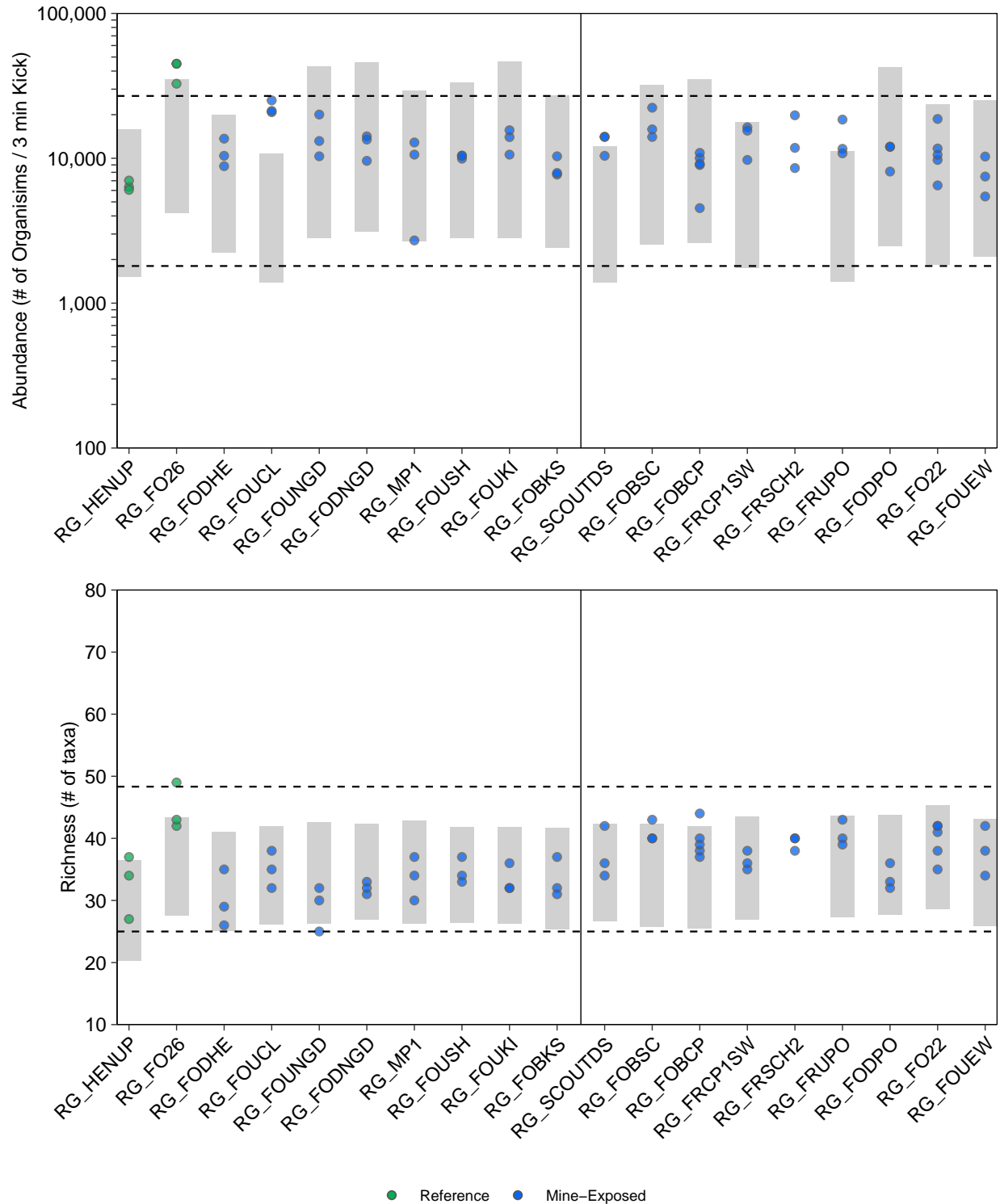


Figure G.1: Benthic Invertebrate Abundance and Richness, FRO LAEMP, September 2022

Notes: Vertical black line denotes upstream and downstream of the FRO-S AWTF outfall location. Site specific normal ranges developed using regression models for the RAEMP (Minnow 2020a) are shown, when applicable, with grey shading (Minnow 2020a). Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

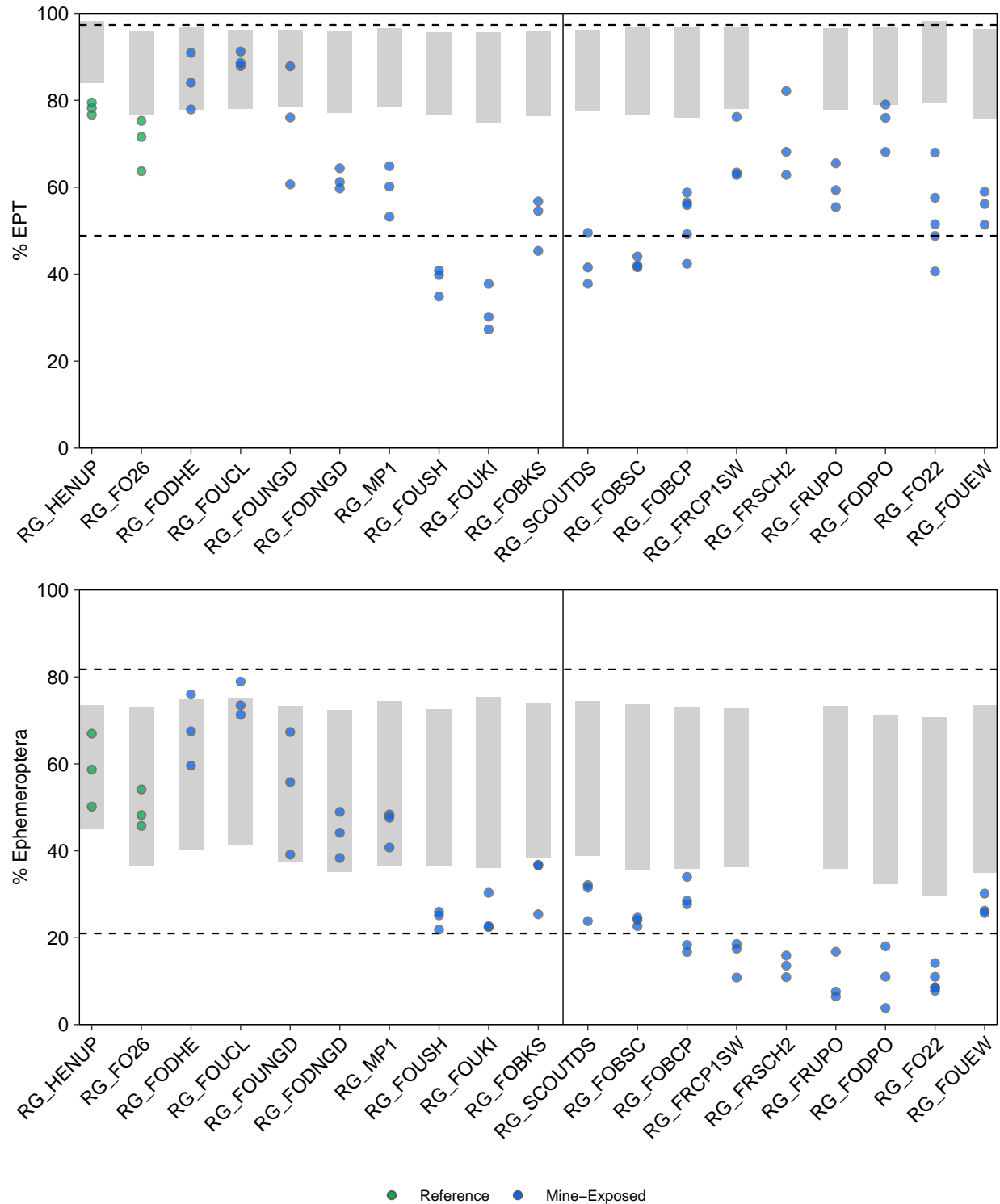


Figure G.2: Benthic Invertebrate % EPT and % Ephemeroptera, FRO LAEMP, September 2022

Notes: Vertical black line denotes upstream and downstream of the FRO-S AWTF outfall location. Site specific normal ranges developed using regression models for the RAEMP (Minnow 2020a) are shown, when applicable, with grey shading (Minnow 2020a). Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

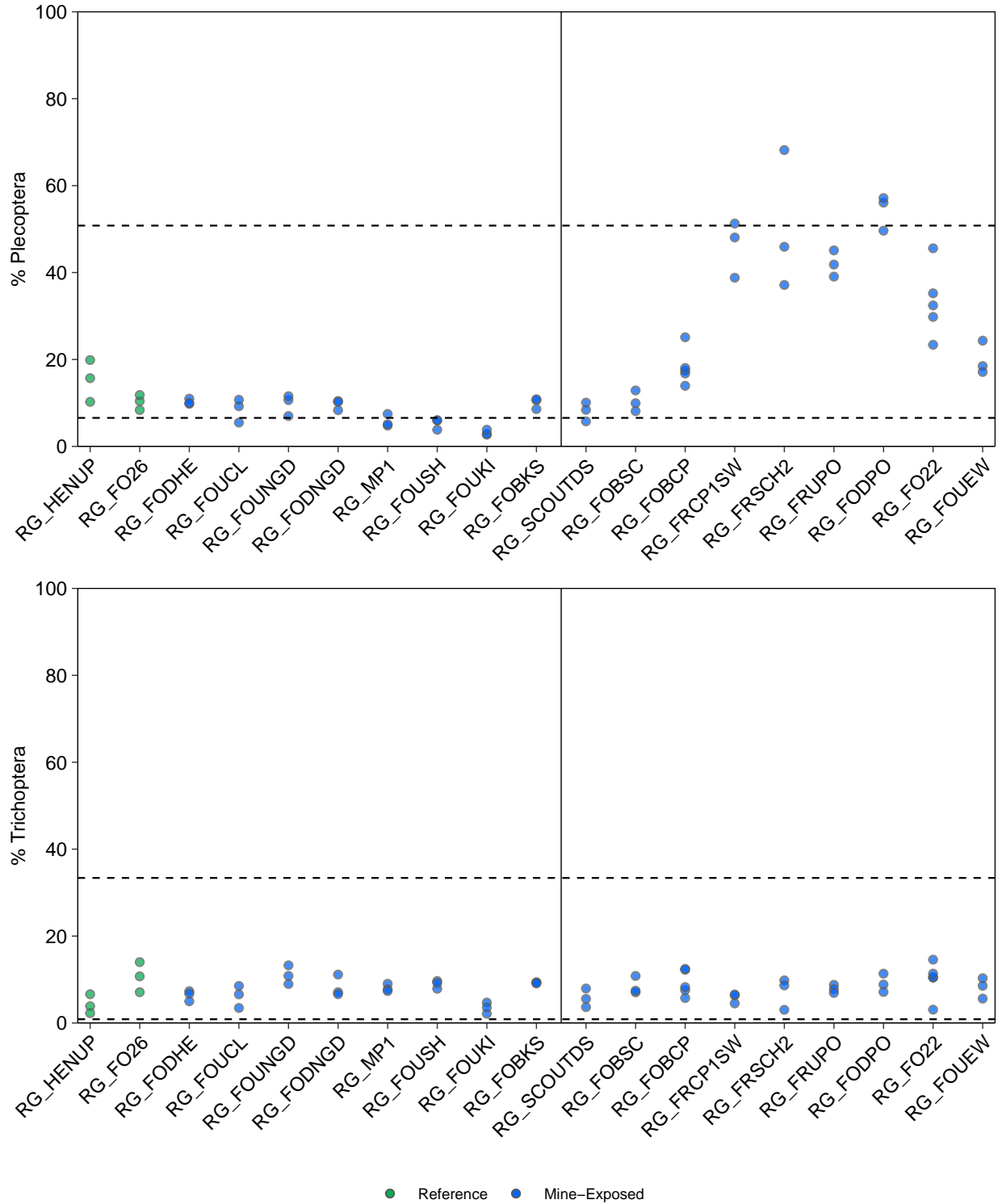


Figure G.3: Benthic Invertebrate % Plecoptera and % Trichoptera, FRO LAEMP, September 2022

Notes: Vertical black line denotes upstream and downstream of the FRO-S AWTF outfall location. Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

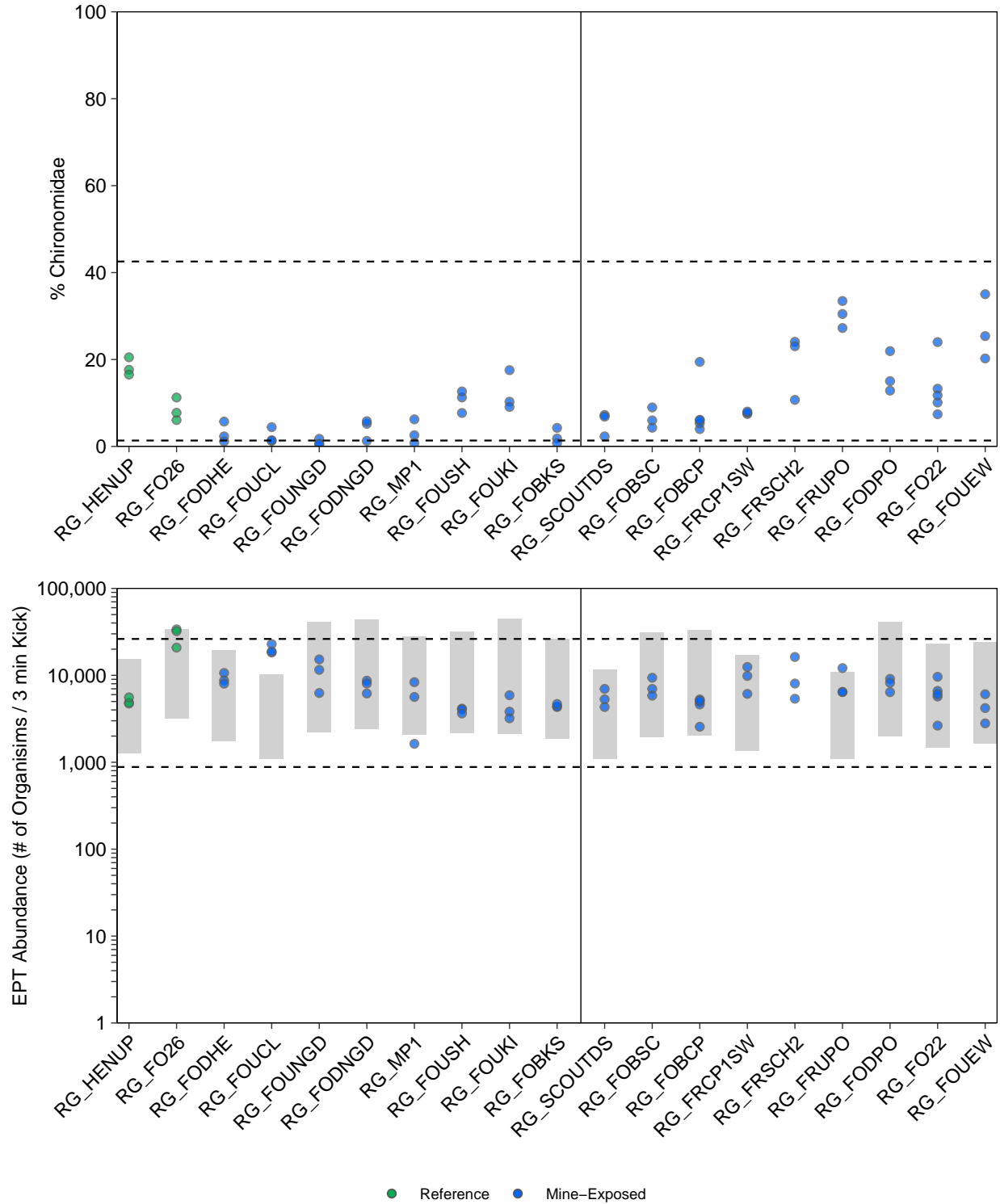


Figure G.4: Benthic Invertebrate % Chironomidae and EPT Abundance, FRO LAEMP, September 2022

Notes: Vertical black line denotes upstream and downstream of the FRO-S AWTF outfall location. Site specific normal ranges developed using regression models for the RAEMP (Minnow 2020a) are shown, when applicable, with grey shading (Minnow 2020a). Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

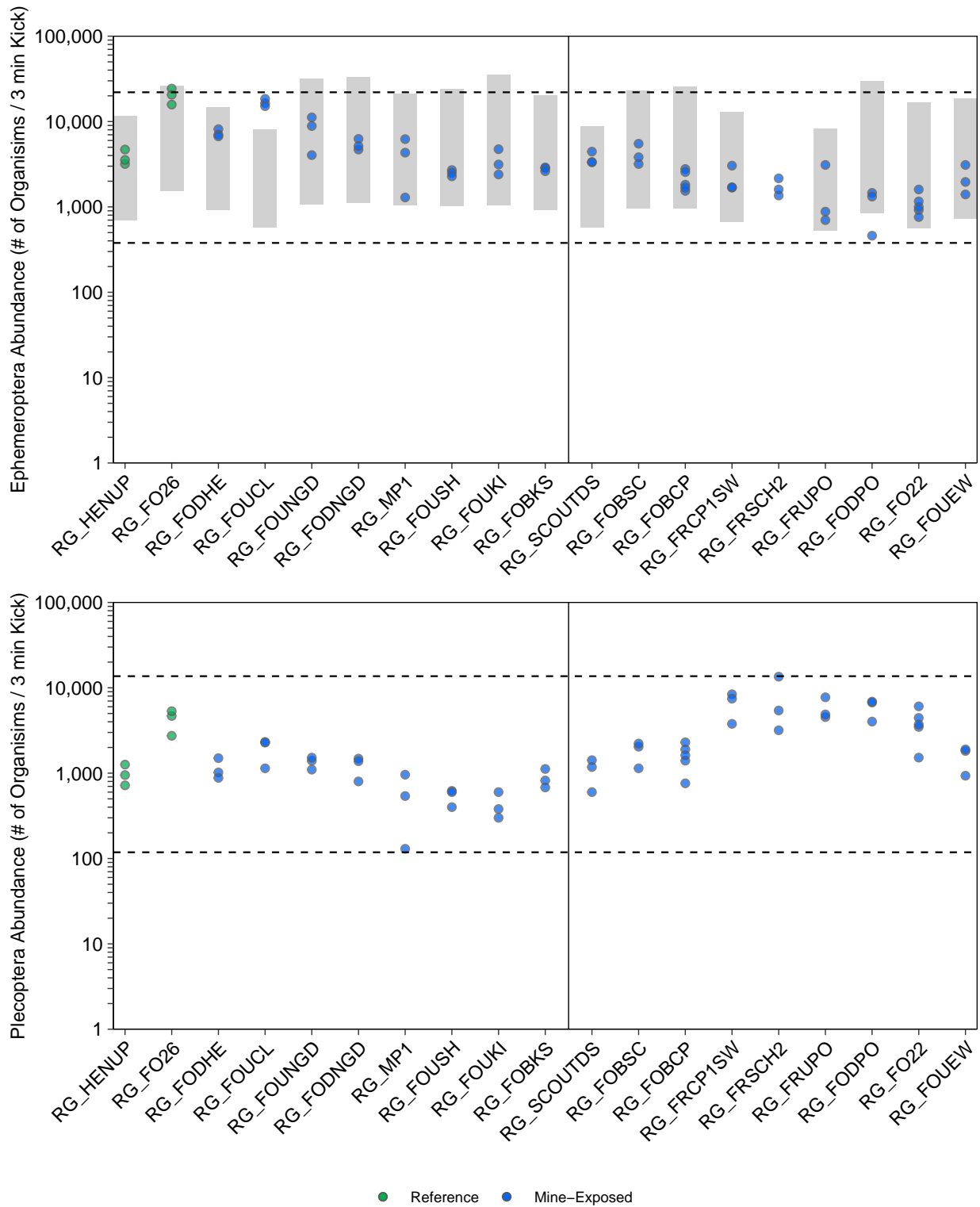


Figure G.5: Benthic Invertebrate Ephemeroptera Abundance and Plecoptera Abundance, FRO LAEMP, September 2022

Notes: Vertical black line denotes upstream and downstream of the FRO-S AWTF outfall location. Site specific normal ranges developed using regression models for the RAEMP (Minnow 2020a) are shown, when applicable, with grey shading (Minnow 2020a). Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

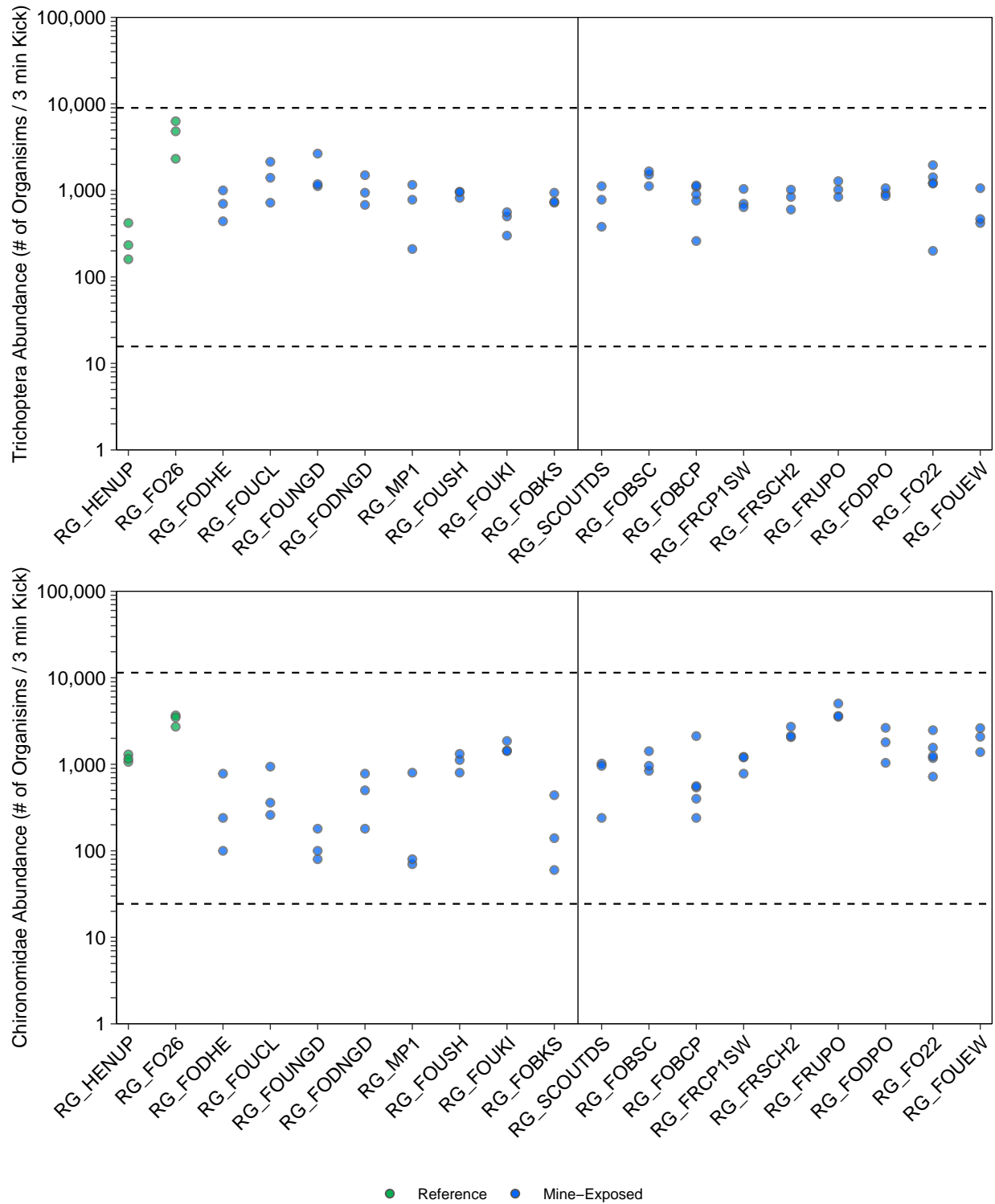


Figure G.6: Benthic Invertebrate Trichoptera Abundance and Chironomidae Abundance, FRO LAEMP, September 2022

Notes: Vertical black line denotes upstream and downstream of the FRO-S AWTF outfall location. Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

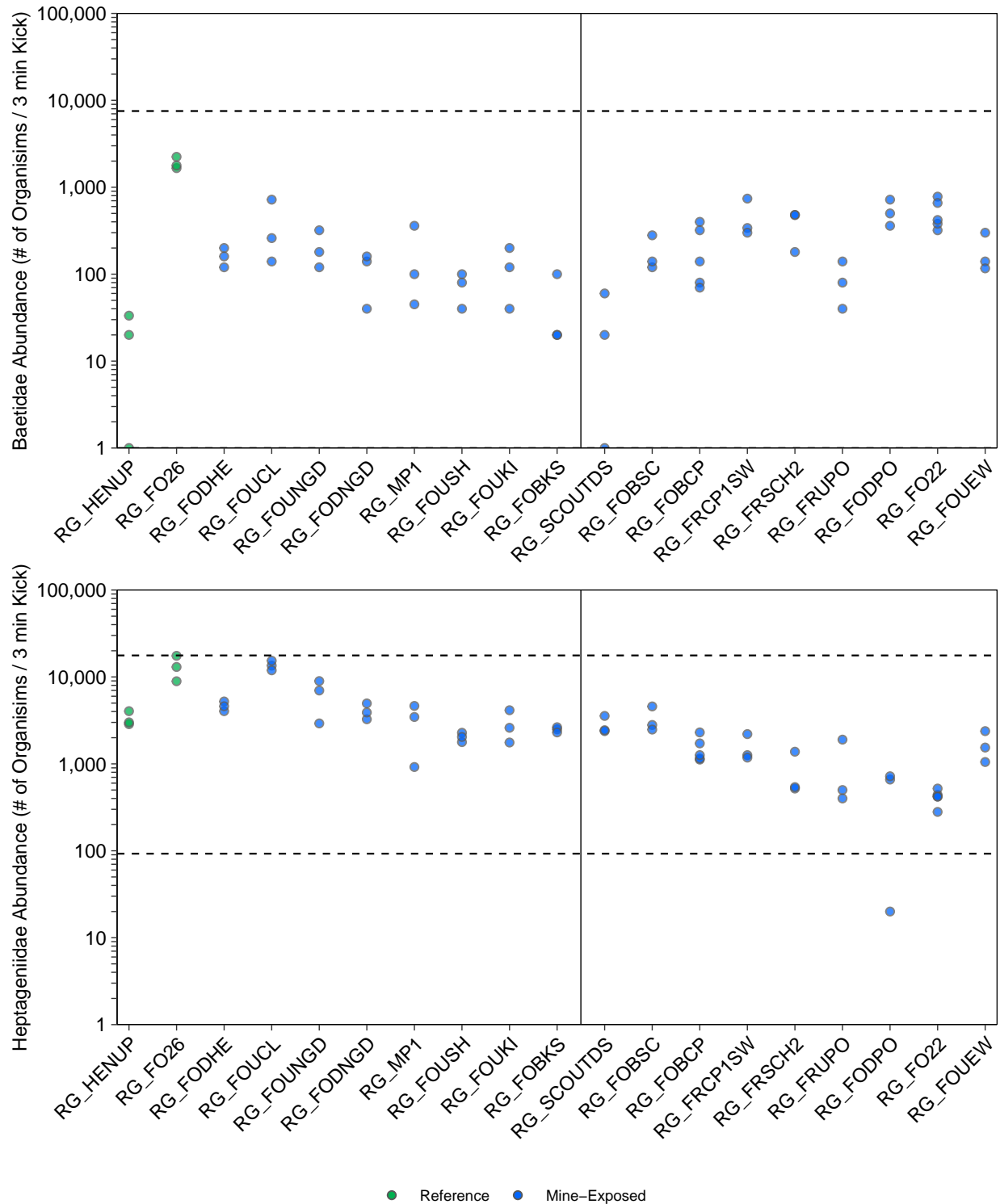


Figure G.7: Benthic Invertebrate Baetidae Abundance and Heptageniidae Abundance, FRO LAEMP, September 2022

Notes: Vertical black line denotes upstream and downstream of the FRO-S AWTF outfall location. Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

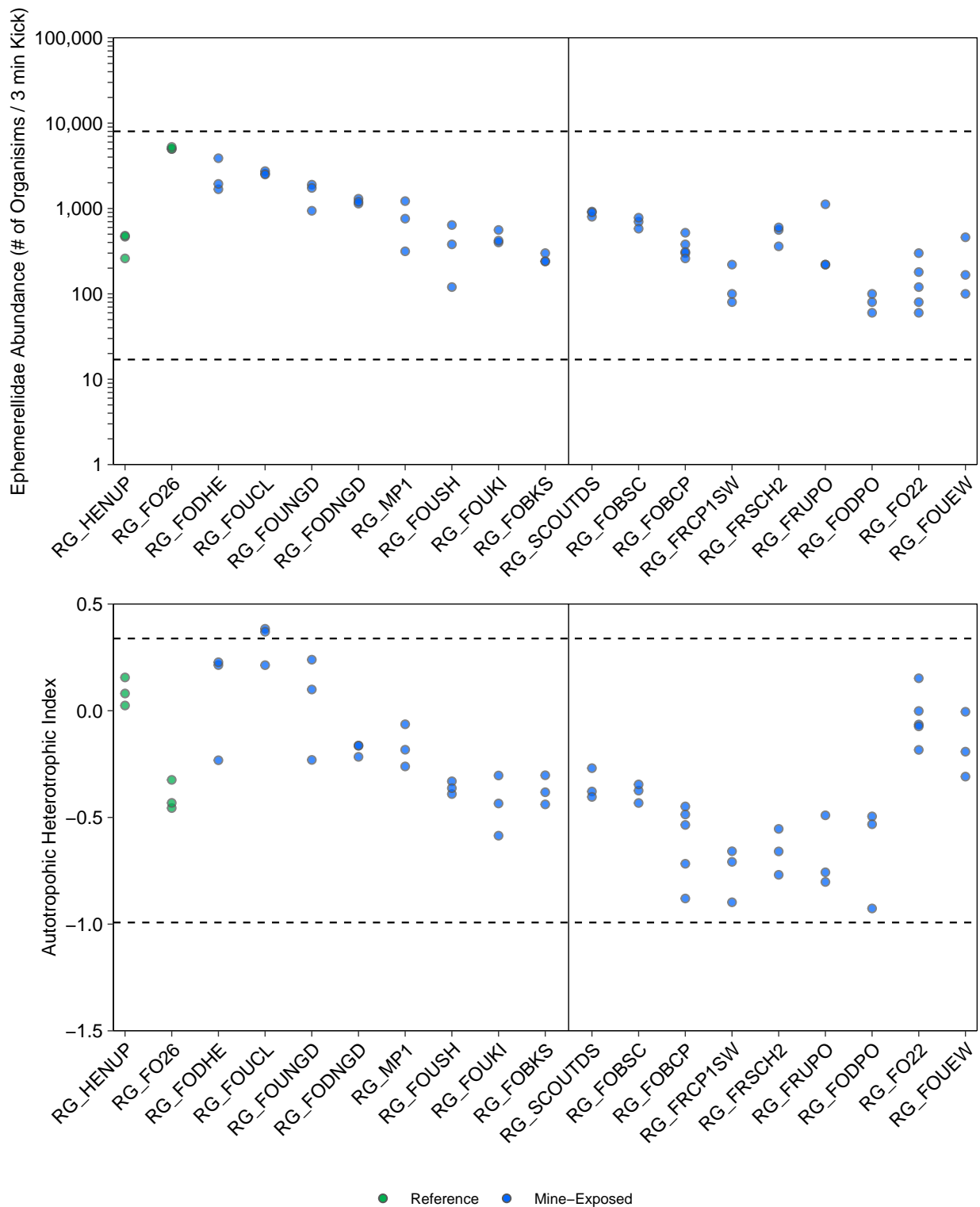


Figure G.8: Benthic Invertebrate Ephemerelellidae Abundance and Autotrophic Heterotrophic Index, FRO LAEMP, September 2022

Notes: Vertical black line denotes upstream and downstream of the FRO-S AWTF outfall location. Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

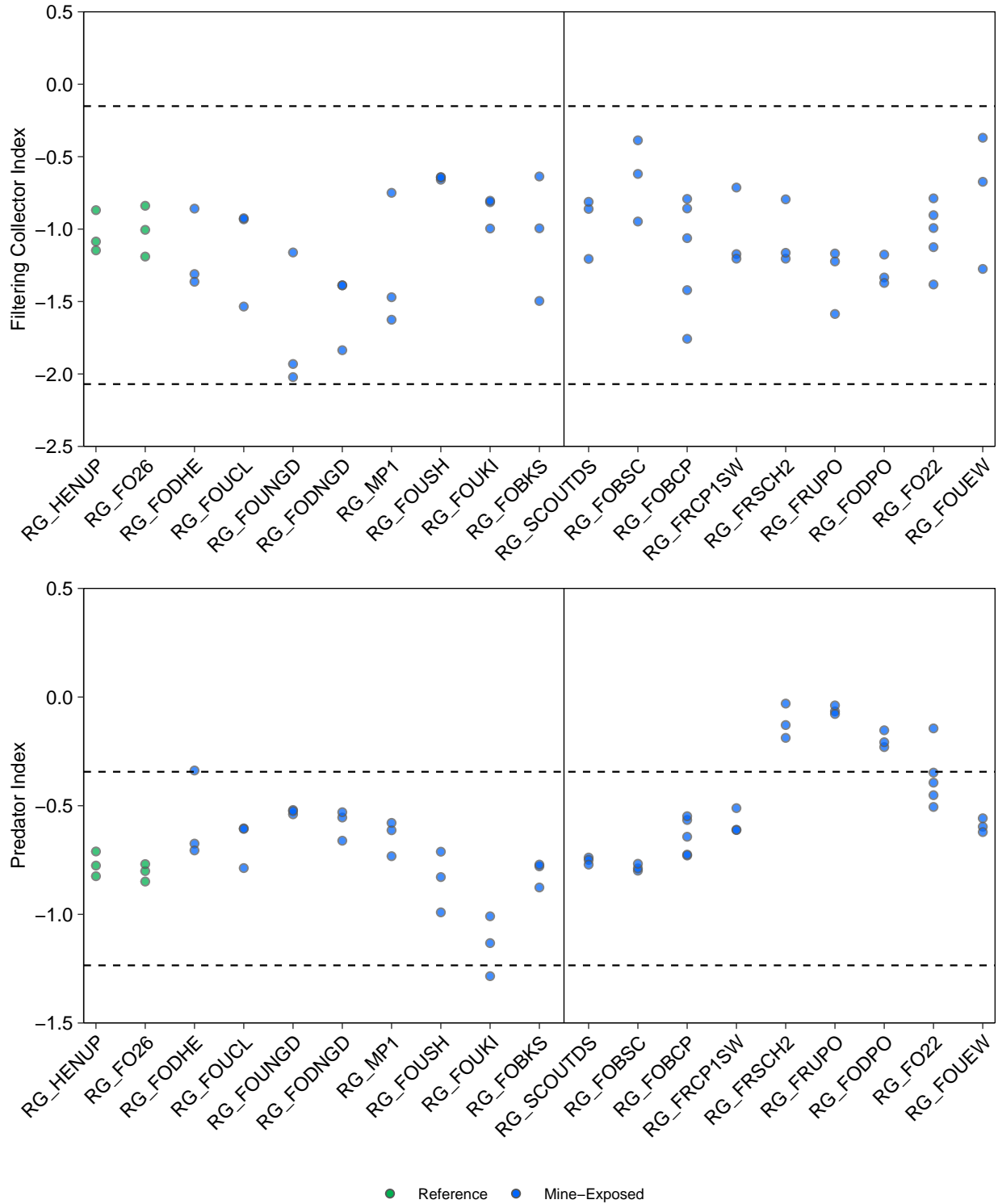


Figure G.9: Benthic Invertebrate Filtering Collector Index and Predator Index, FRO LAEMP, September 2022

Notes: Vertical black line denotes upstream and downstream of the FRO-S AWTF outfall location. Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

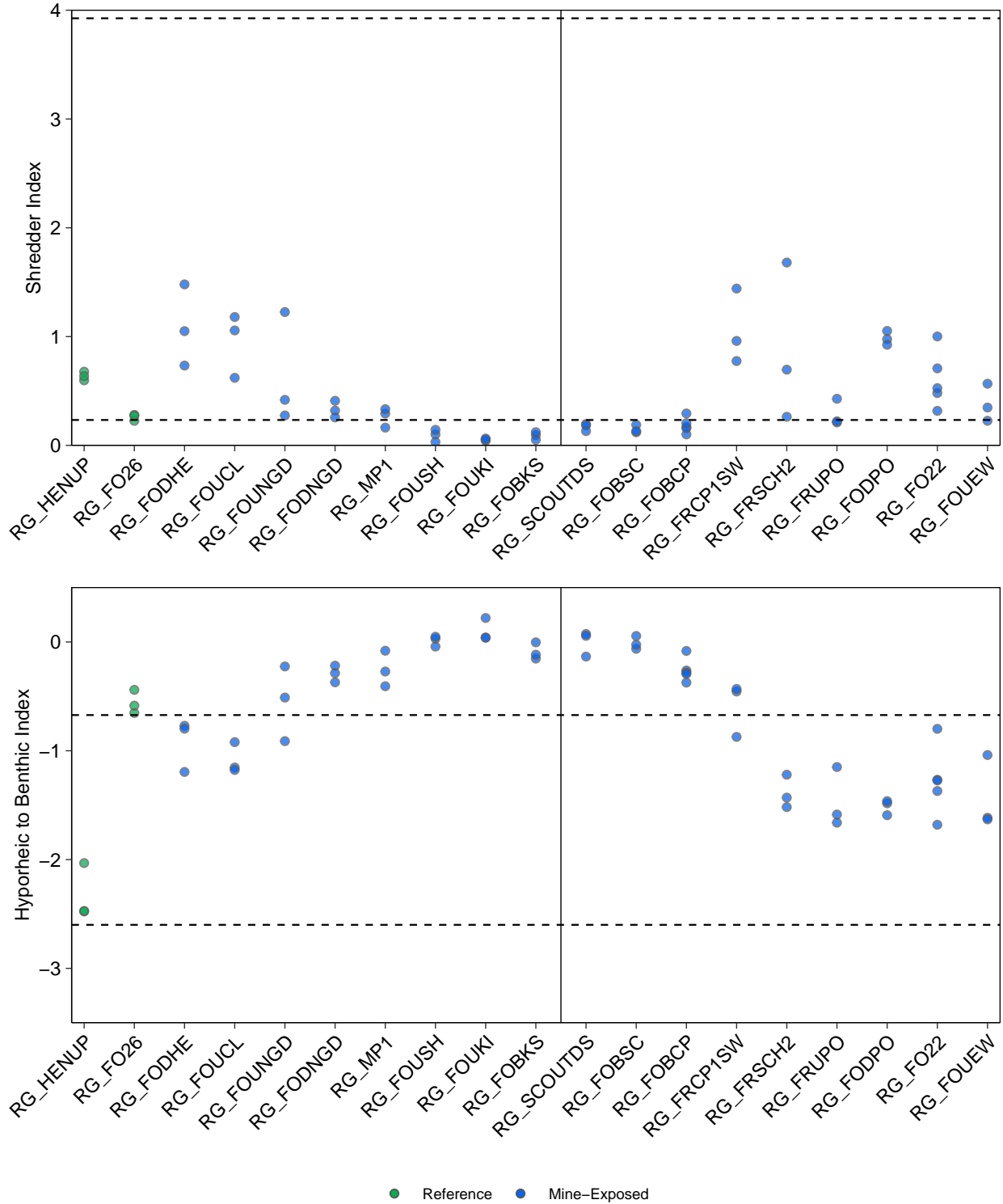


Figure G.10: Benthic Invertebrate Shredder Index and Hyporheic to Benthic Index, FRO LAEMP, September 2022

Notes: Vertical black line denotes upstream and downstream of the FRO-S AWTF outfall location. Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

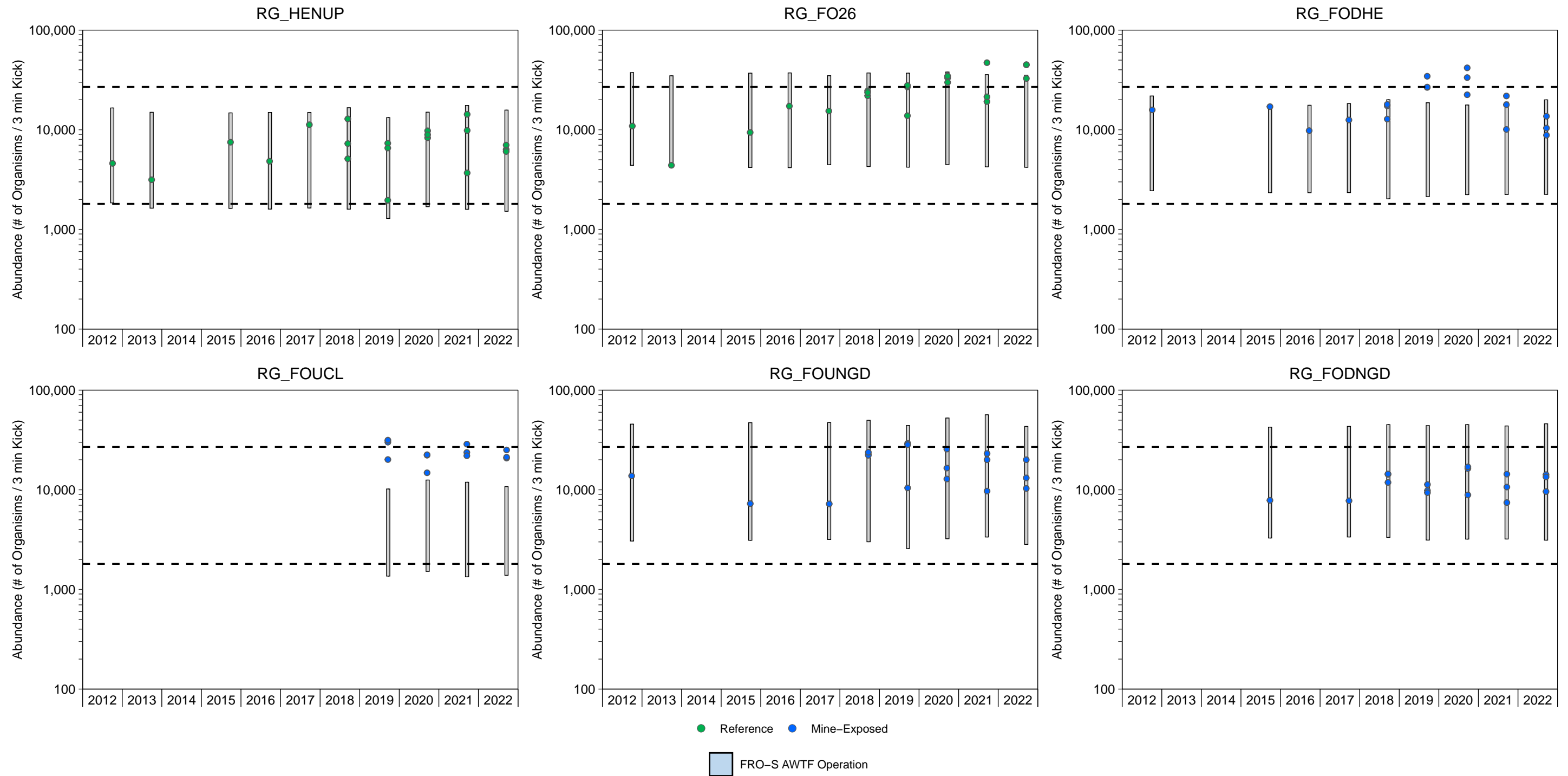


Figure G.11: Benthic Invertebrate Abundance in September, FRO LAEMP, 2012 to 2022

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

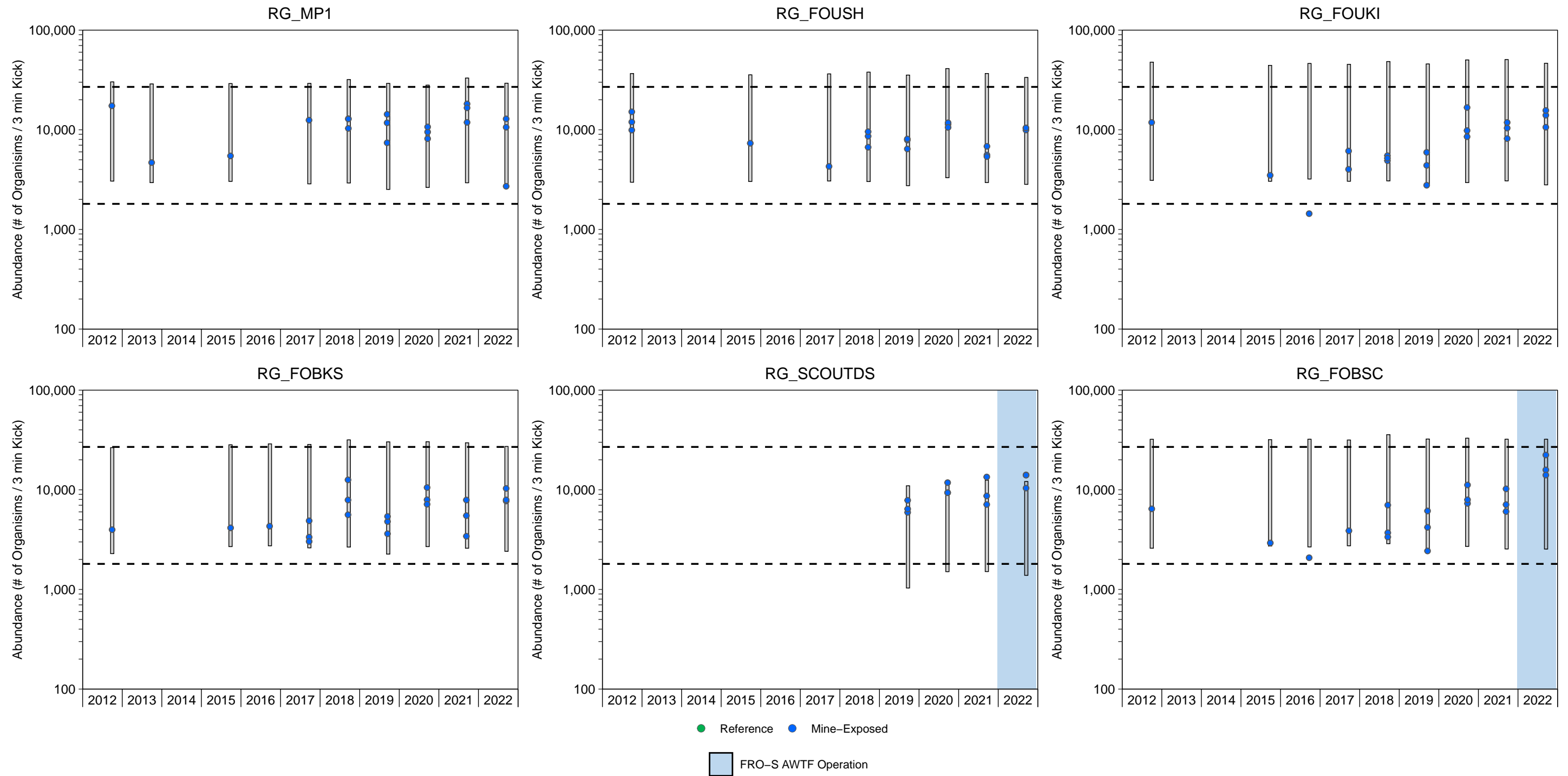


Figure G.11: Benthic Invertebrate Abundance in September, FRO LAEMP, 2012 to 2022

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

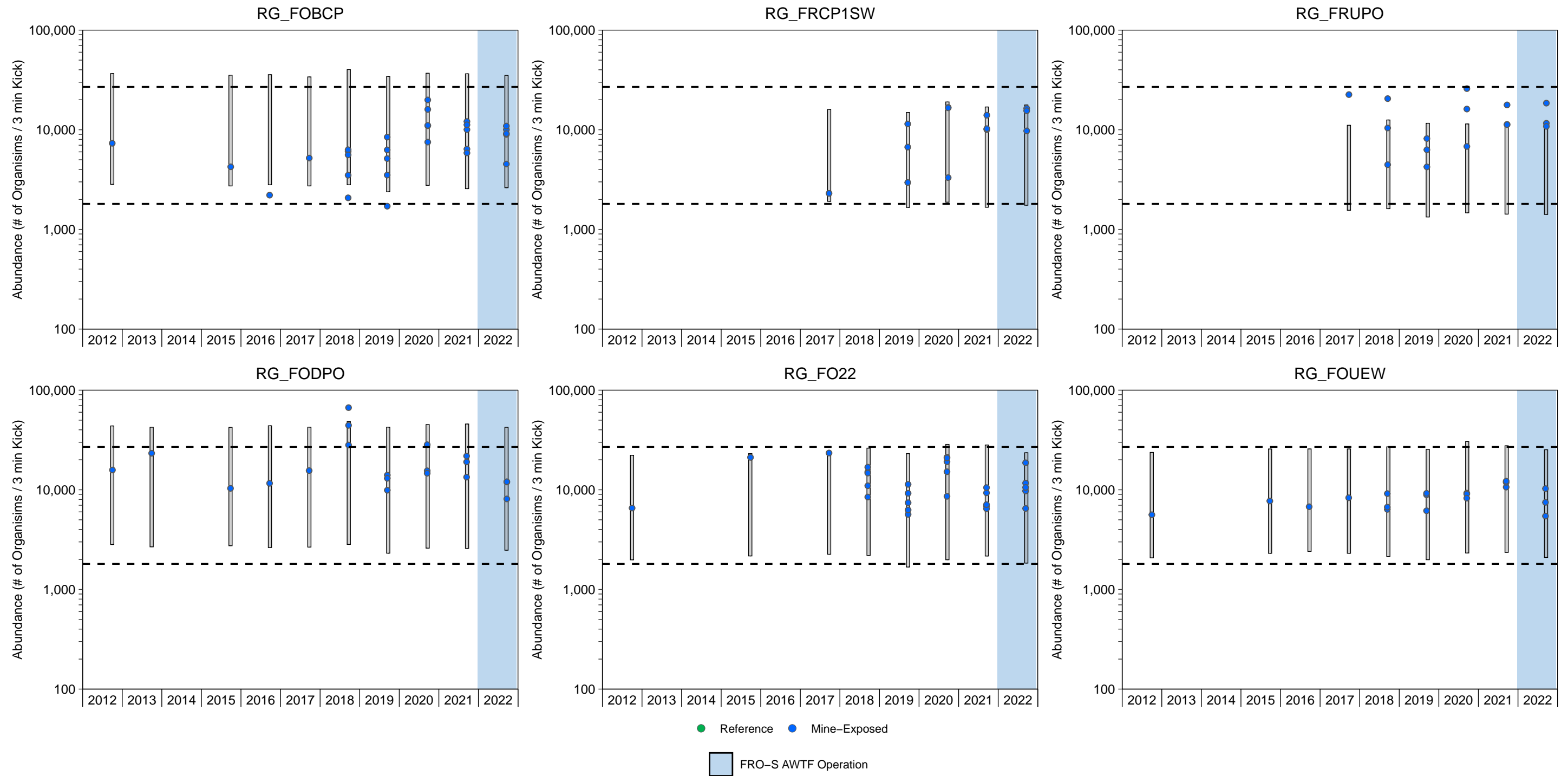


Figure G.11: Benthic Invertebrate Abundance in September, FRO LAEMP, 2012 to 2022

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

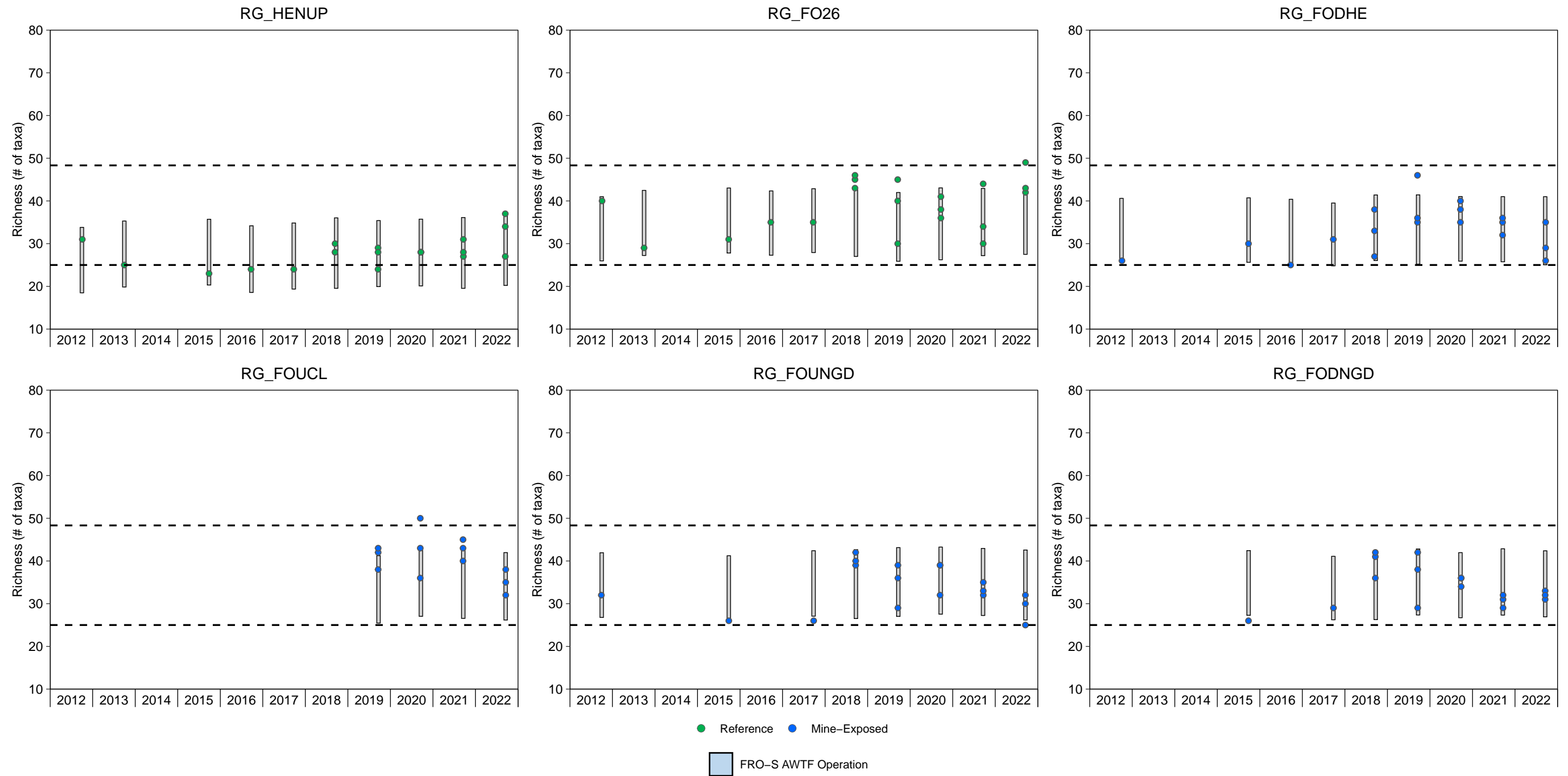


Figure G.12: Benthic Invertebrate Richness in September, FRO LAEMP, 2012 to 2022

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

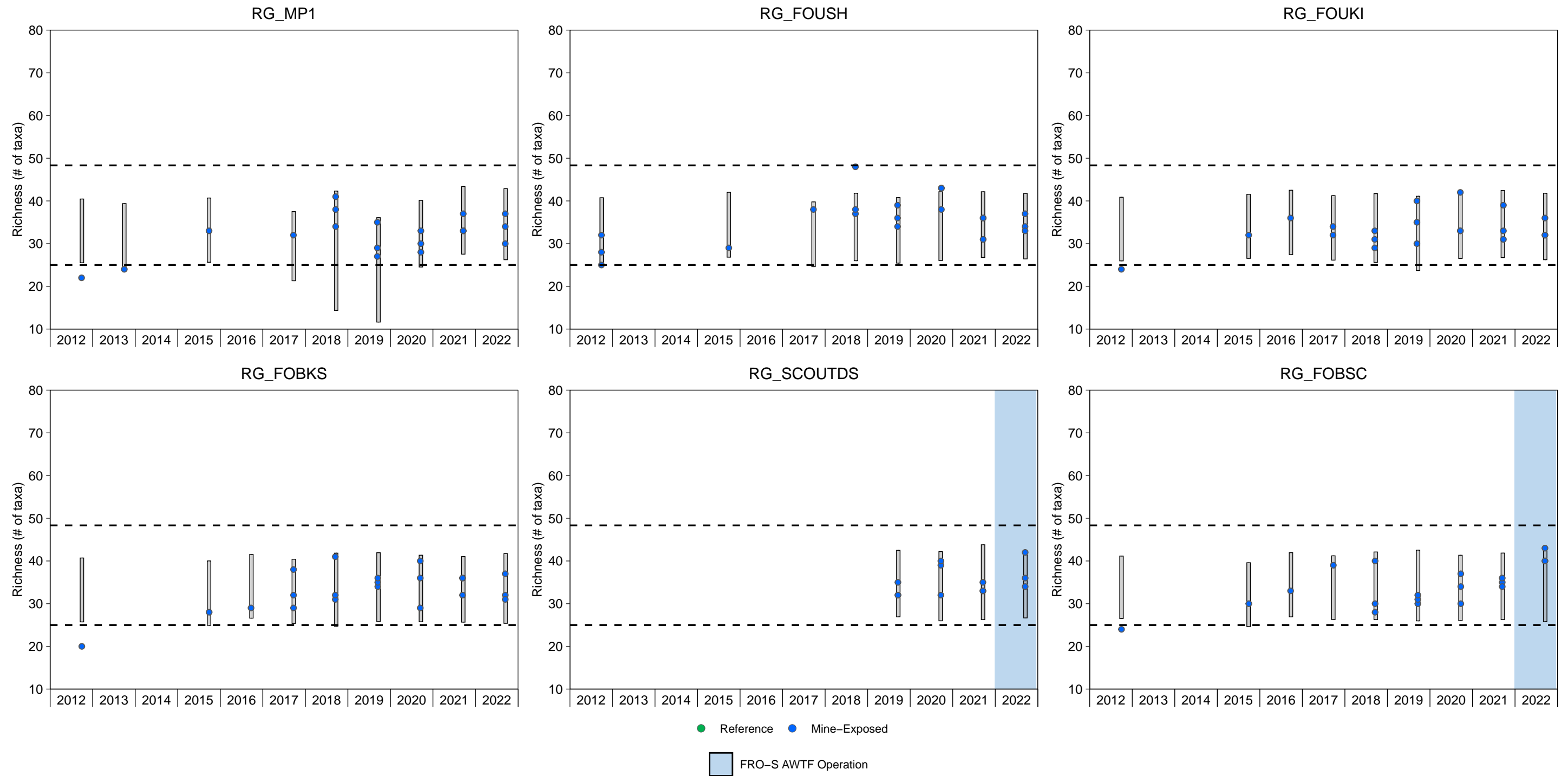


Figure G.12: Benthic Invertebrate Richness in September, FRO LAEMP, 2012 to 2022

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

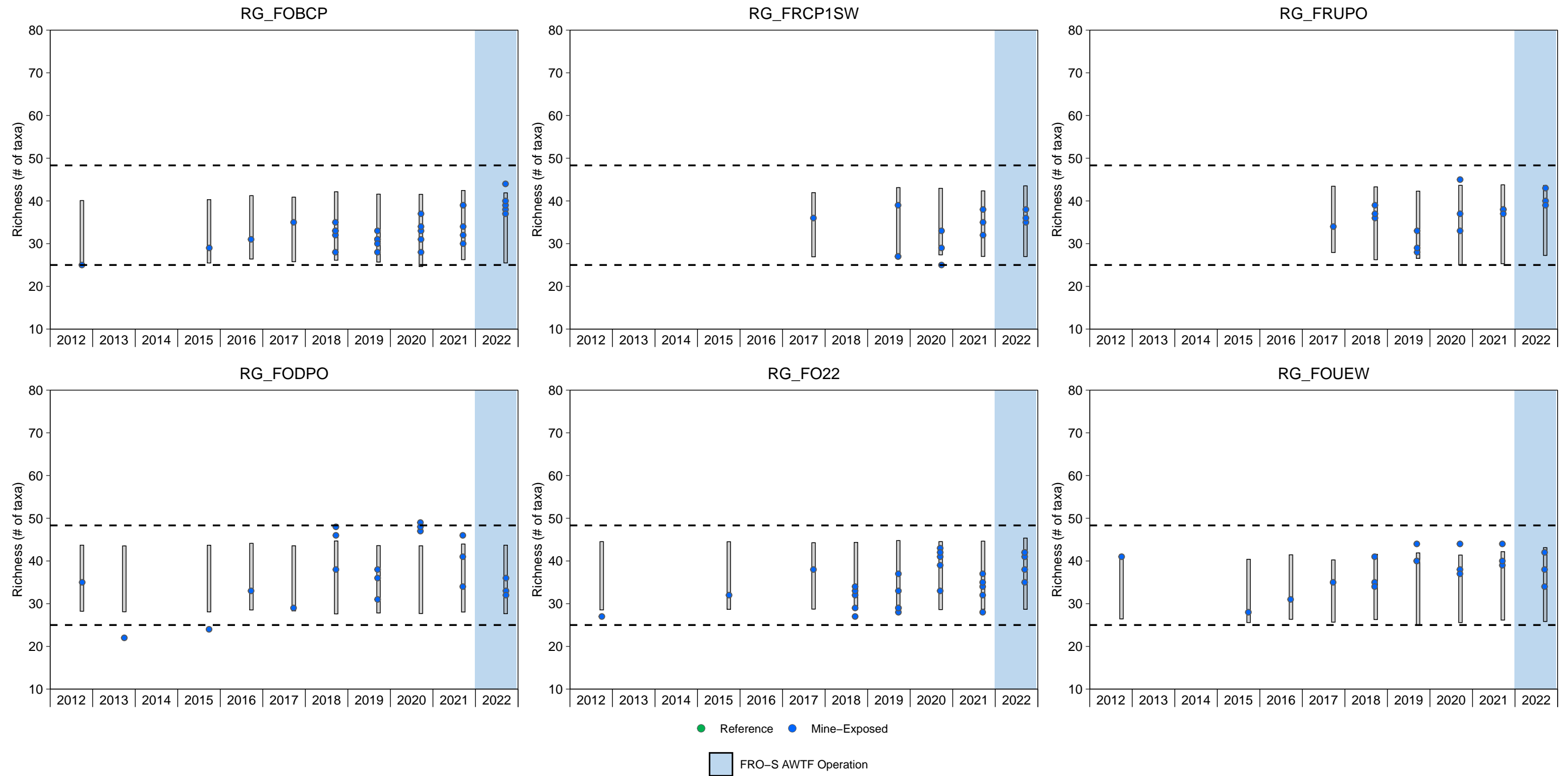


Figure G.12: Benthic Invertebrate Richness in September, FRO LAEMP, 2012 to 2022

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

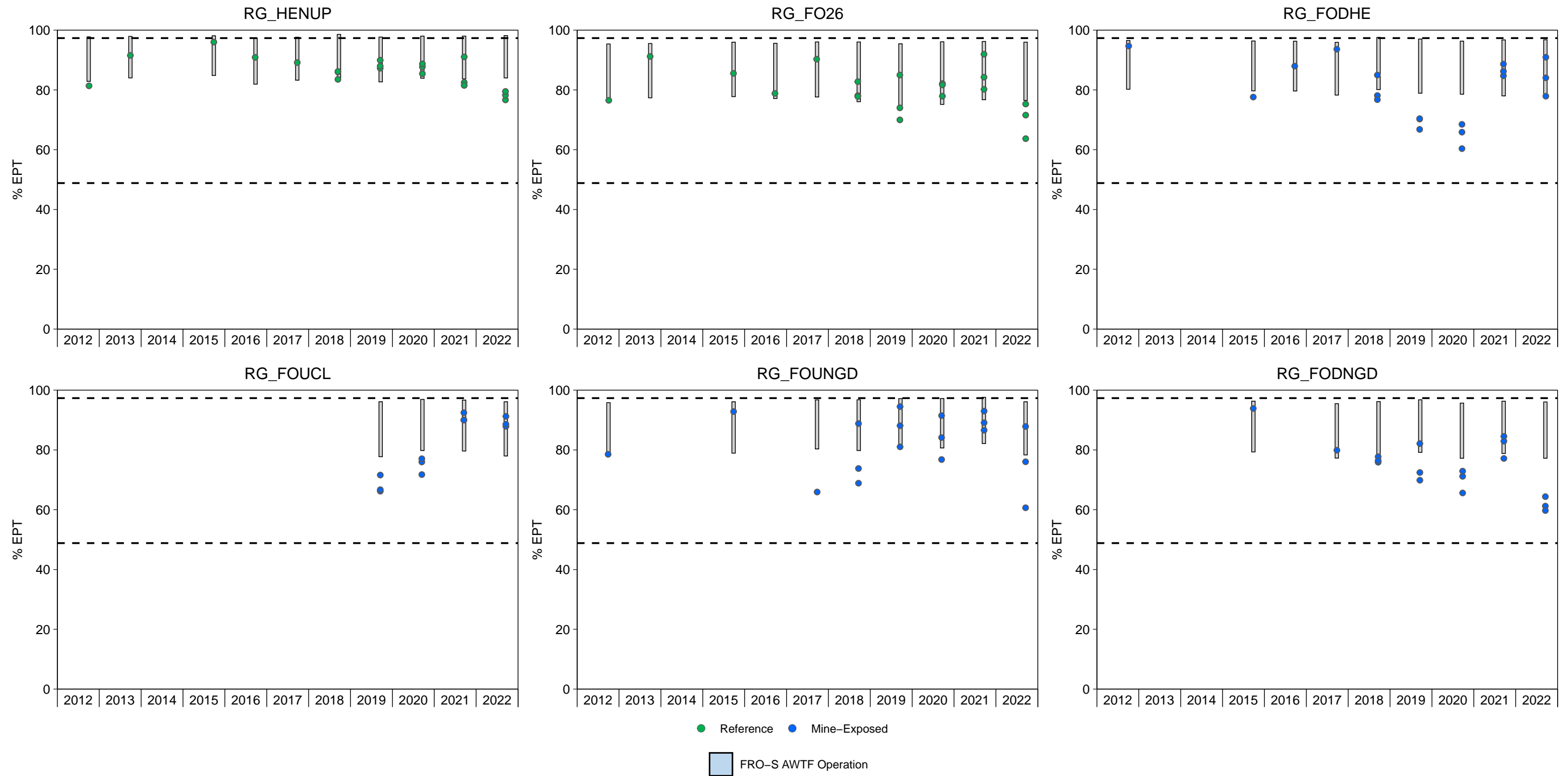


Figure G.13: Benthic Invertebrate % EPT in September, FRO LAEMP, 2012 to 2022

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

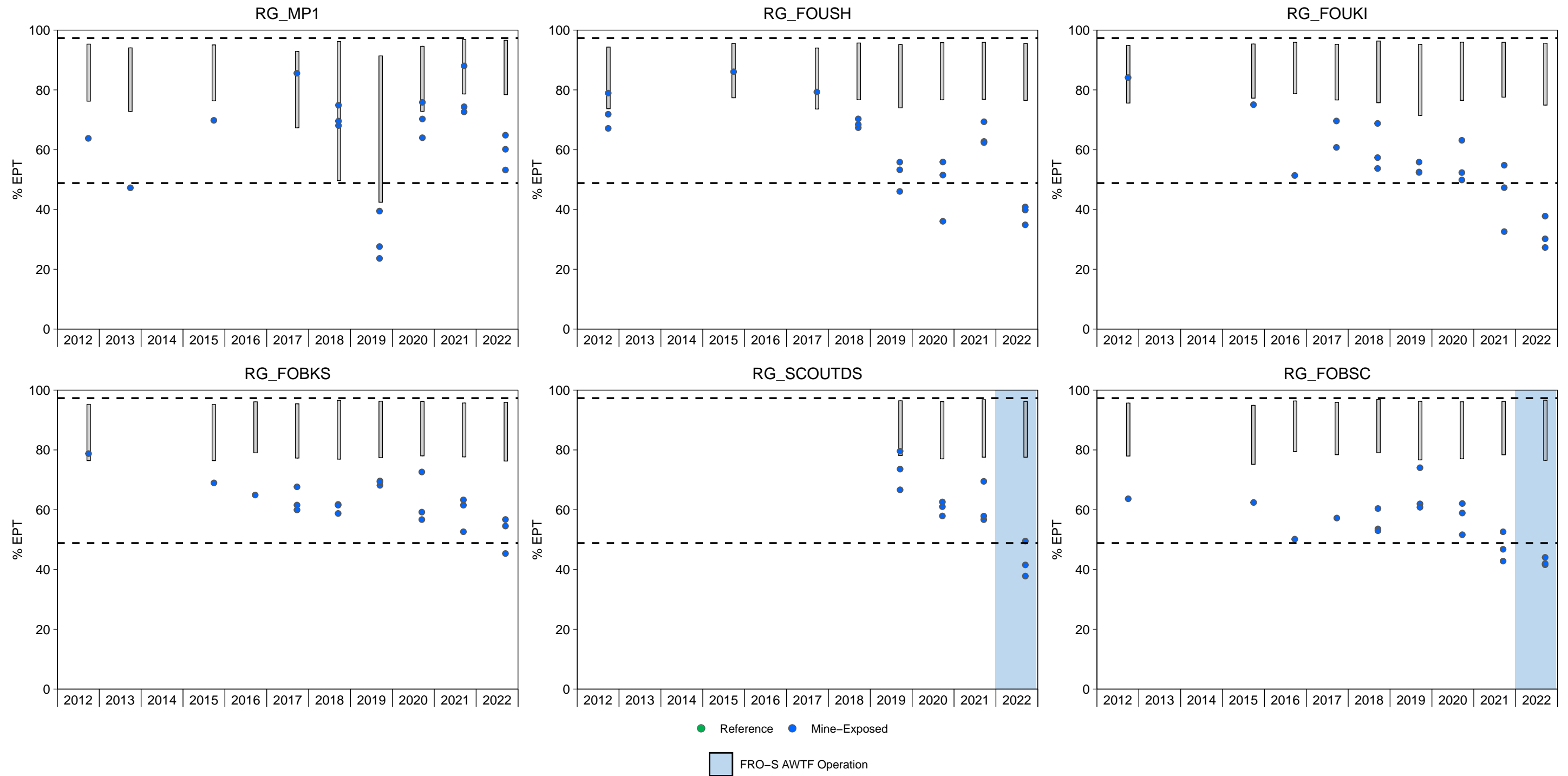


Figure G.13: Benthic Invertebrate % EPT in September, FRO LAEMP, 2012 to 2022

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

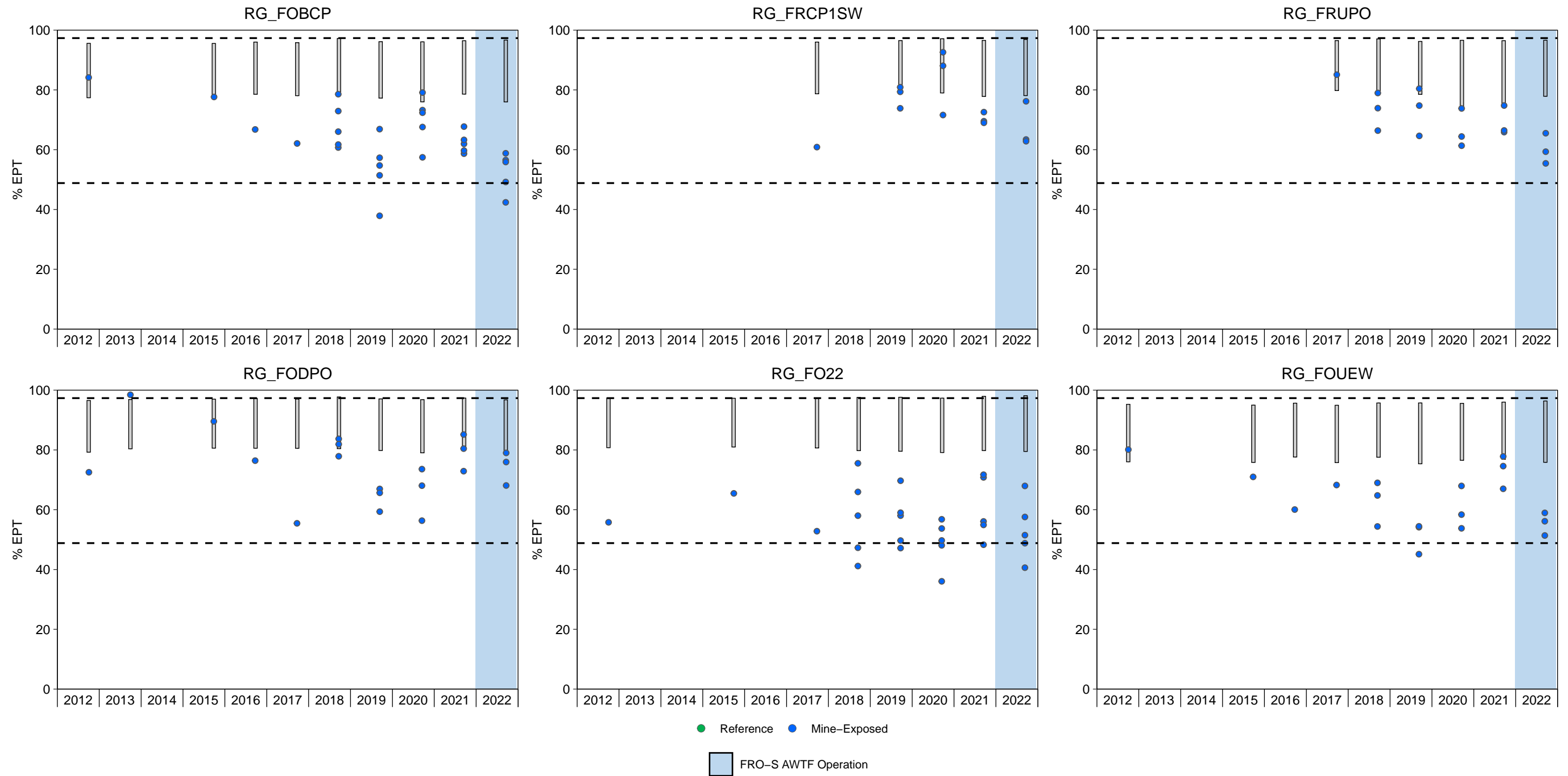


Figure G.13: Benthic Invertebrate % EPT in September, FRO LAEMP, 2012 to 2022

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

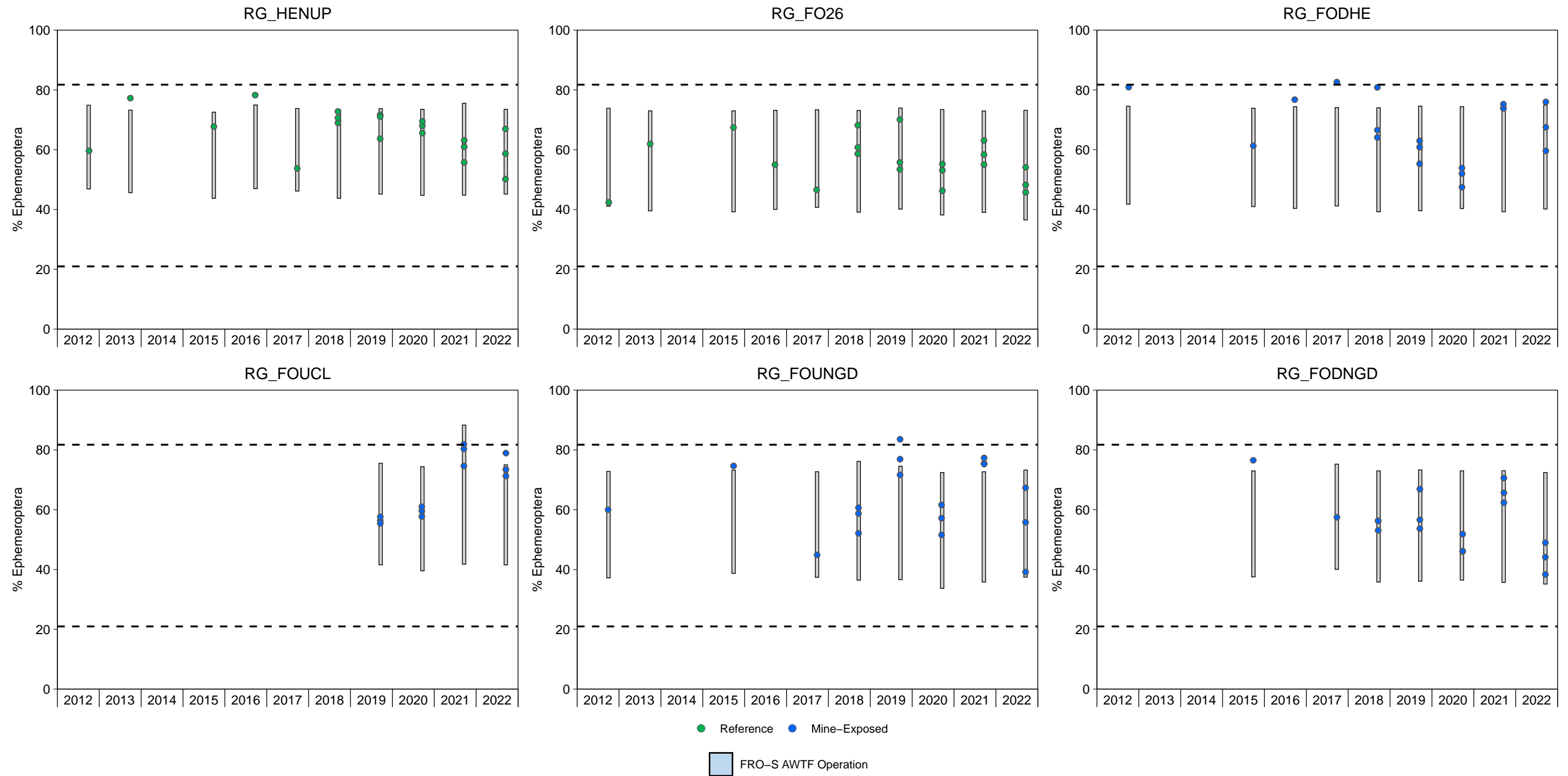


Figure G.14: Benthic Invertebrate % Ephemeroptera in September, FRO LAEMP, 2012 to 2022

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

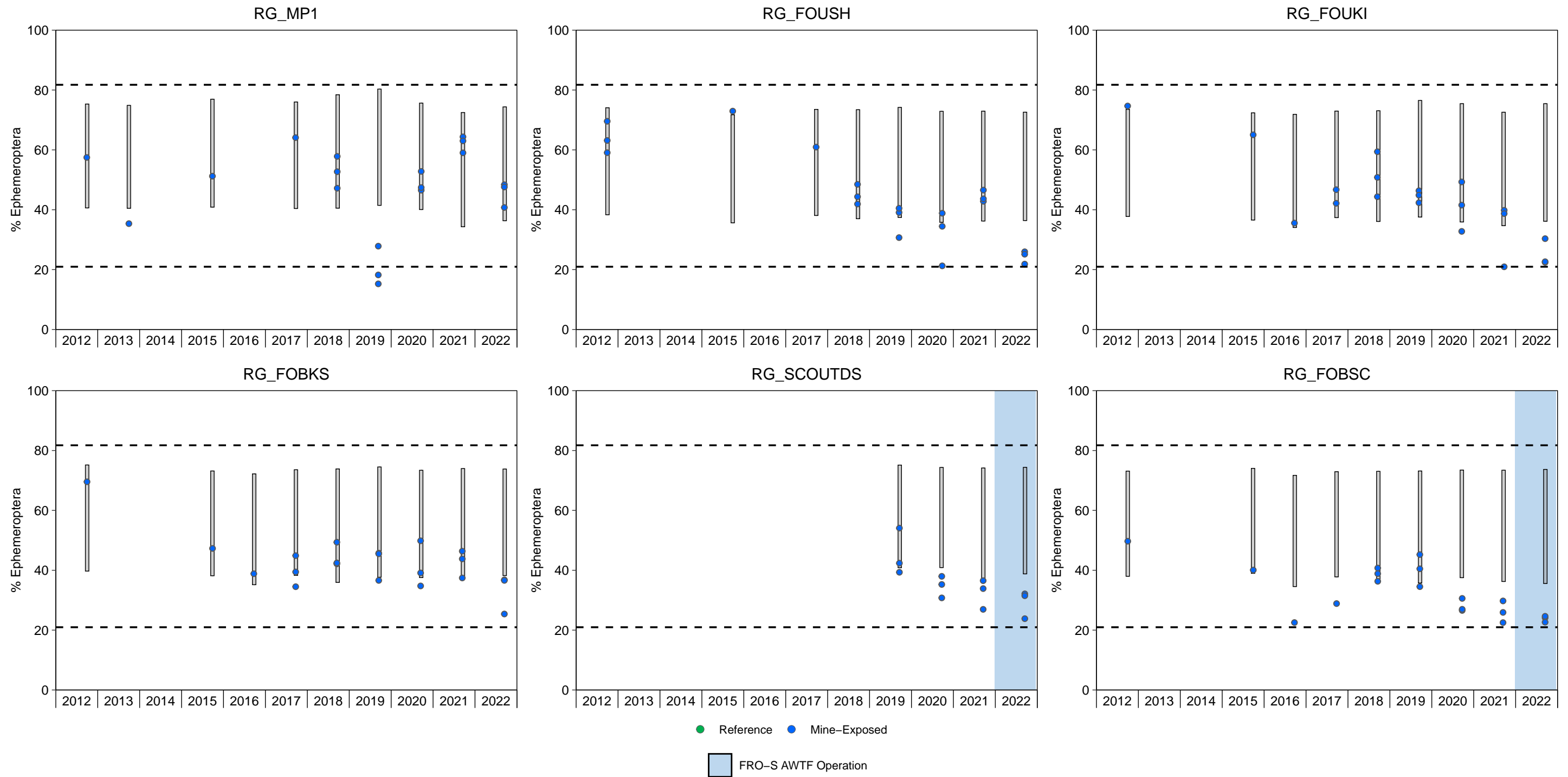


Figure G.14: Benthic Invertebrate % Ephemeroptera in September, FRO LAEMP, 2012 to 2022

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

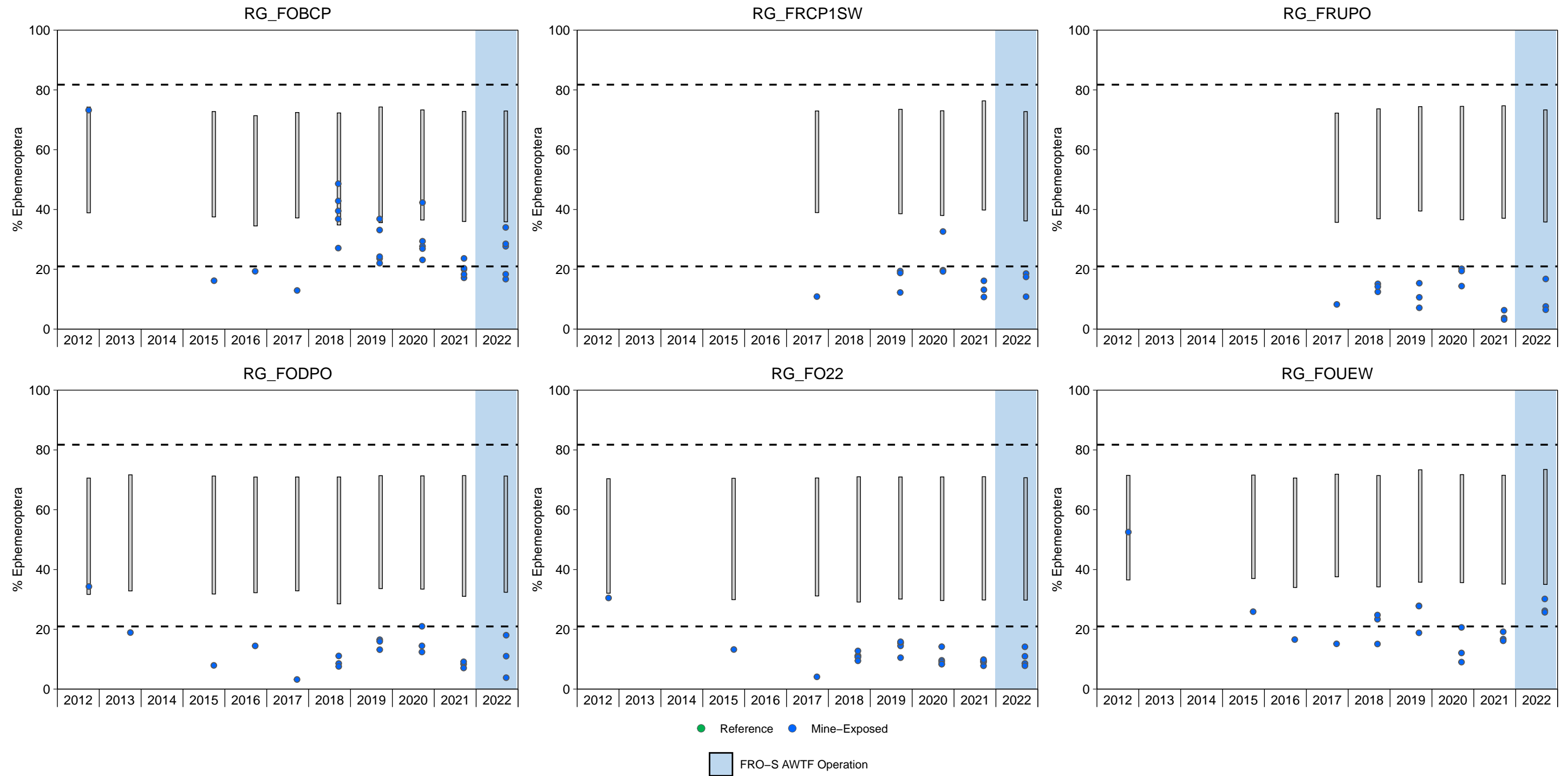


Figure G.14: Benthic Invertebrate % Ephemeroptera in September, FRO LAEMP, 2012 to 2022

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

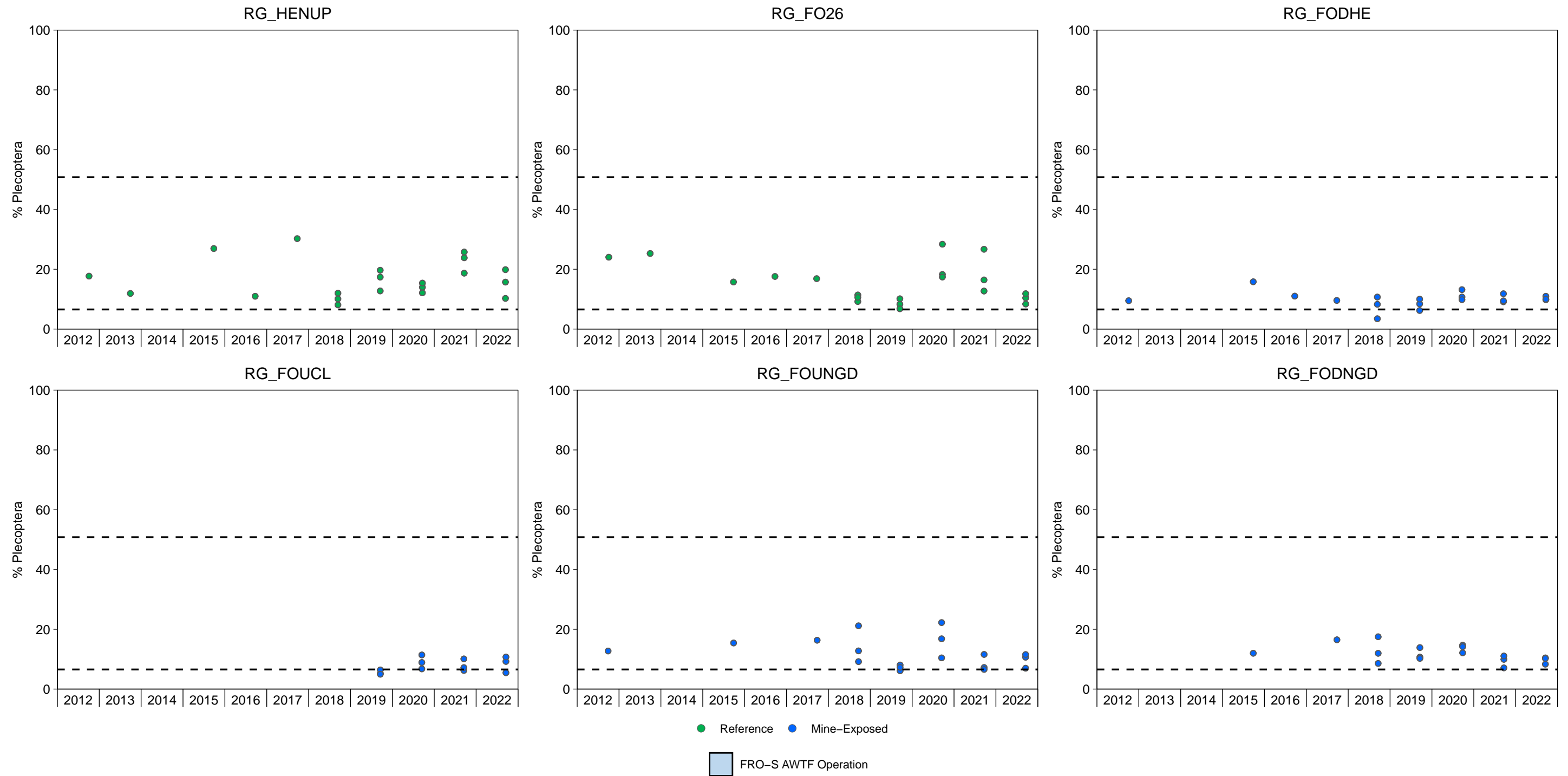


Figure G.15: Benthic Invertebrate % Plecoptera in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

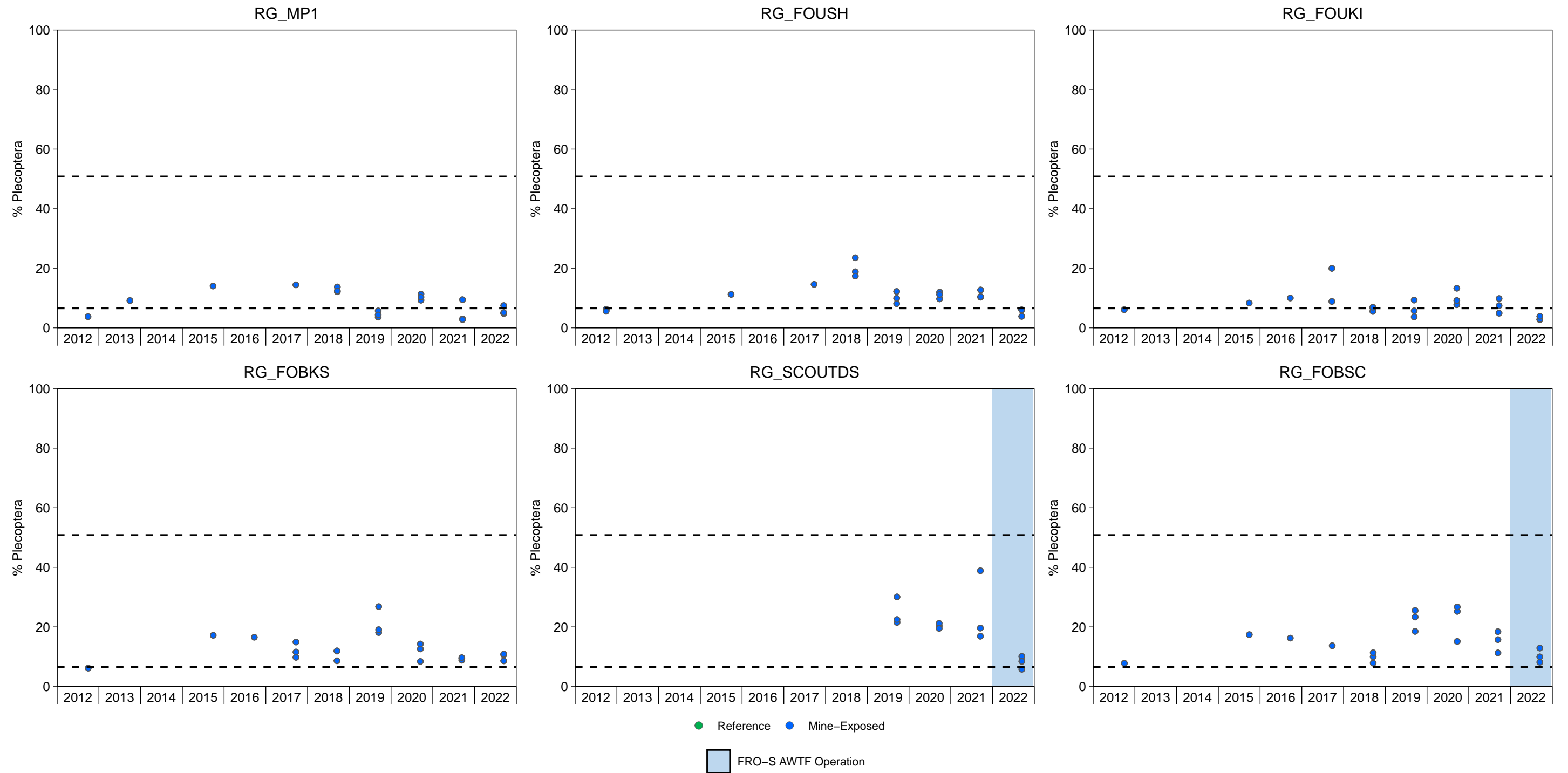


Figure G.15: Benthic Invertebrate % Plecoptera in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

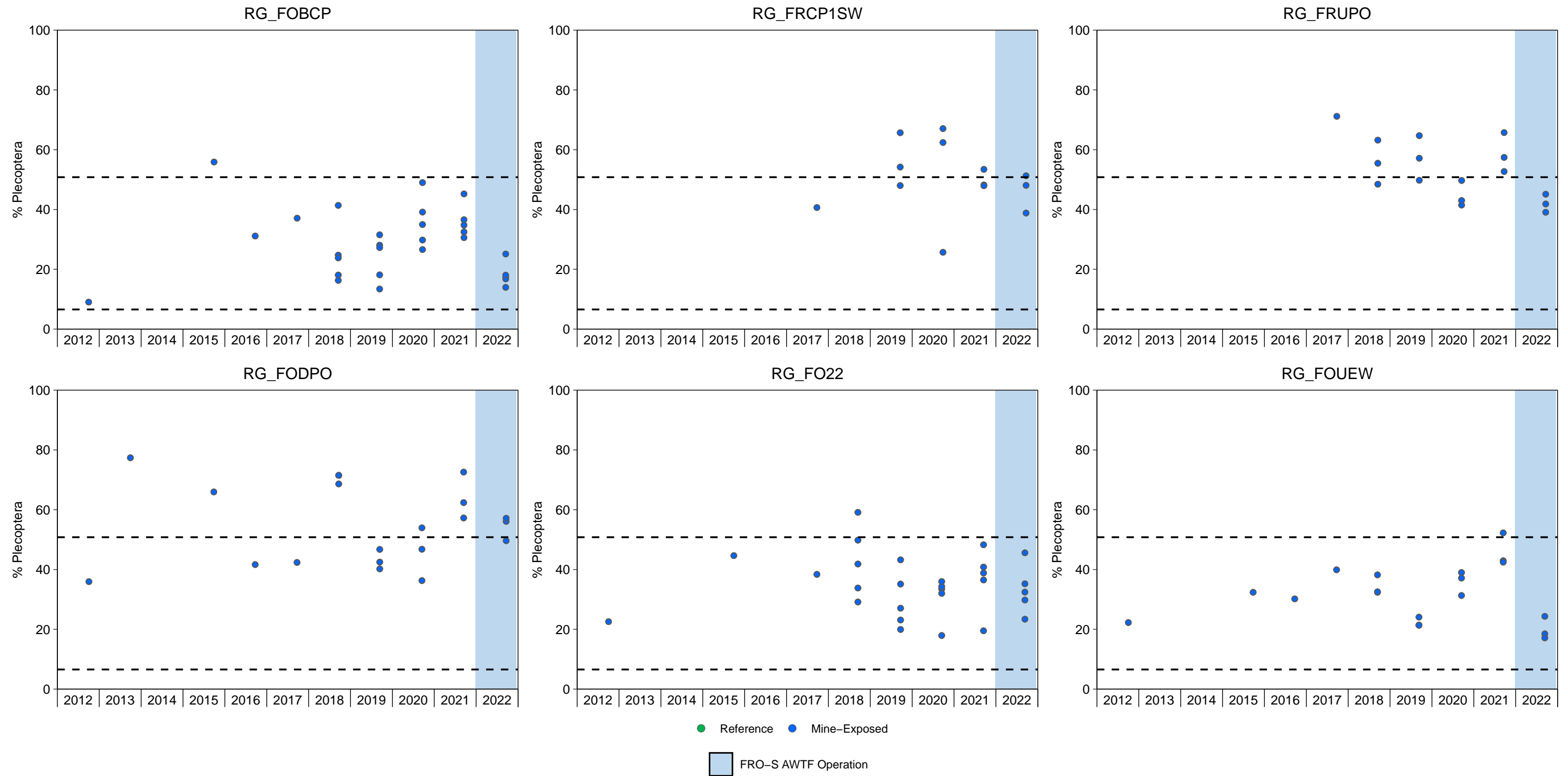


Figure G.15: Benthic Invertebrate % Plecoptera in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

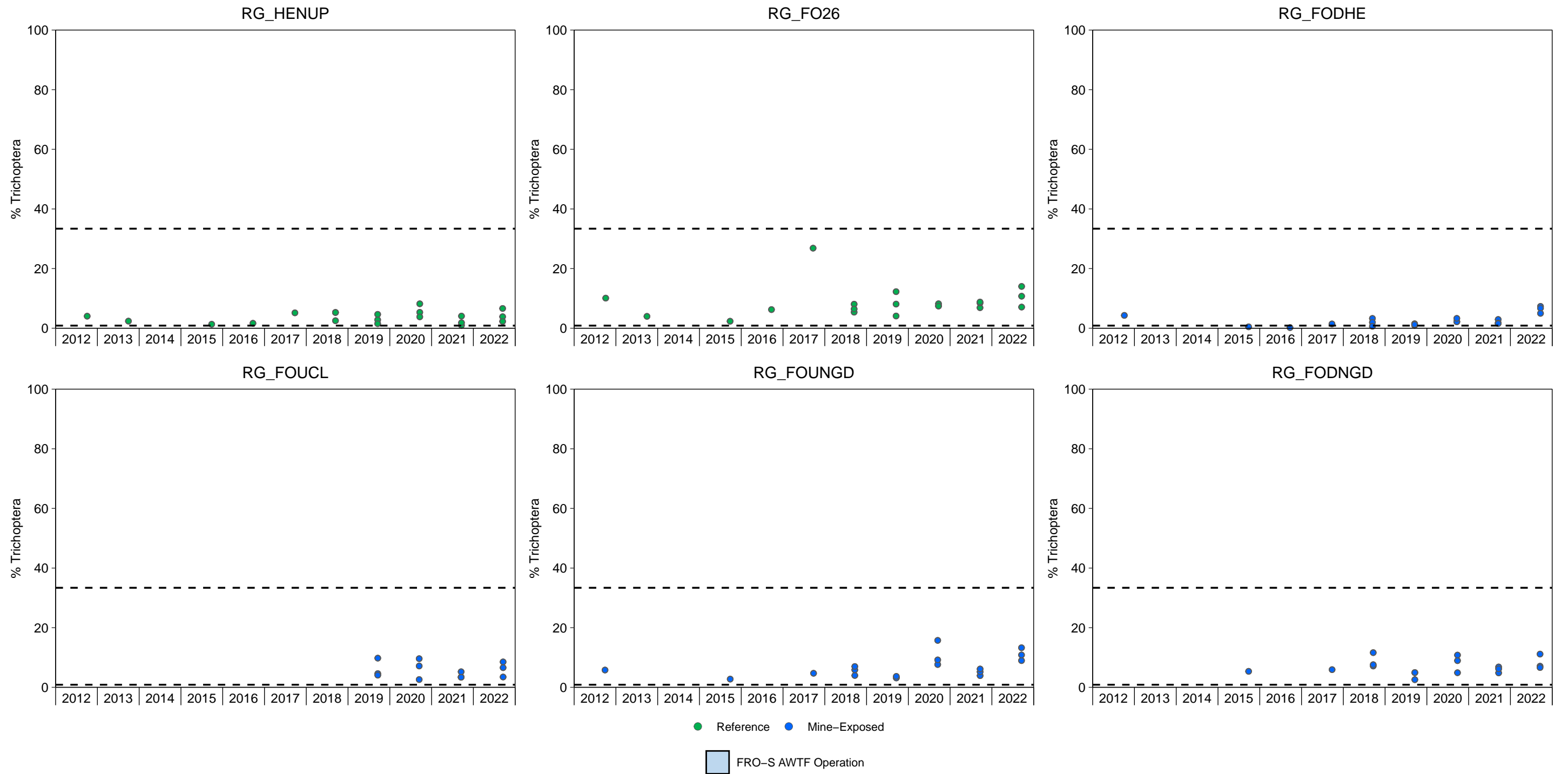


Figure G.16: Benthic Invertebrate % Trichoptera in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

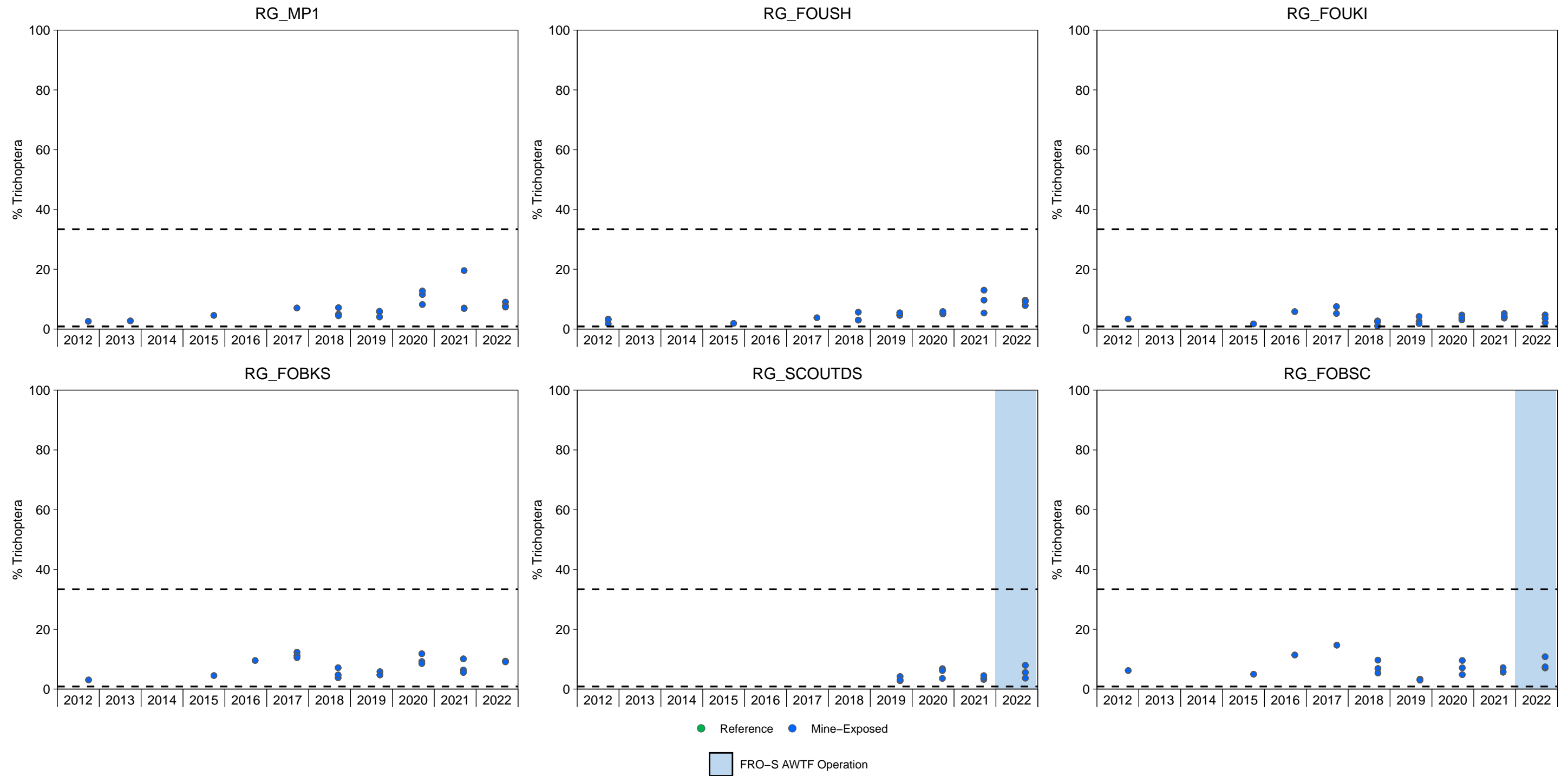


Figure G.16: Benthic Invertebrate % Trichoptera in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

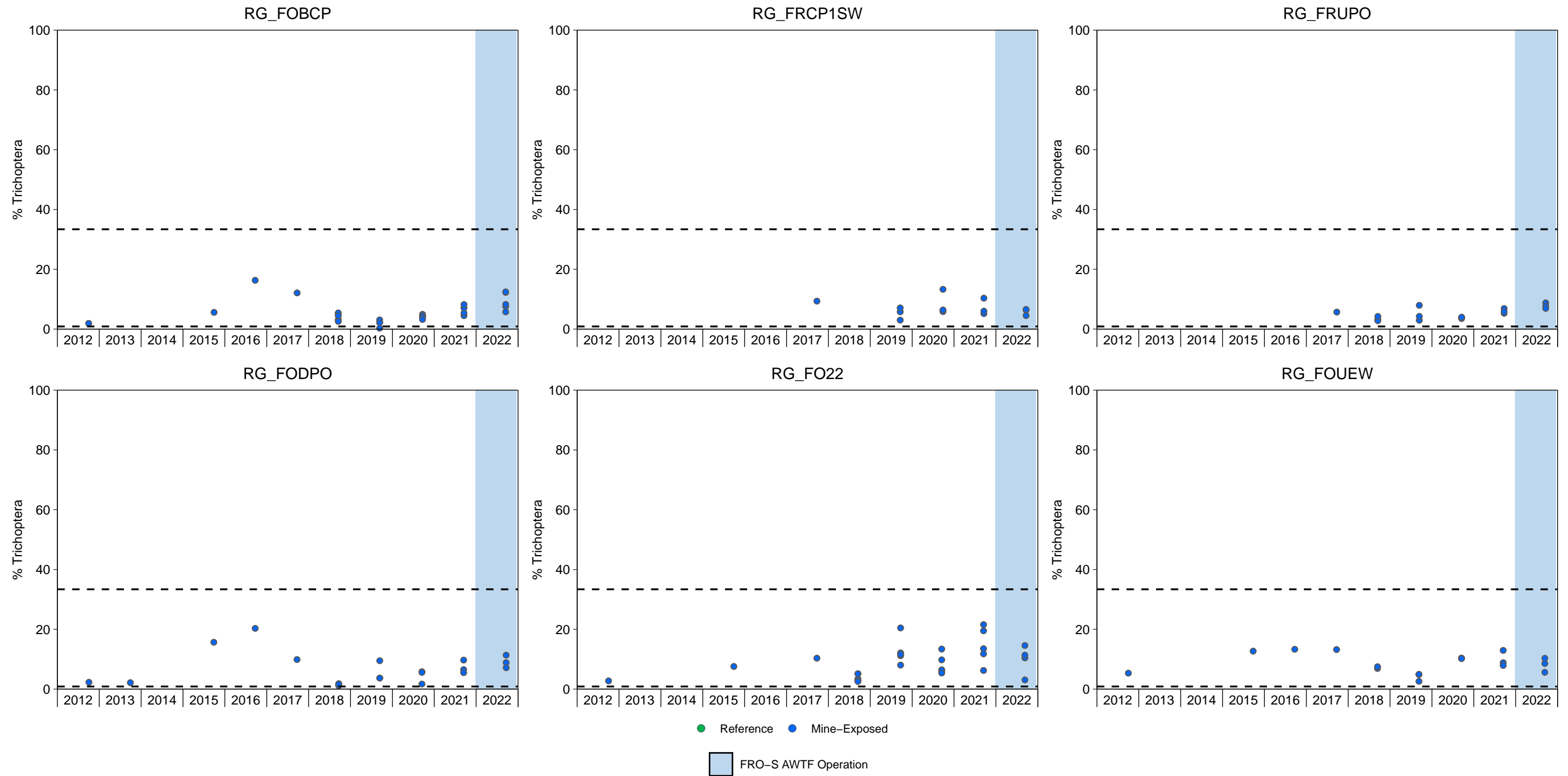


Figure G.16: Benthic Invertebrate % Trichoptera in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

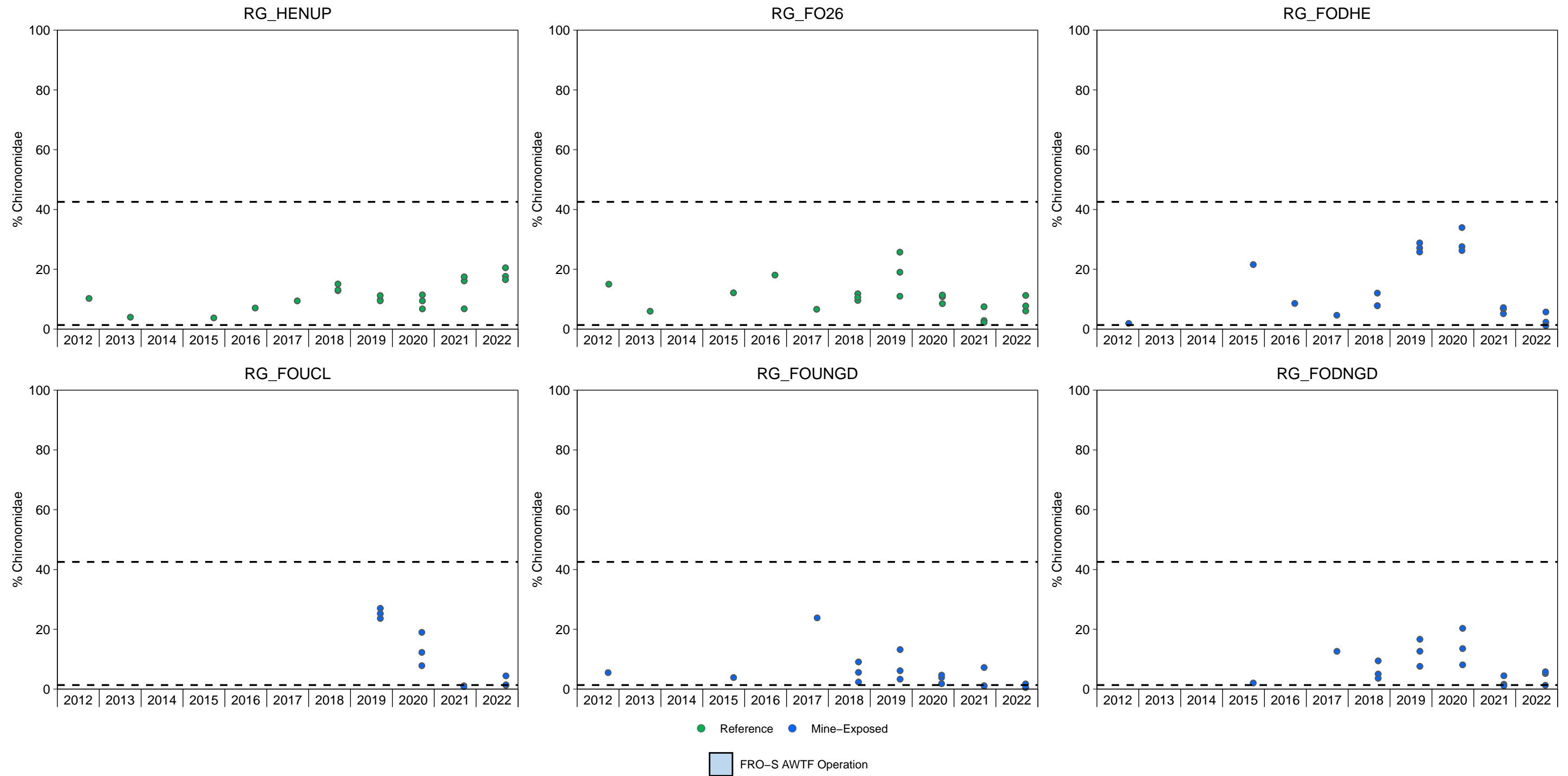


Figure G.17: Benthic Invertebrate % Chironomidae in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

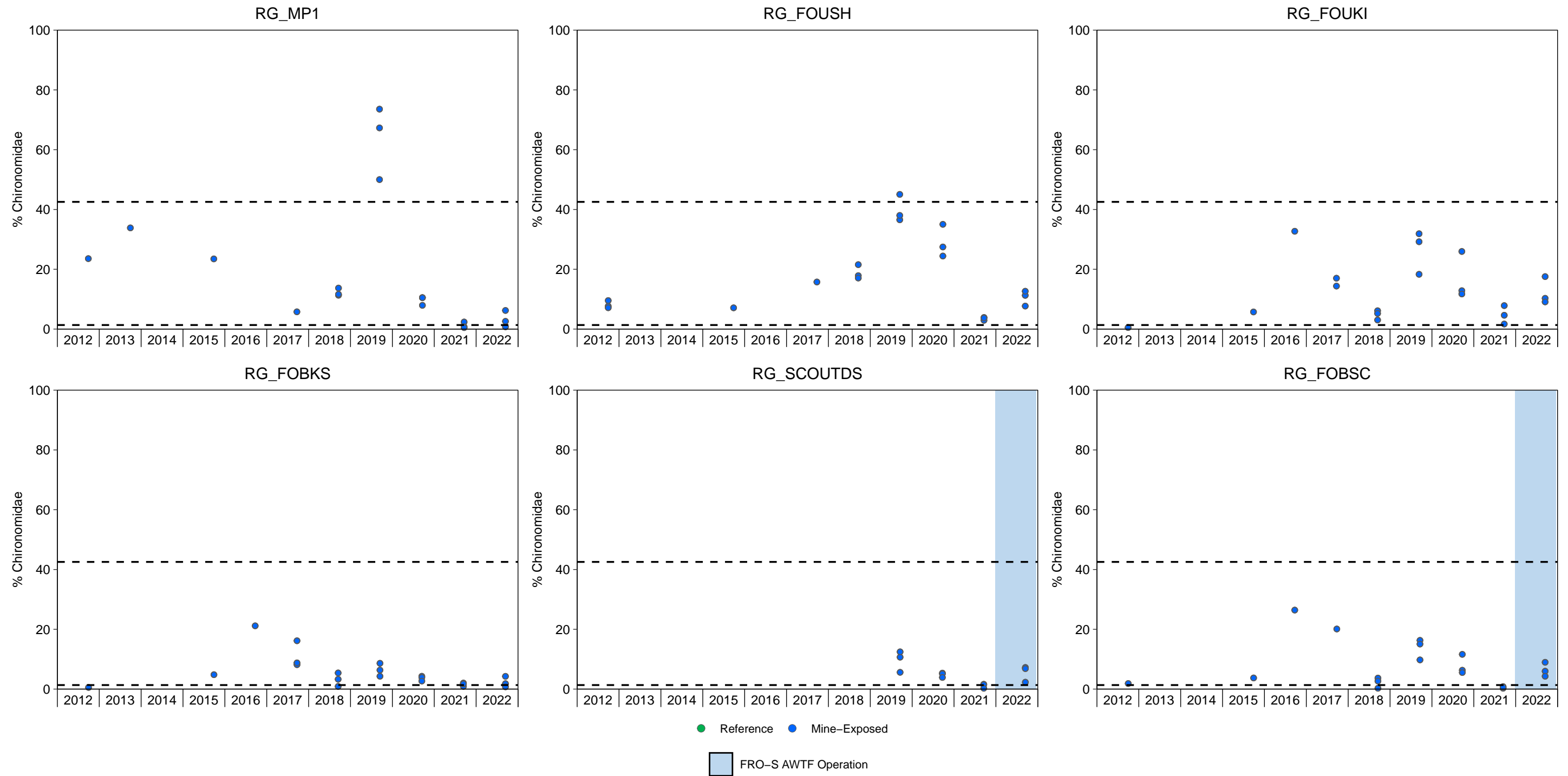


Figure G.17: Benthic Invertebrate % Chironomidae in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

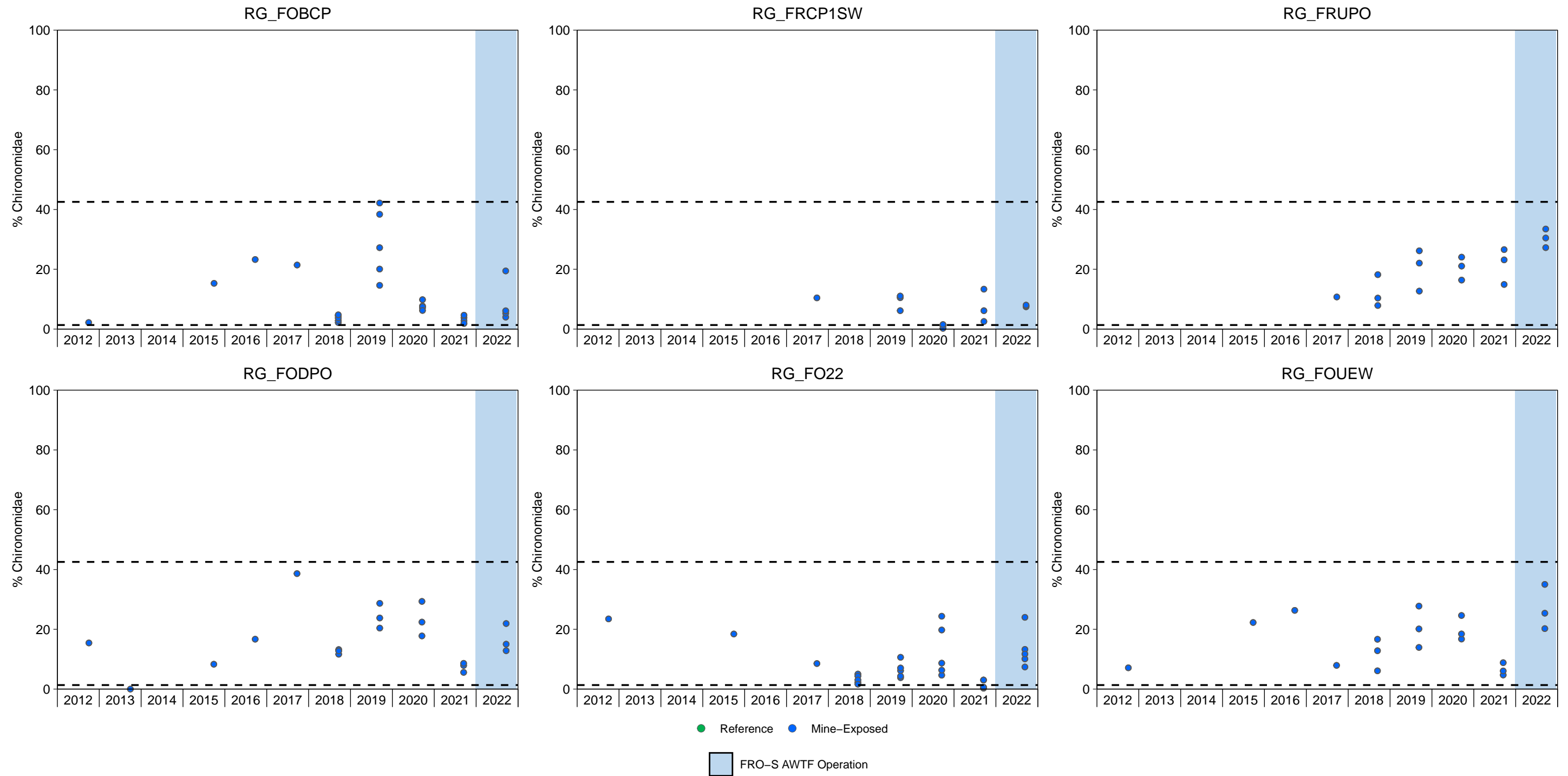


Figure G.17: Benthic Invertebrate % Chironomidae in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

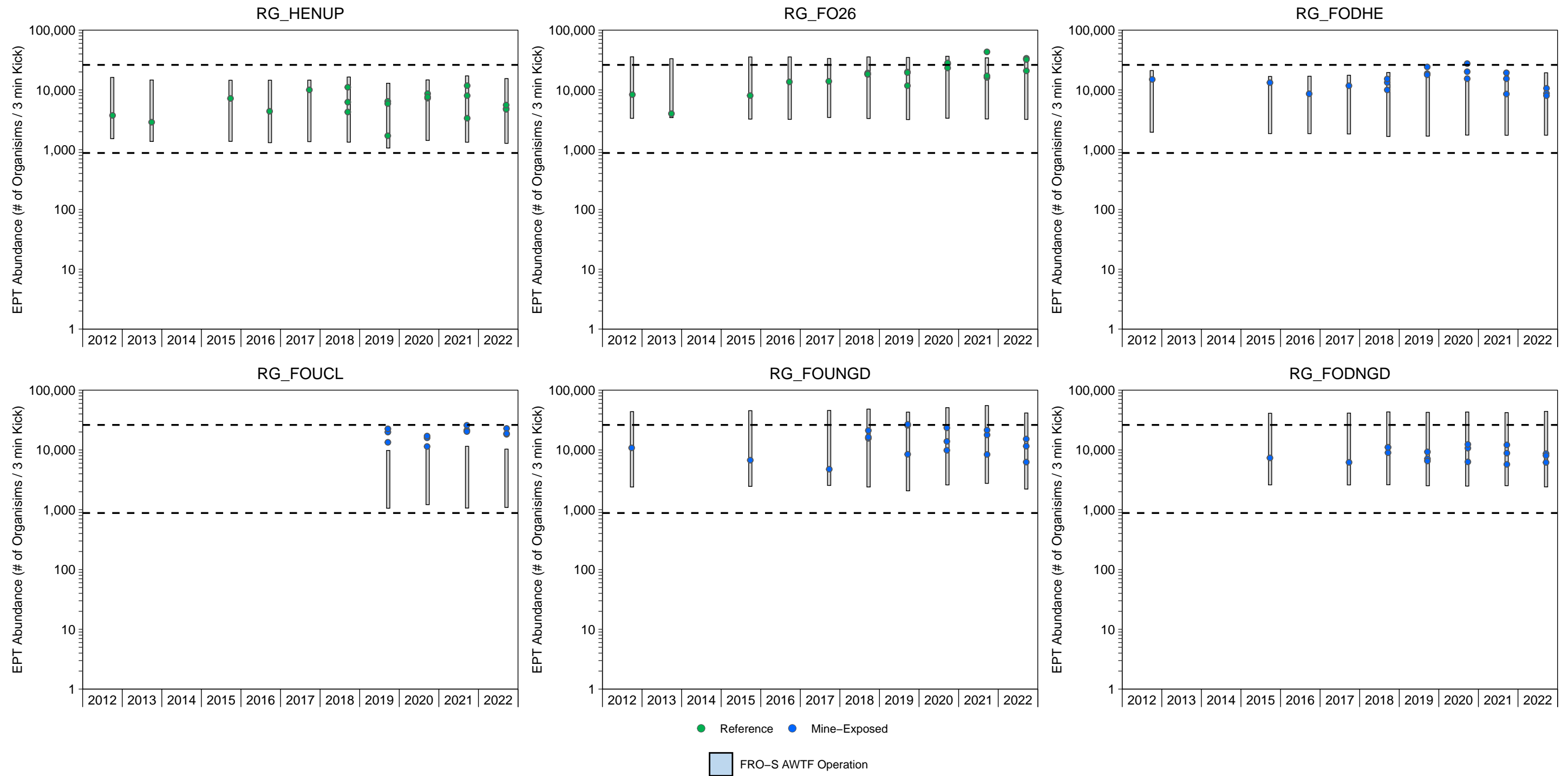


Figure G.18: Benthic Invertebrate EPT Abundance in September, FRO LAEMP, 2012 to 2022

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

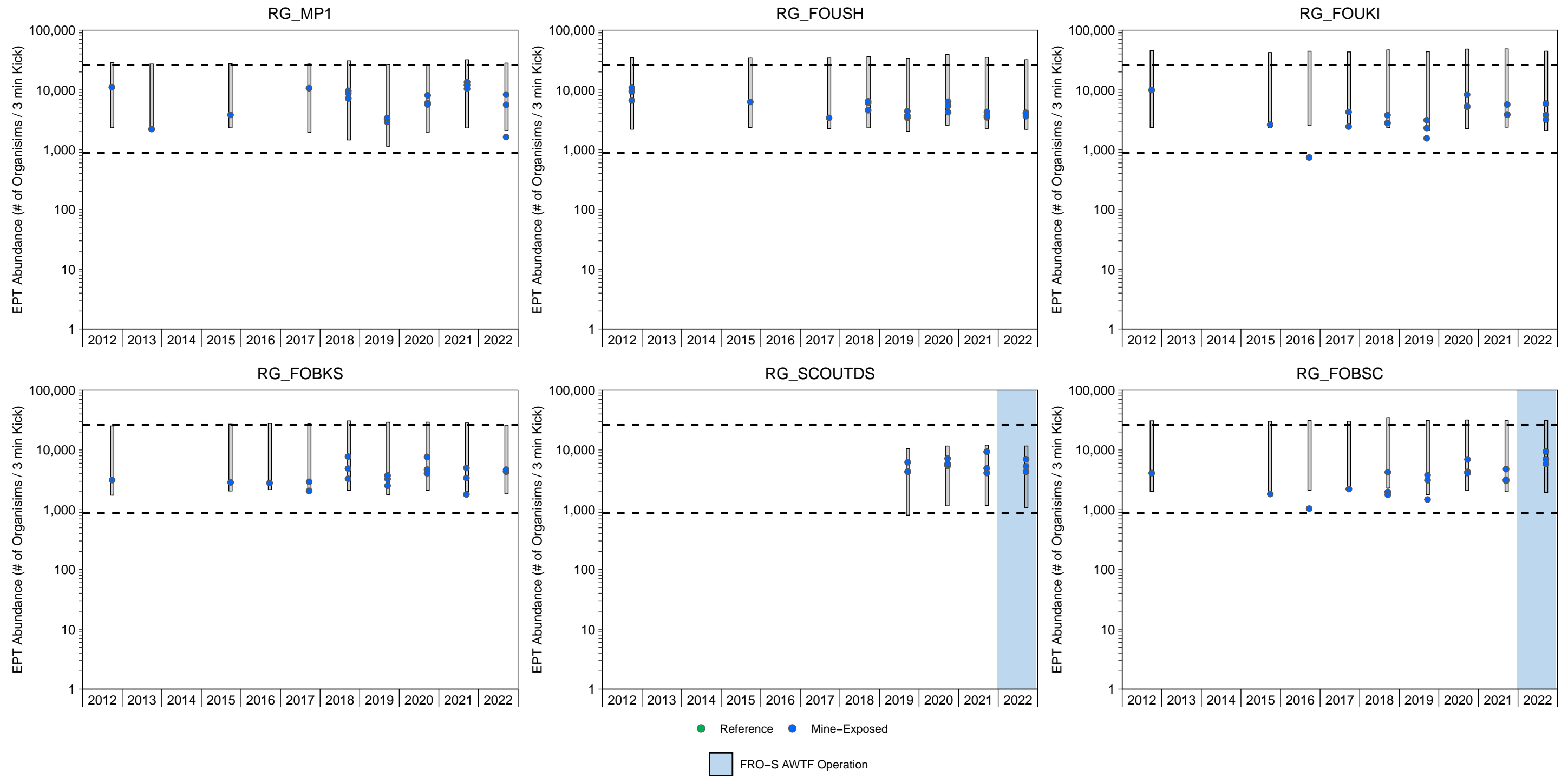


Figure G.18: Benthic Invertebrate EPT Abundance in September, FRO LAEMP, 2012 to 2022

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

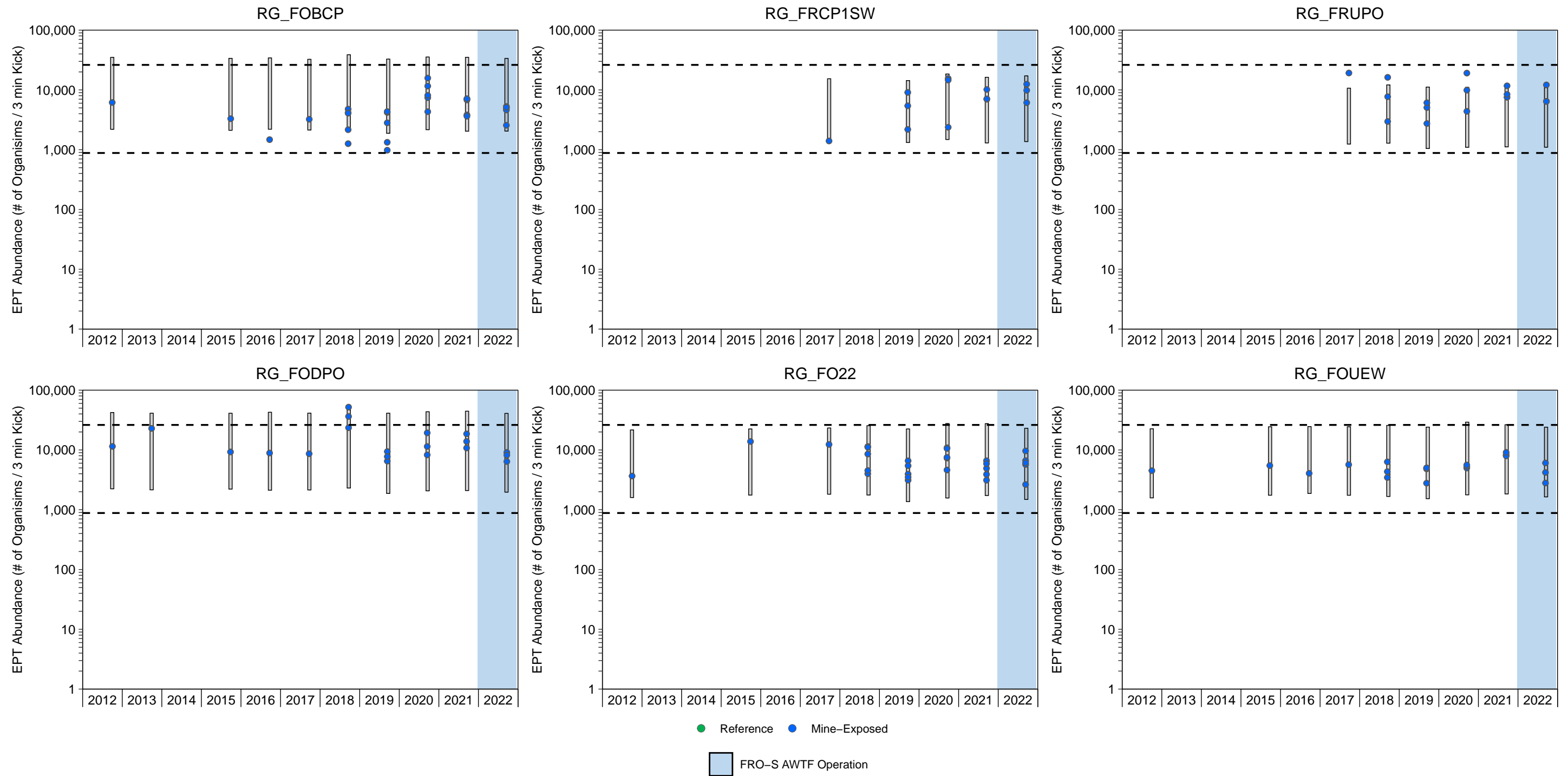


Figure G.18: Benthic Invertebrate EPT Abundance in September, FRO LAEMP, 2012 to 2022

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

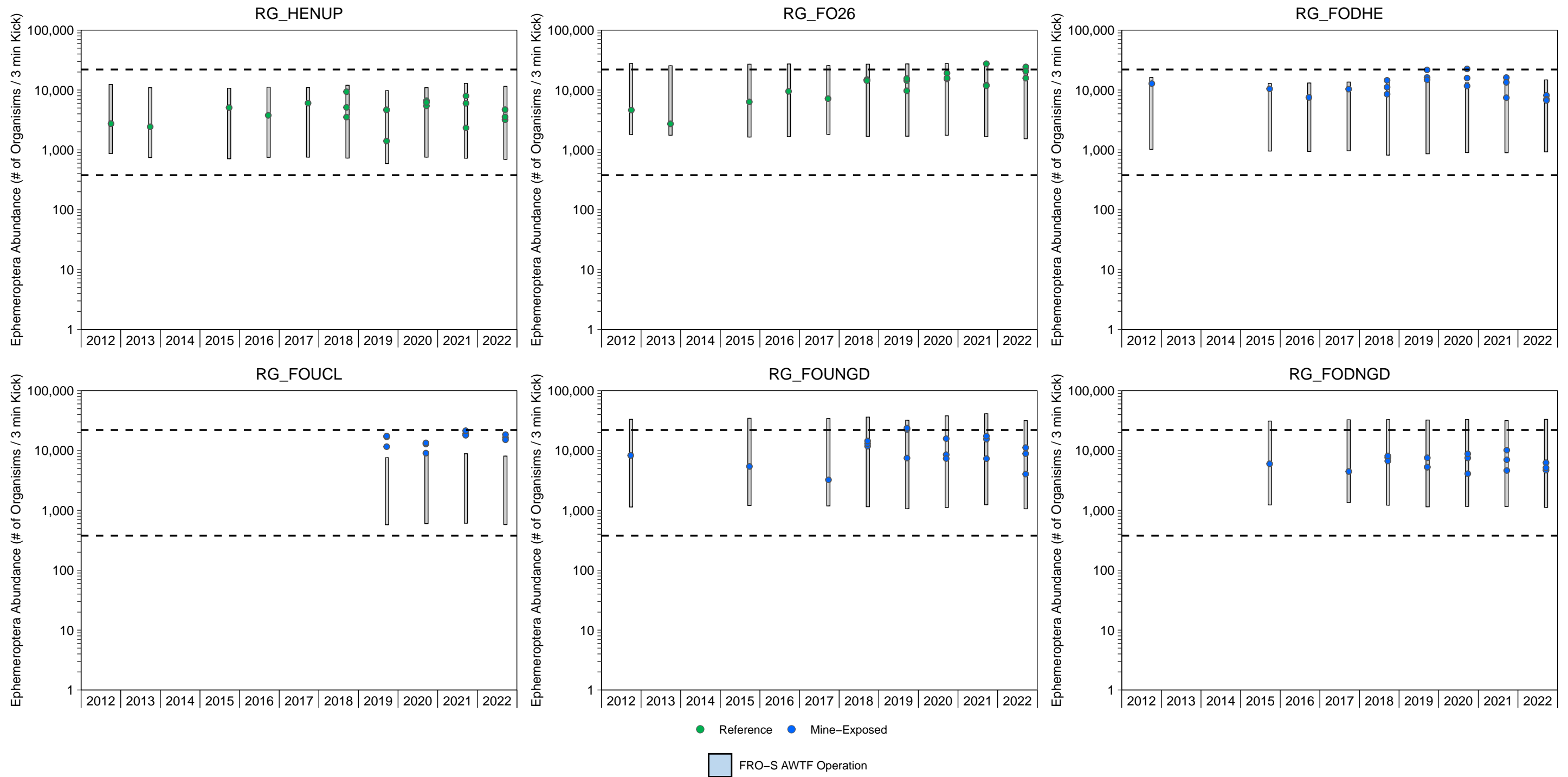


Figure G.19: Benthic Invertebrate Ephemeroptera Abundance in September, FRO LAEMP, 2012 to 2022

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

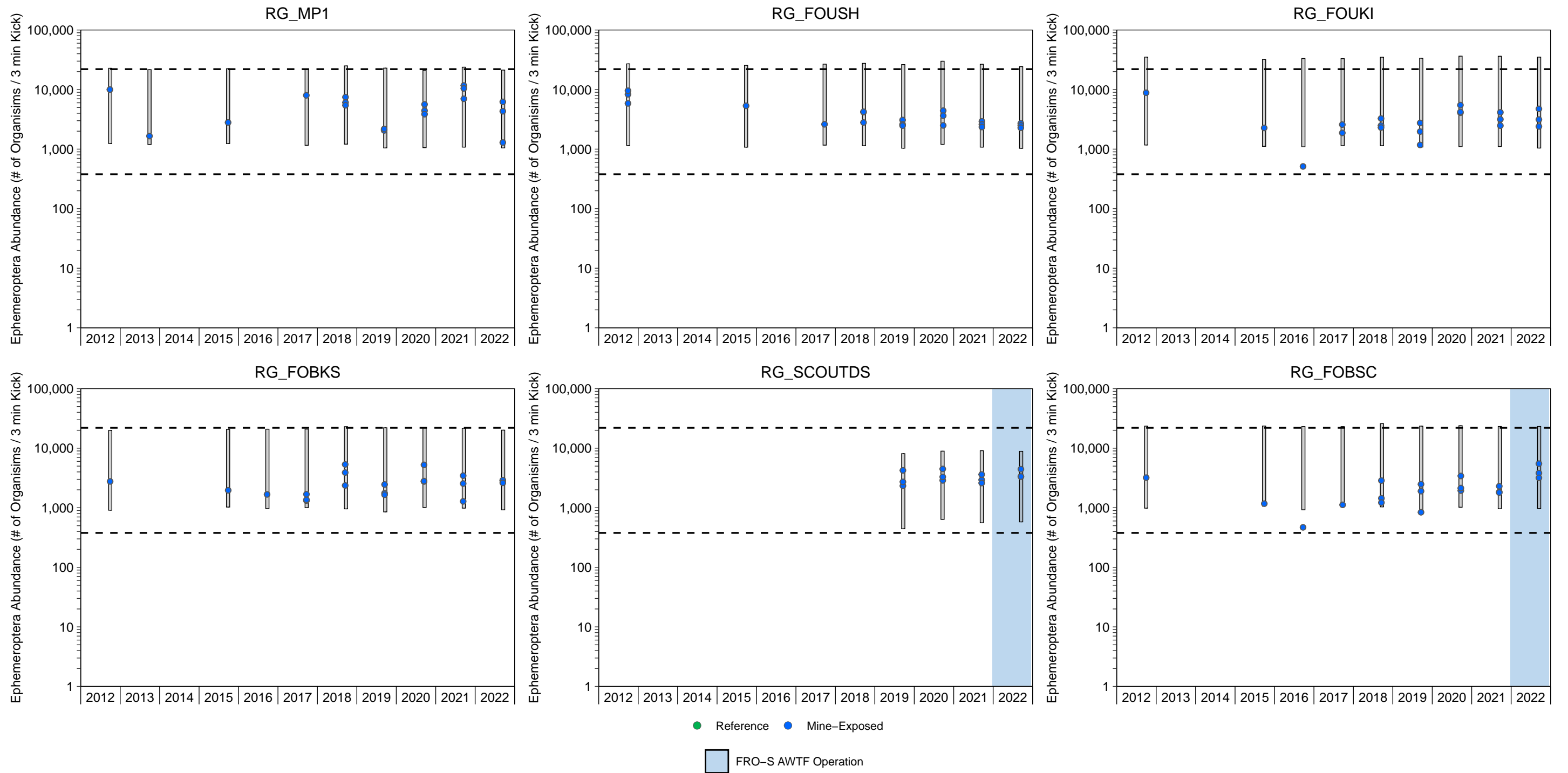


Figure G.19: Benthic Invertebrate Ephemeroptera Abundance in September, FRO LAEMP, 2012 to 2022

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

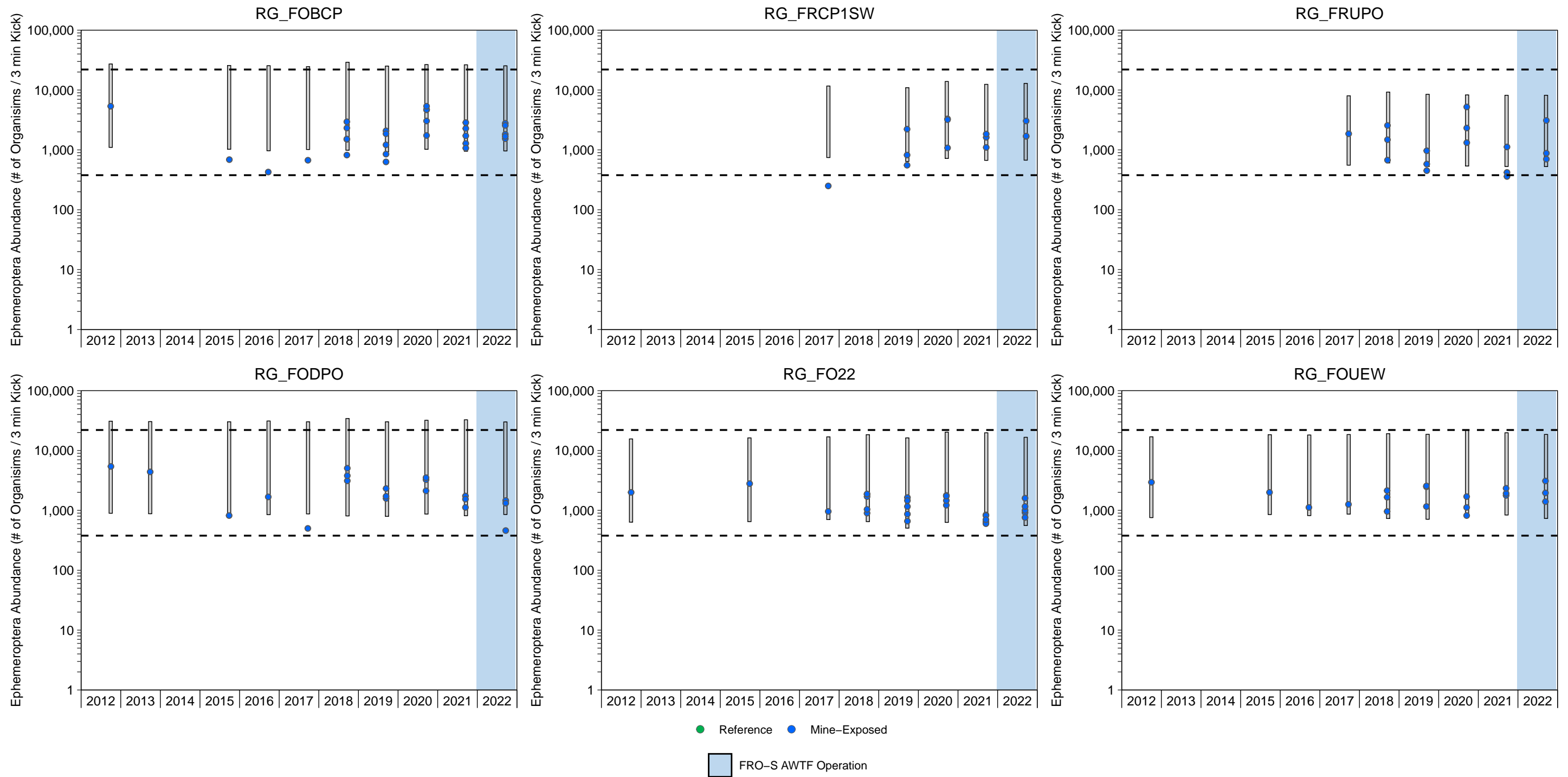


Figure G.19: Benthic Invertebrate Ephemeroptera Abundance in September, FRO LAEMP, 2012 to 2022

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

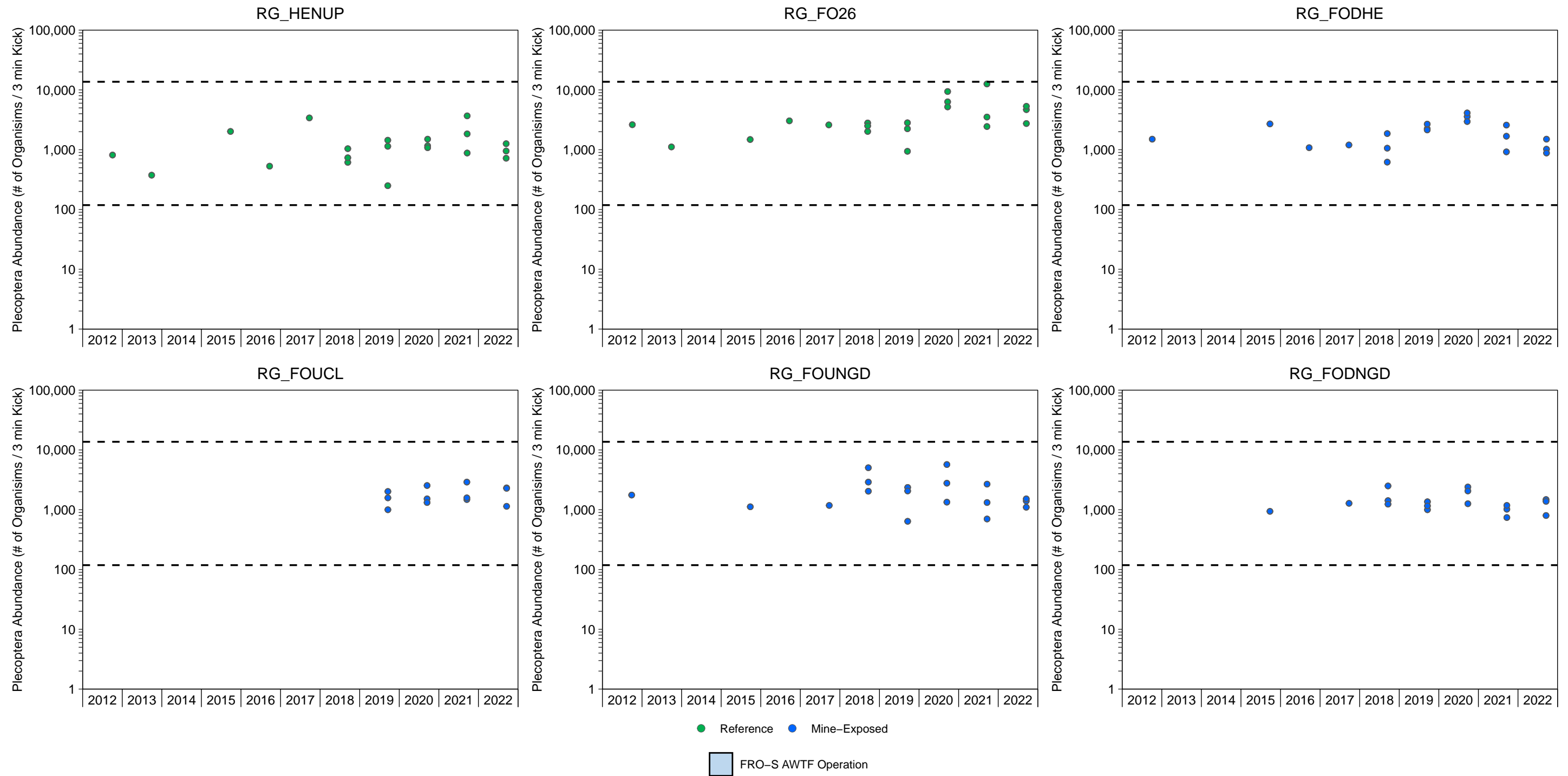


Figure G.20: Benthic Invertebrate Plecoptera Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

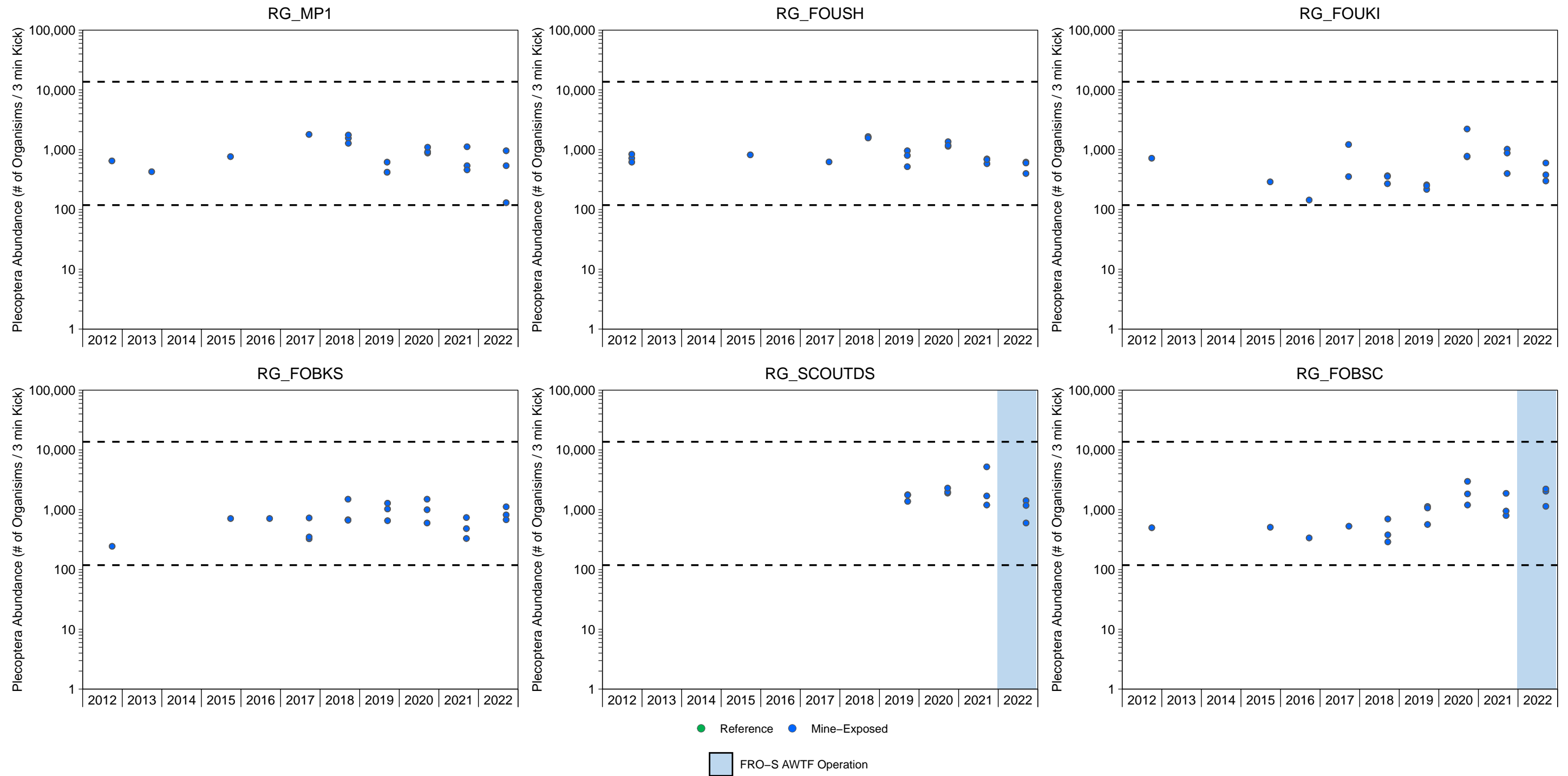


Figure G.20: Benthic Invertebrate Plecoptera Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

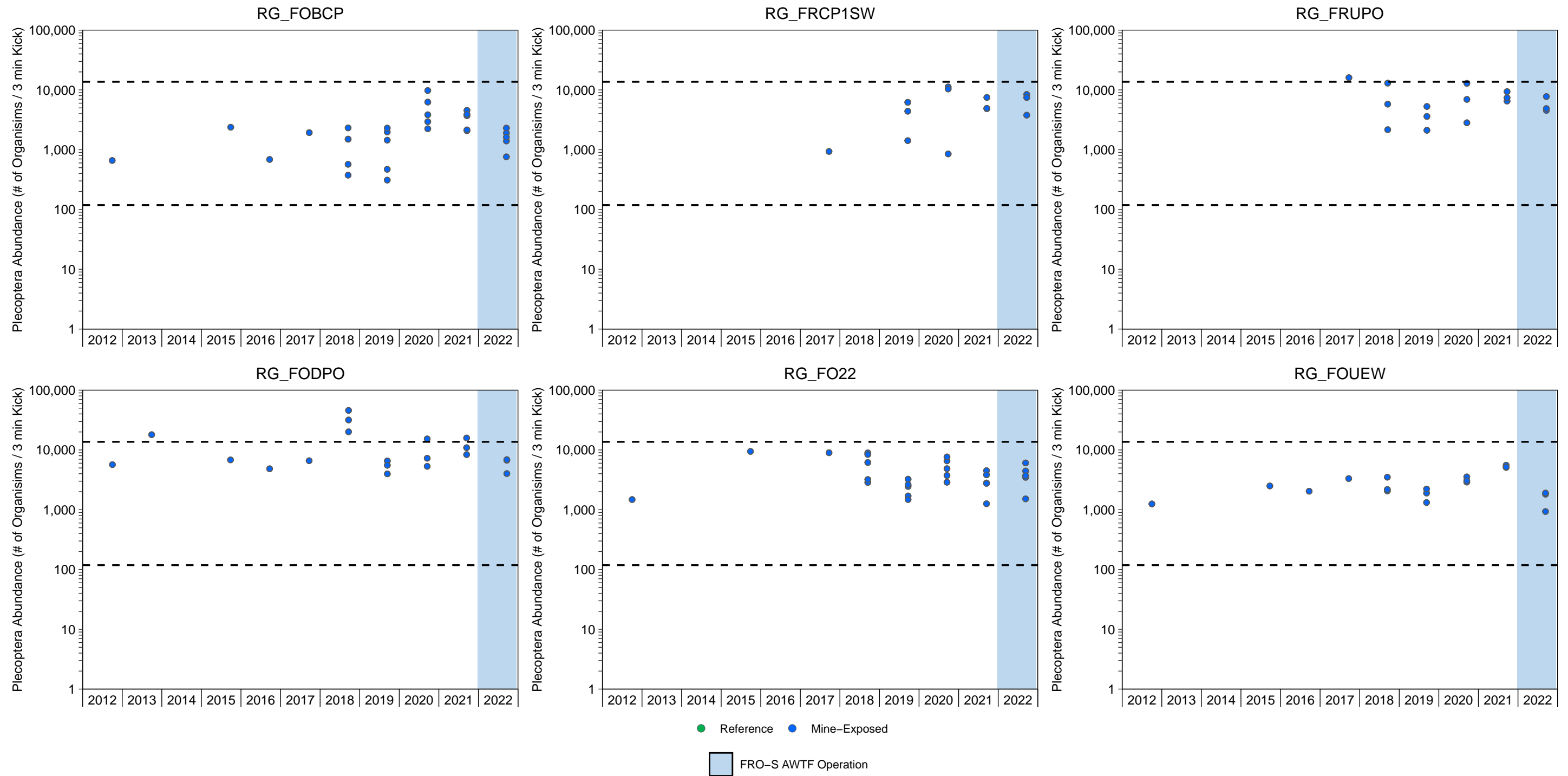


Figure G.20: Benthic Invertebrate Plecoptera Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

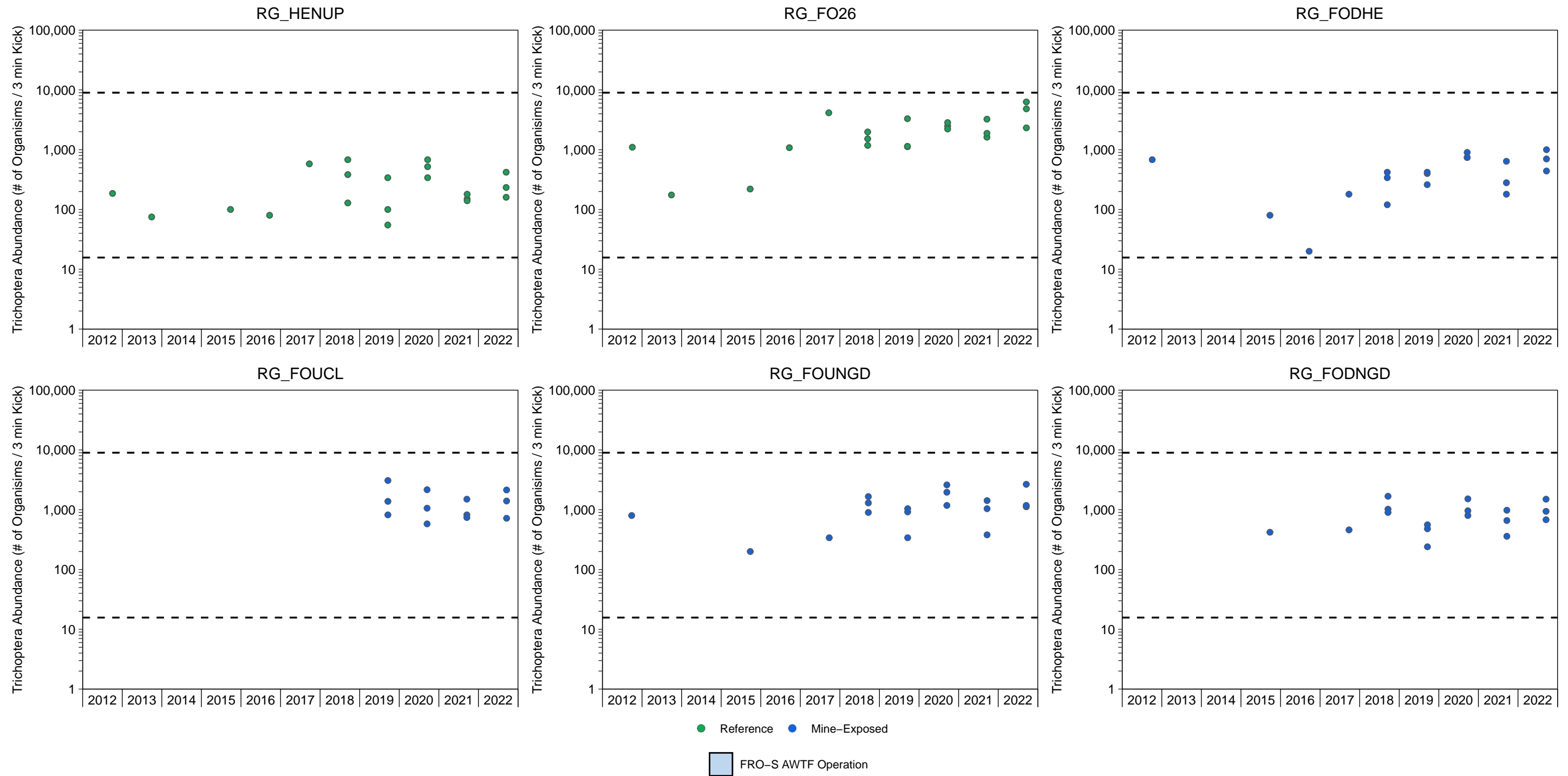


Figure G.21: Benthic Invertebrate Trichoptera Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

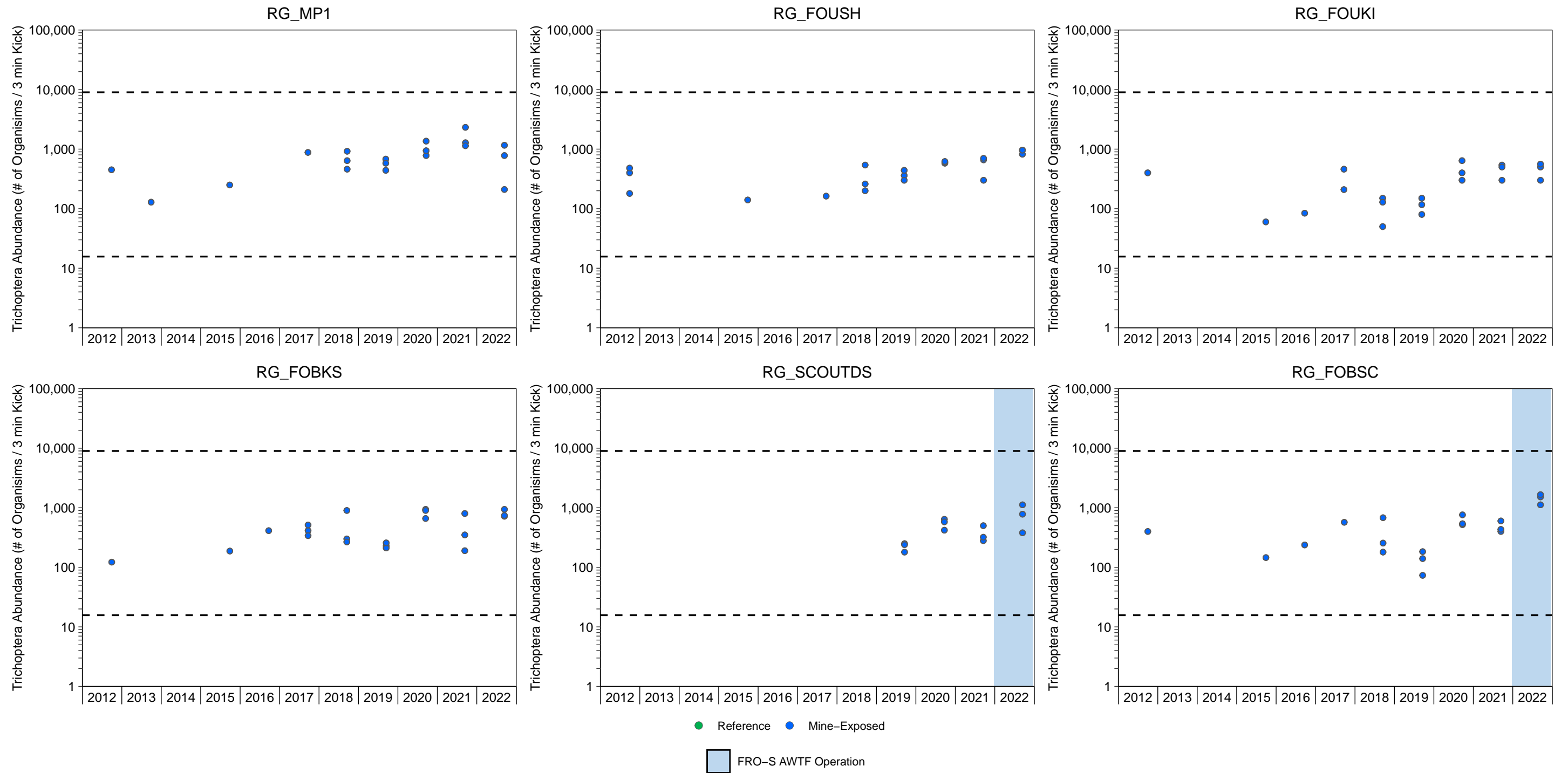


Figure G.21: Benthic Invertebrate Trichoptera Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

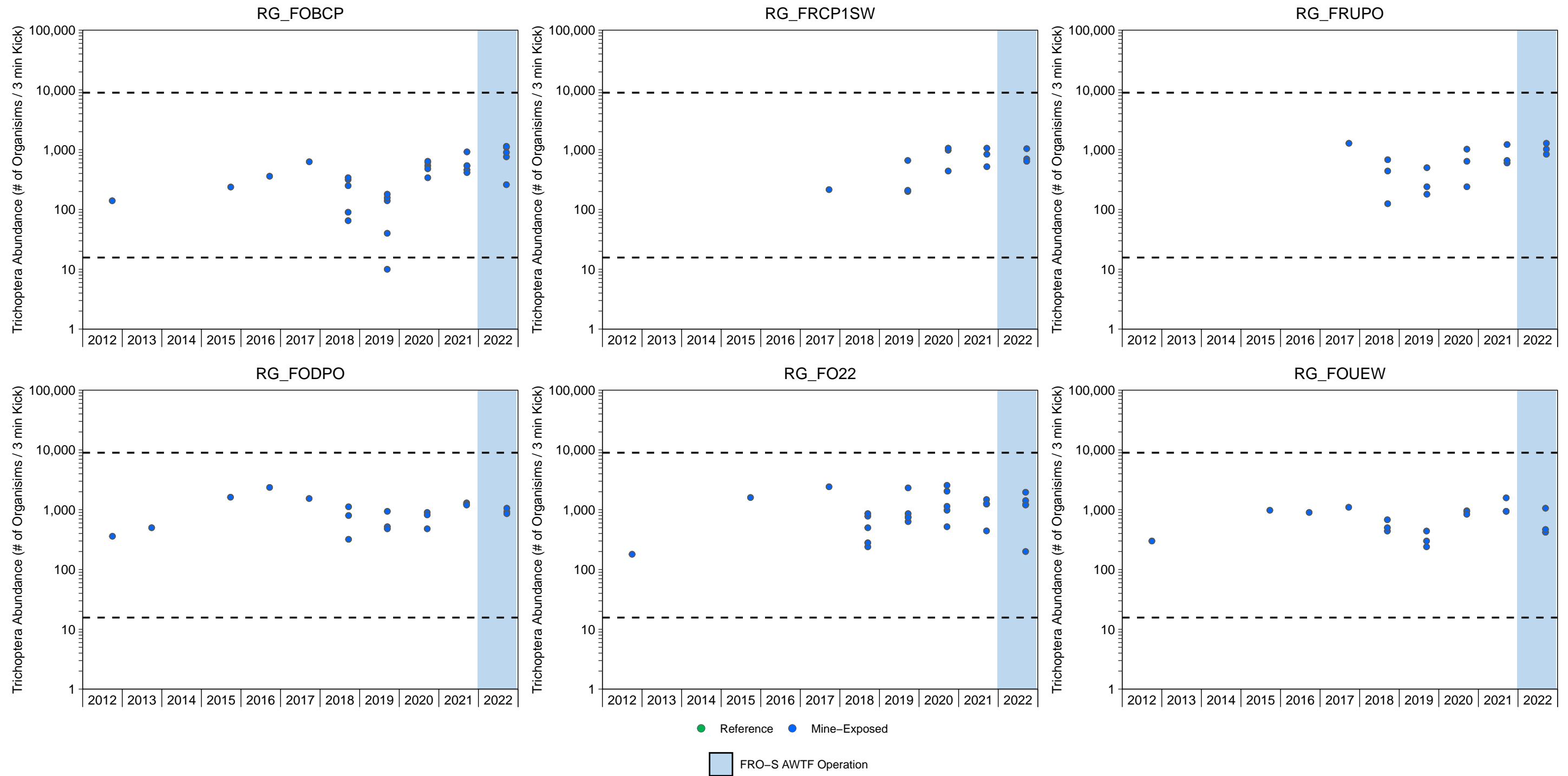


Figure G.21: Benthic Invertebrate Trichoptera Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

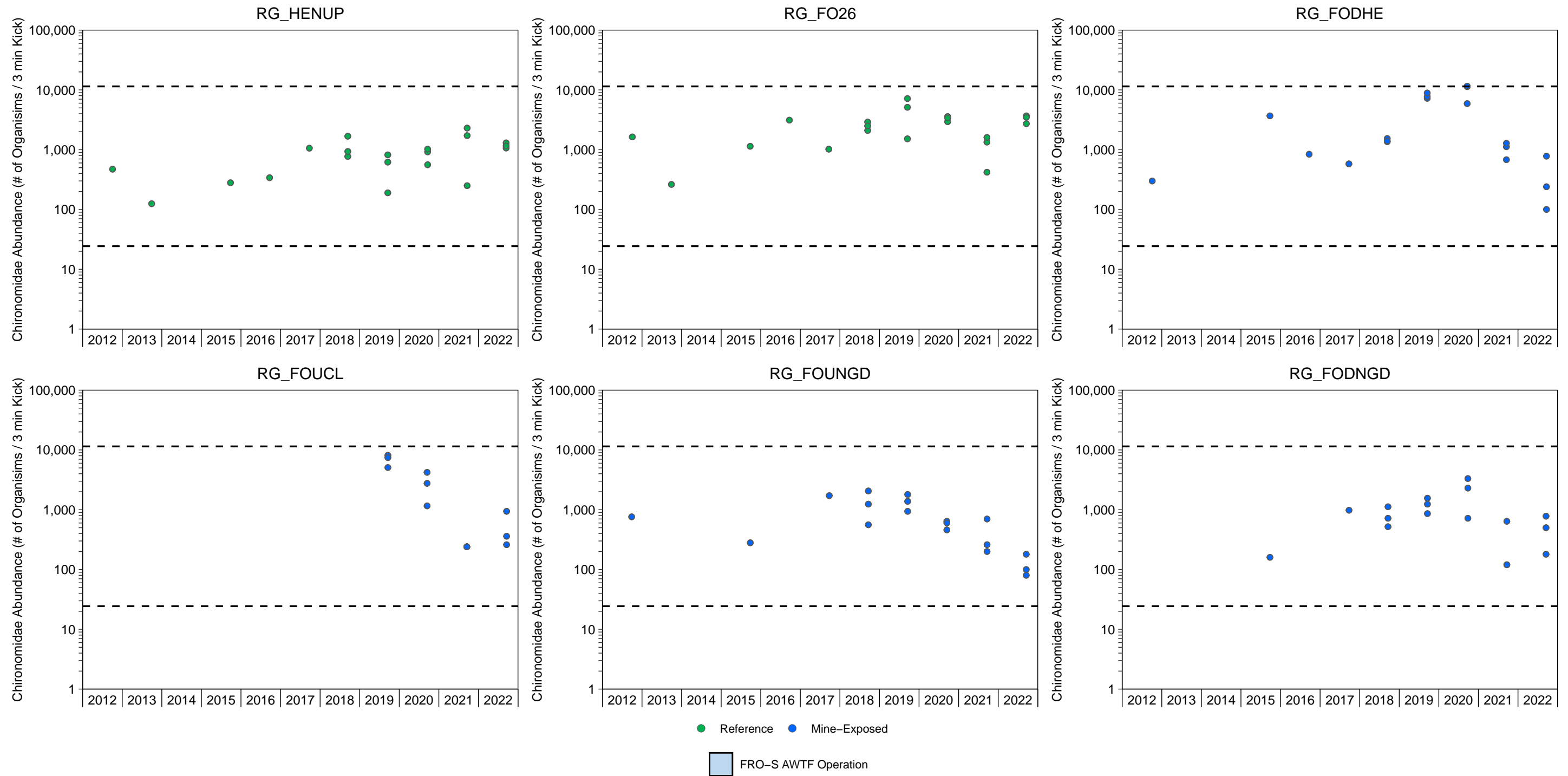


Figure G.22: Benthic Invertebrate Chironomidae Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

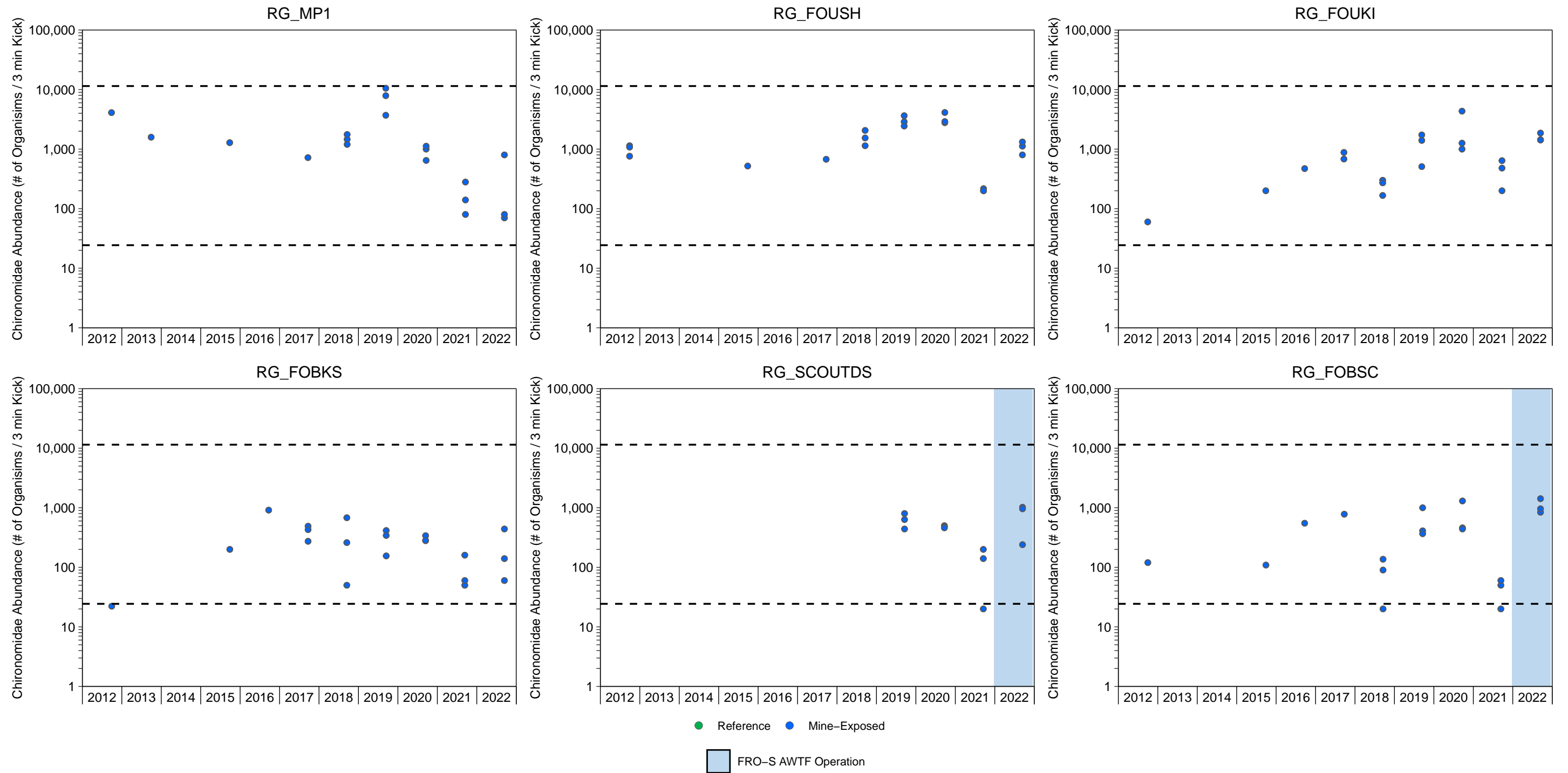


Figure G.22: Benthic Invertebrate Chironomidae Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

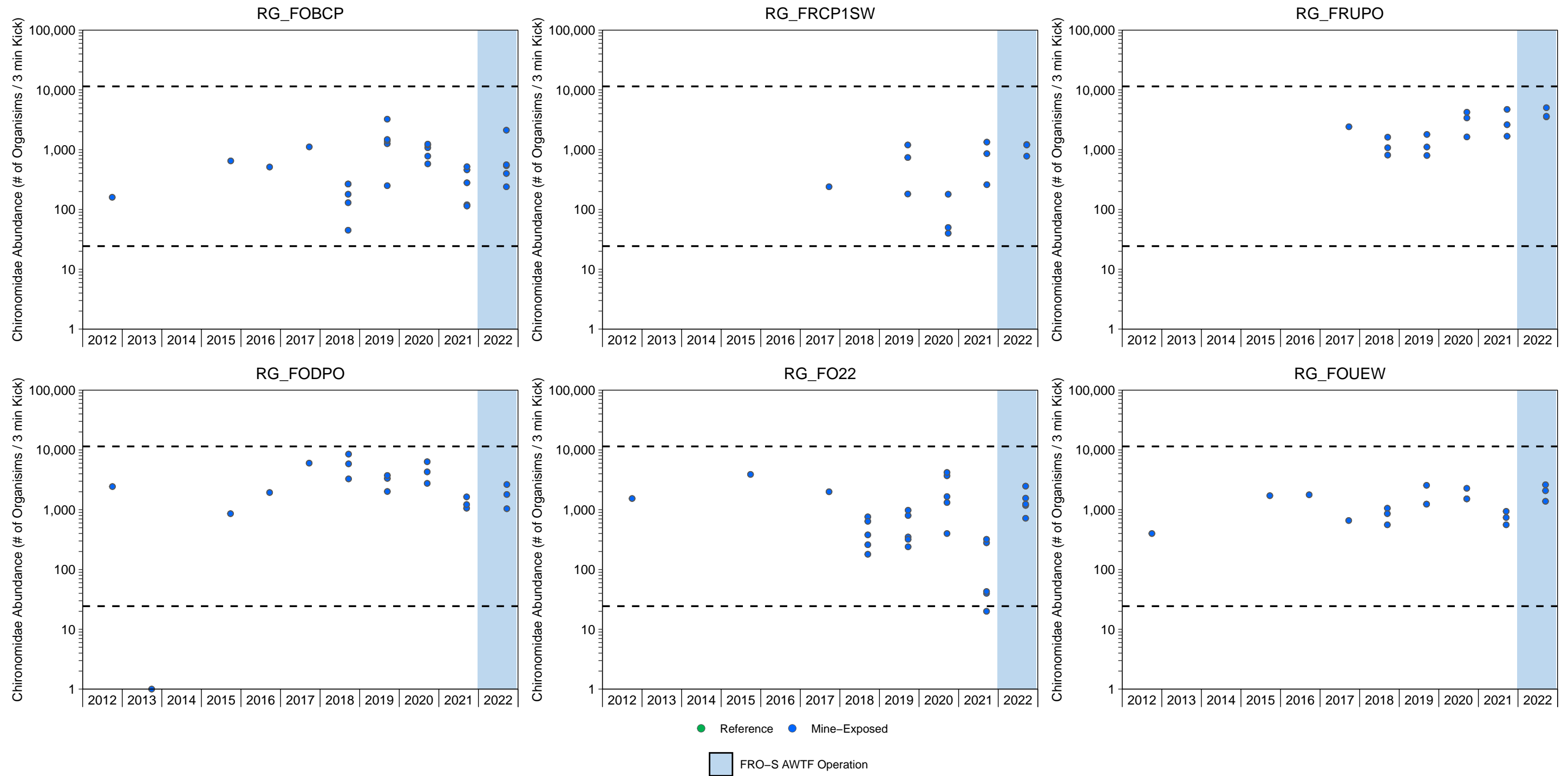


Figure G.22: Benthic Invertebrate Chironomidae Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

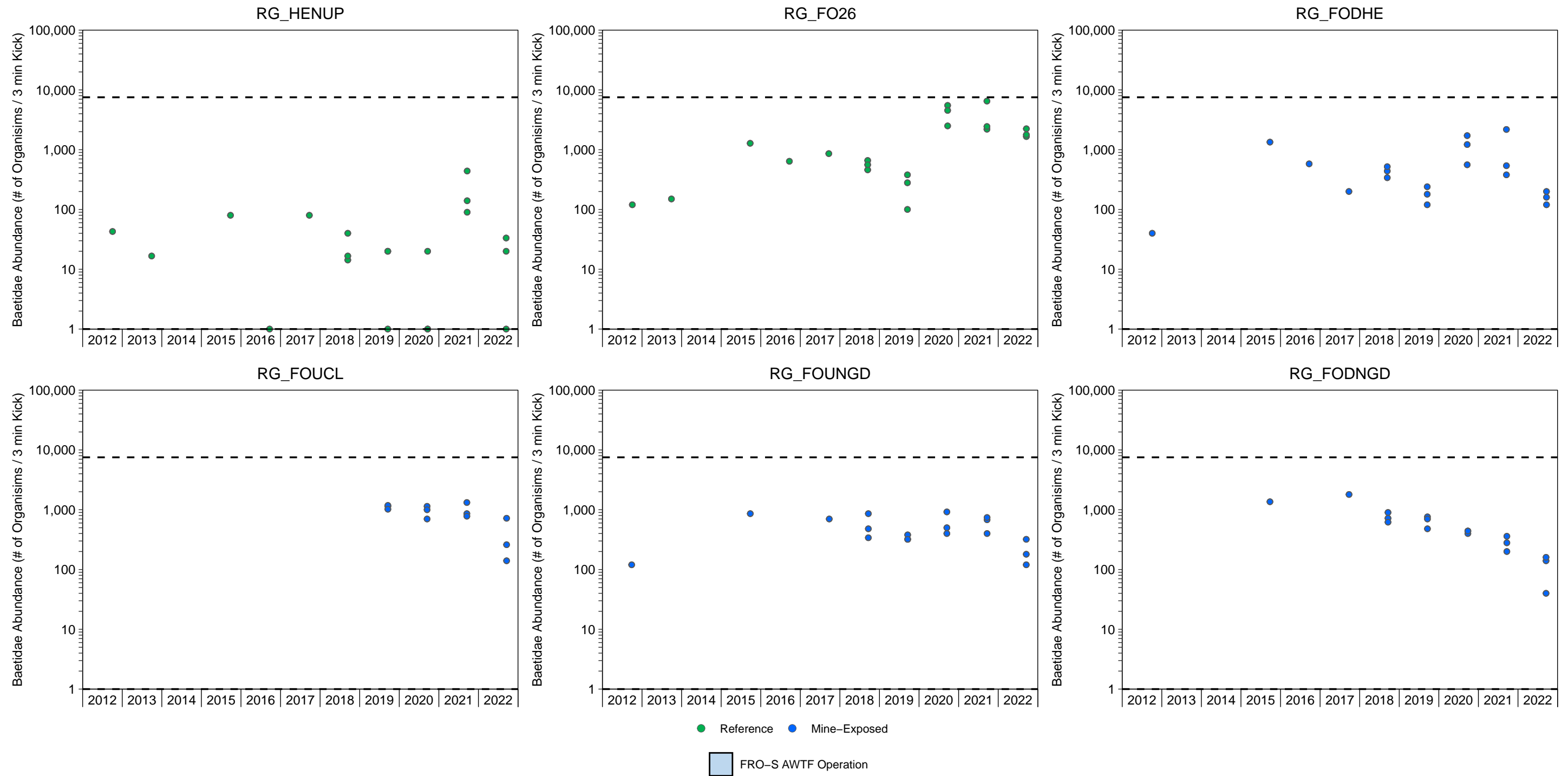


Figure G.23: Benthic Invertebrate Baetidae Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

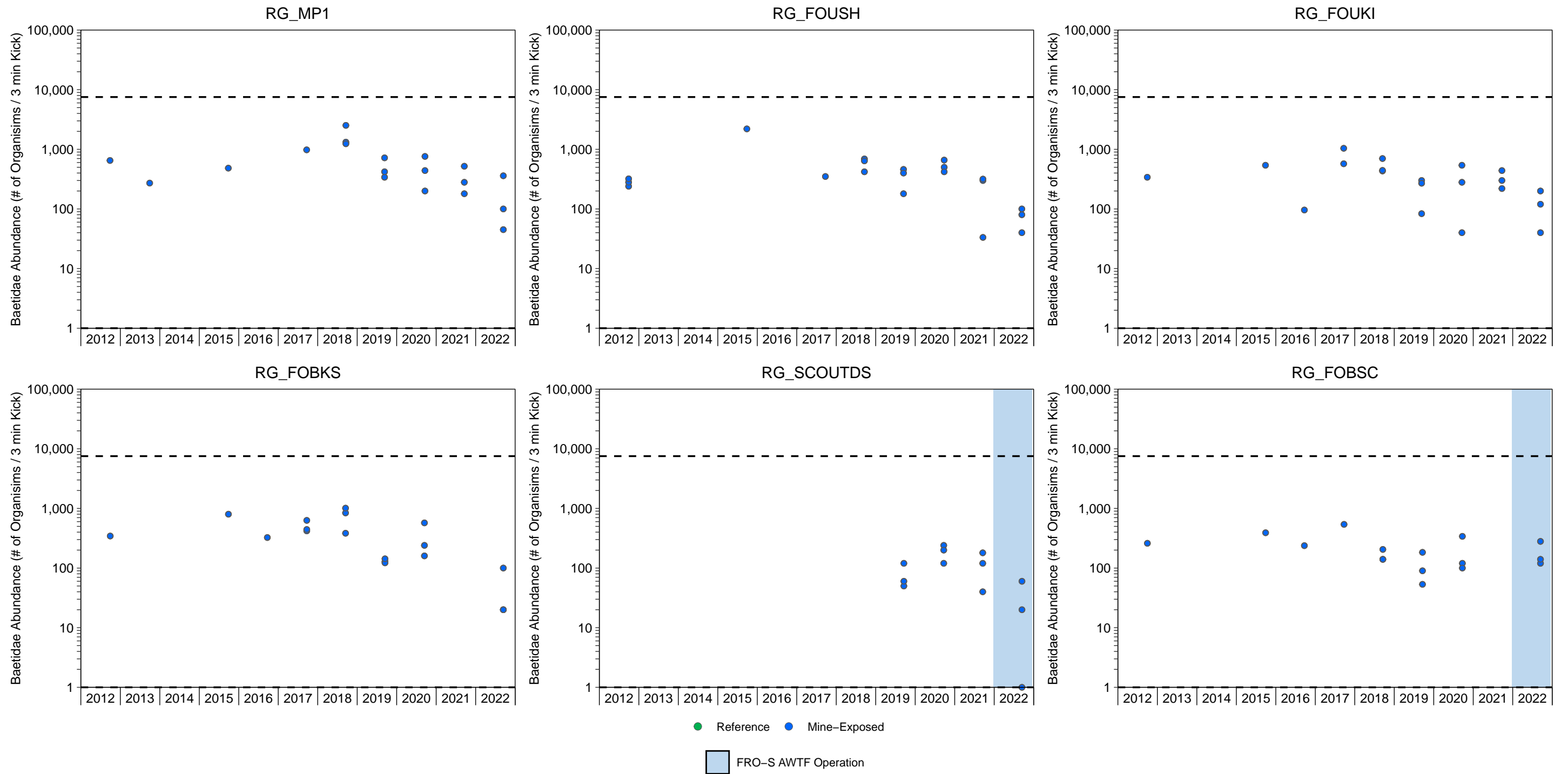


Figure G.23: Benthic Invertebrate Baetidae Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

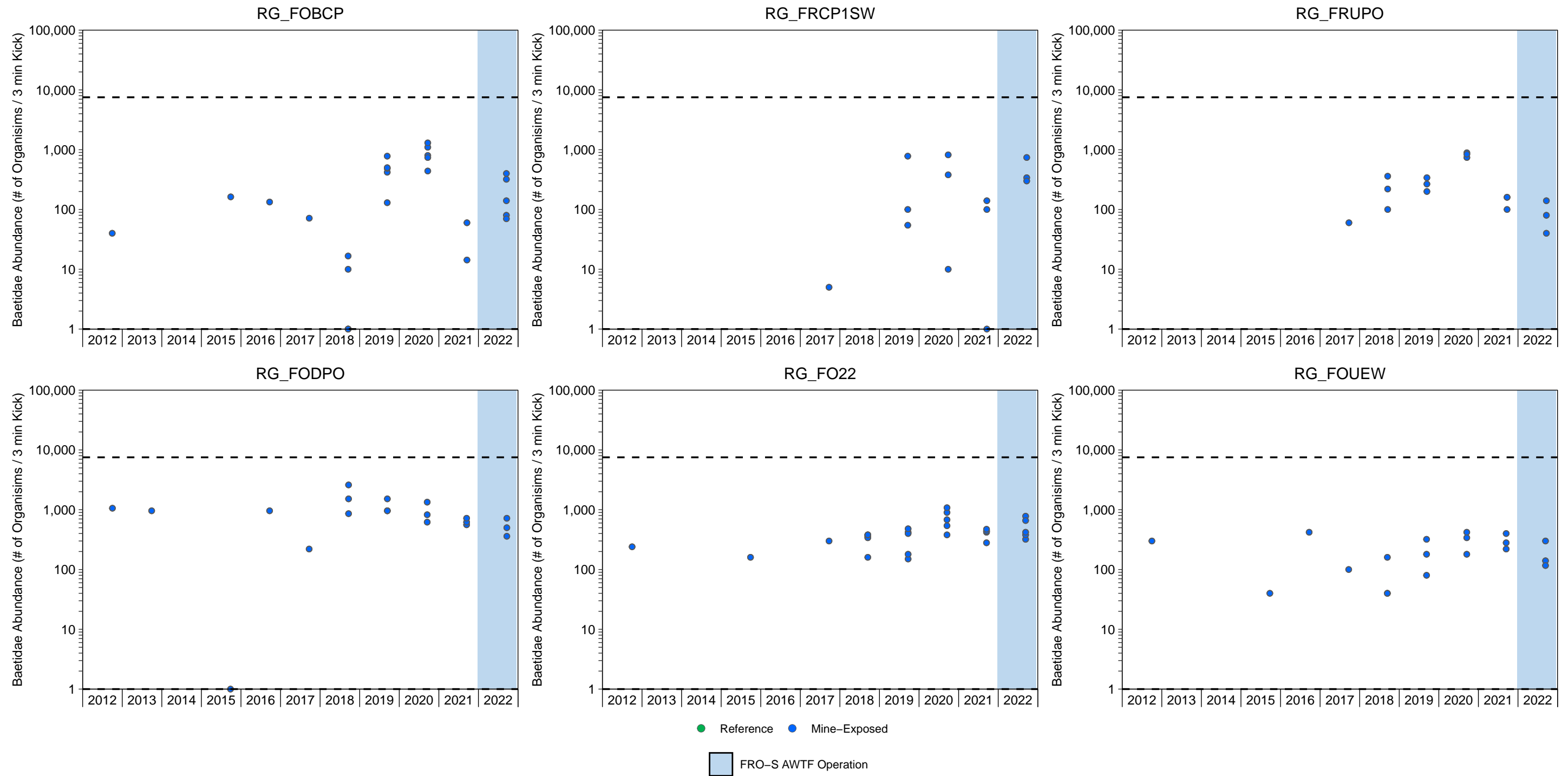


Figure G.23: Benthic Invertebrate Baetidae Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

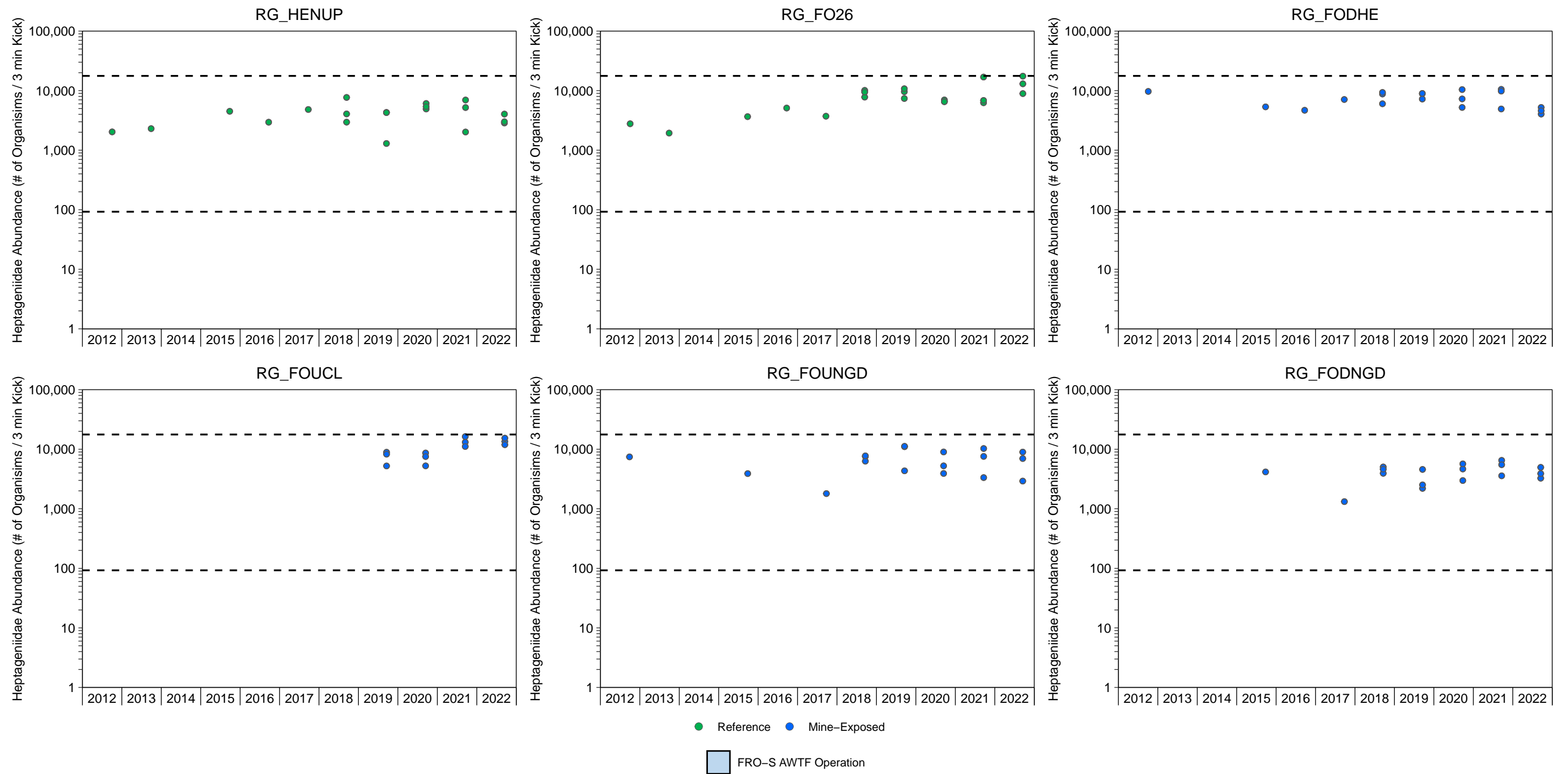


Figure G.24: Benthic Invertebrate Heptageniidae Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

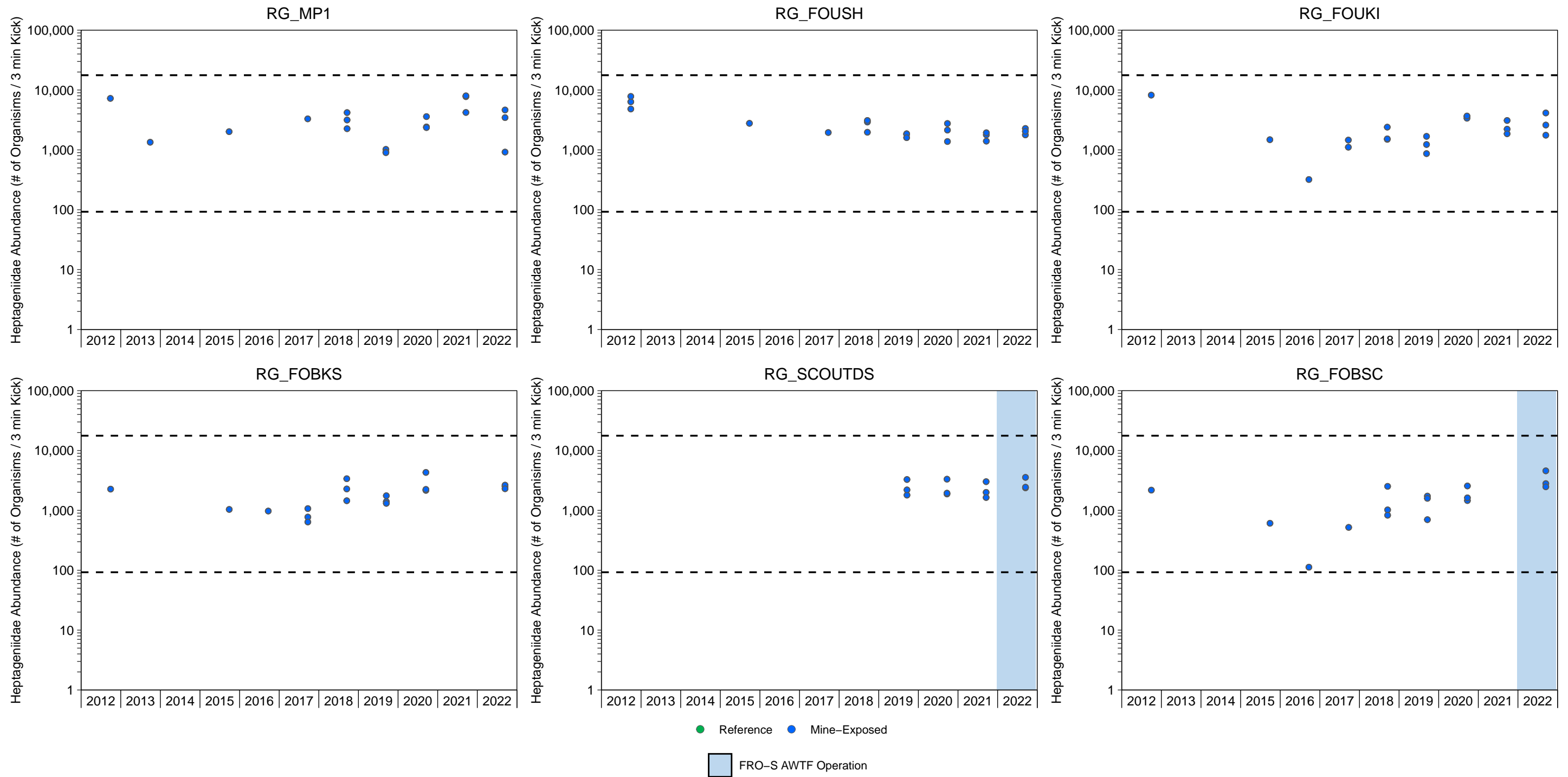


Figure G.24: Benthic Invertebrate Heptageniidae Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

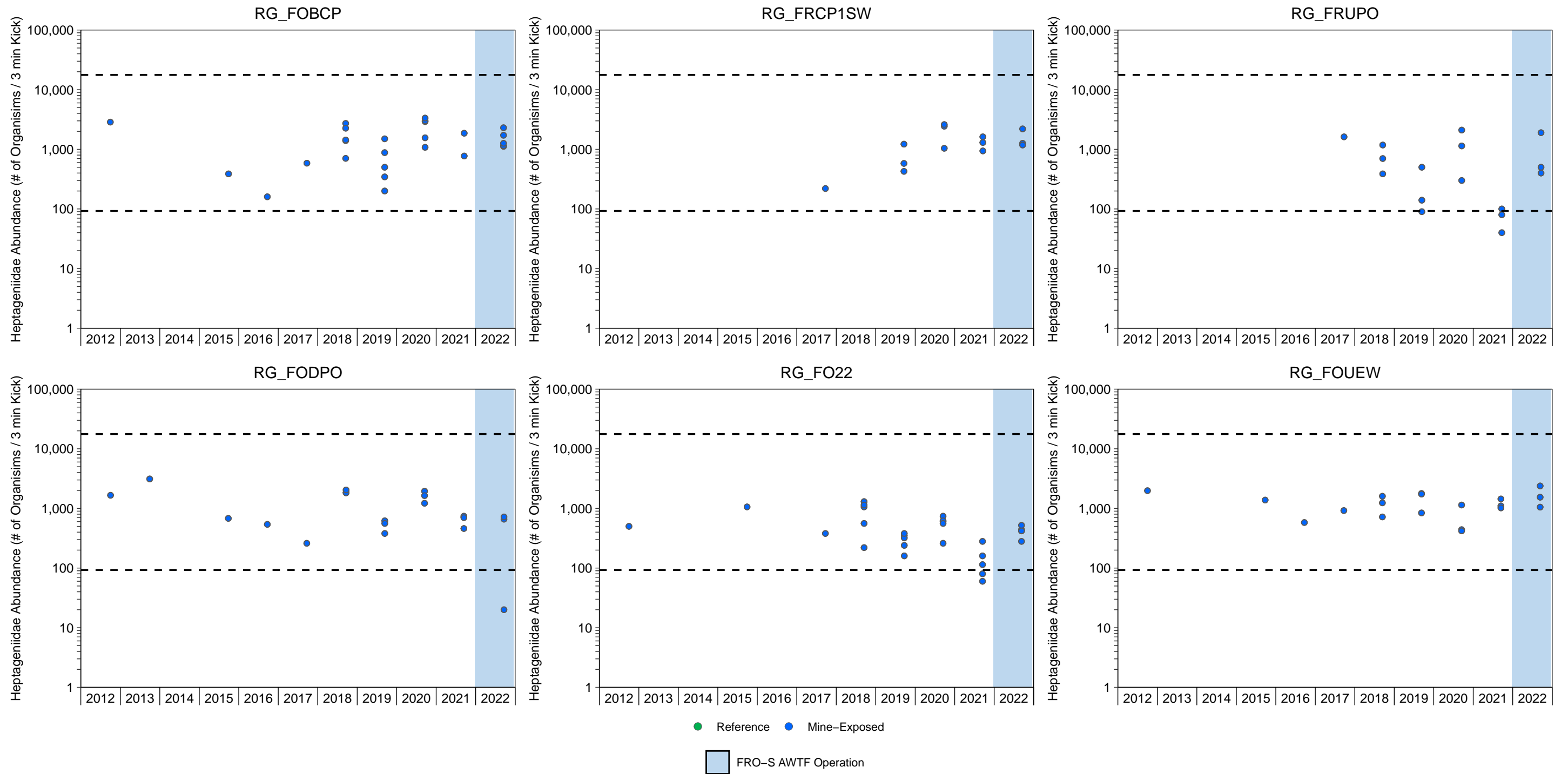


Figure G.24: Benthic Invertebrate Heptageniidae Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

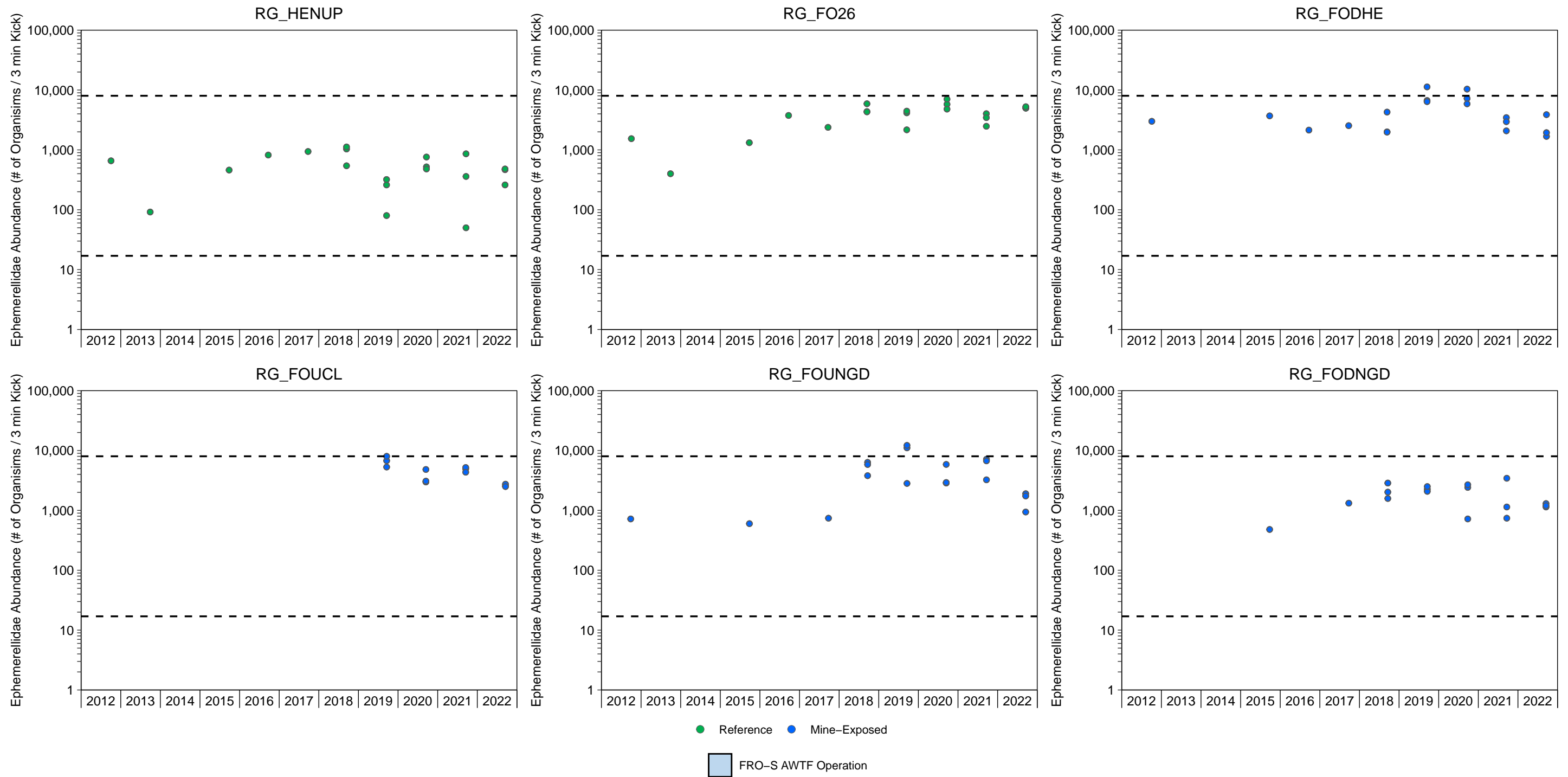


Figure G.25: Benthic Invertebrate Ephemereleidiae Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

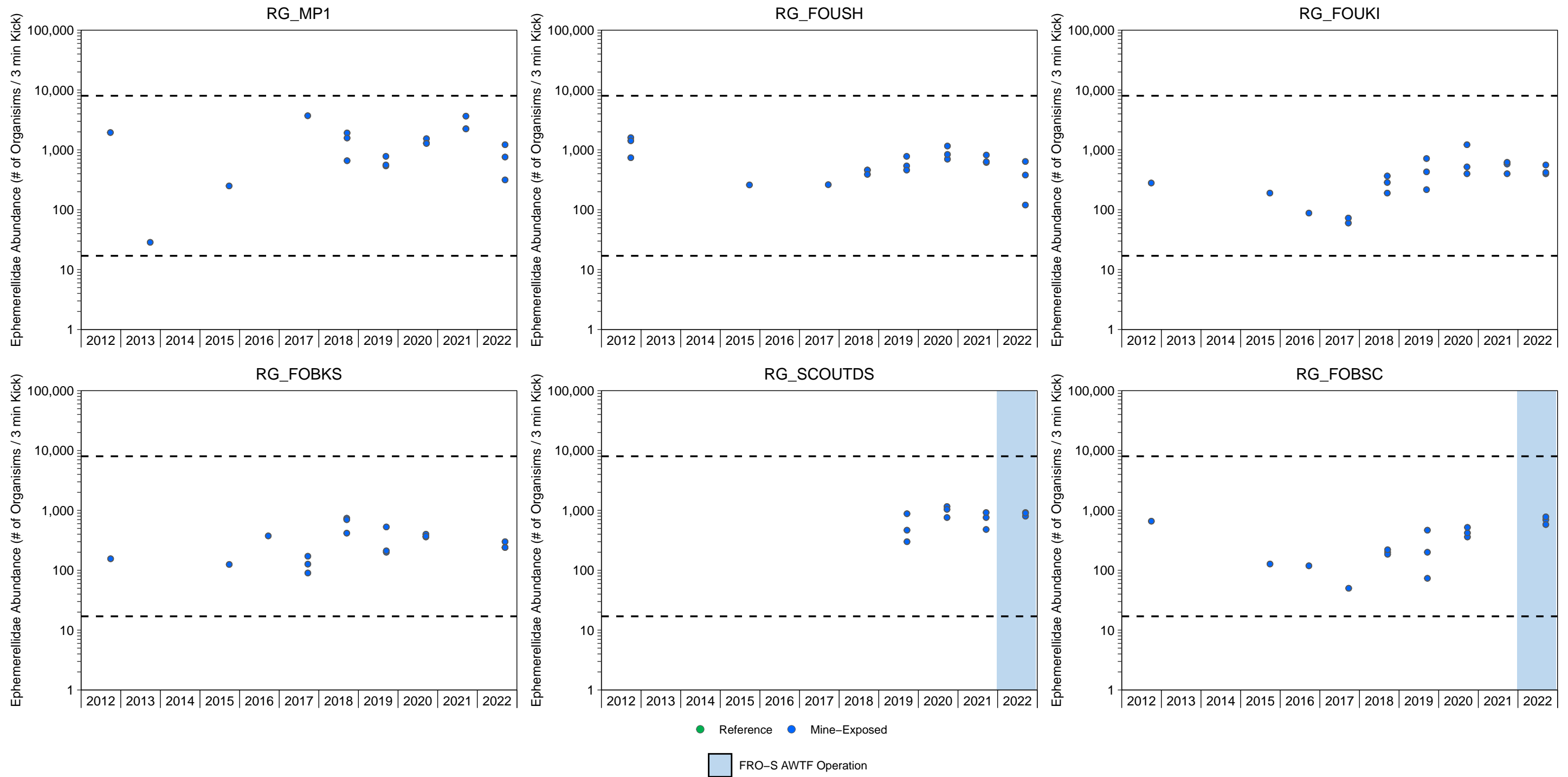


Figure G.25: Benthic Invertebrate Ephemereleididae Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

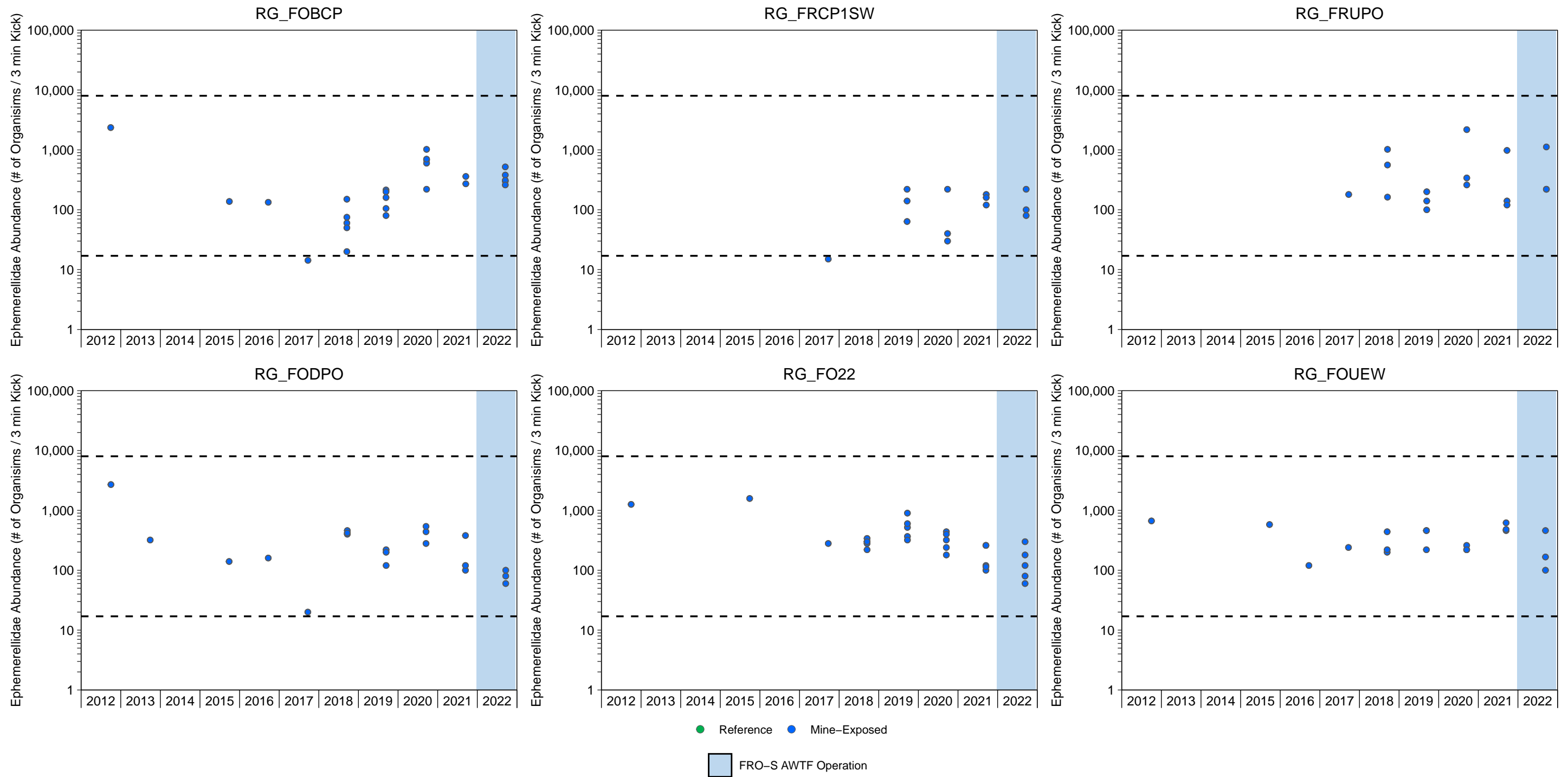


Figure G.25: Benthic Invertebrate Ephemereleididae Abundance in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

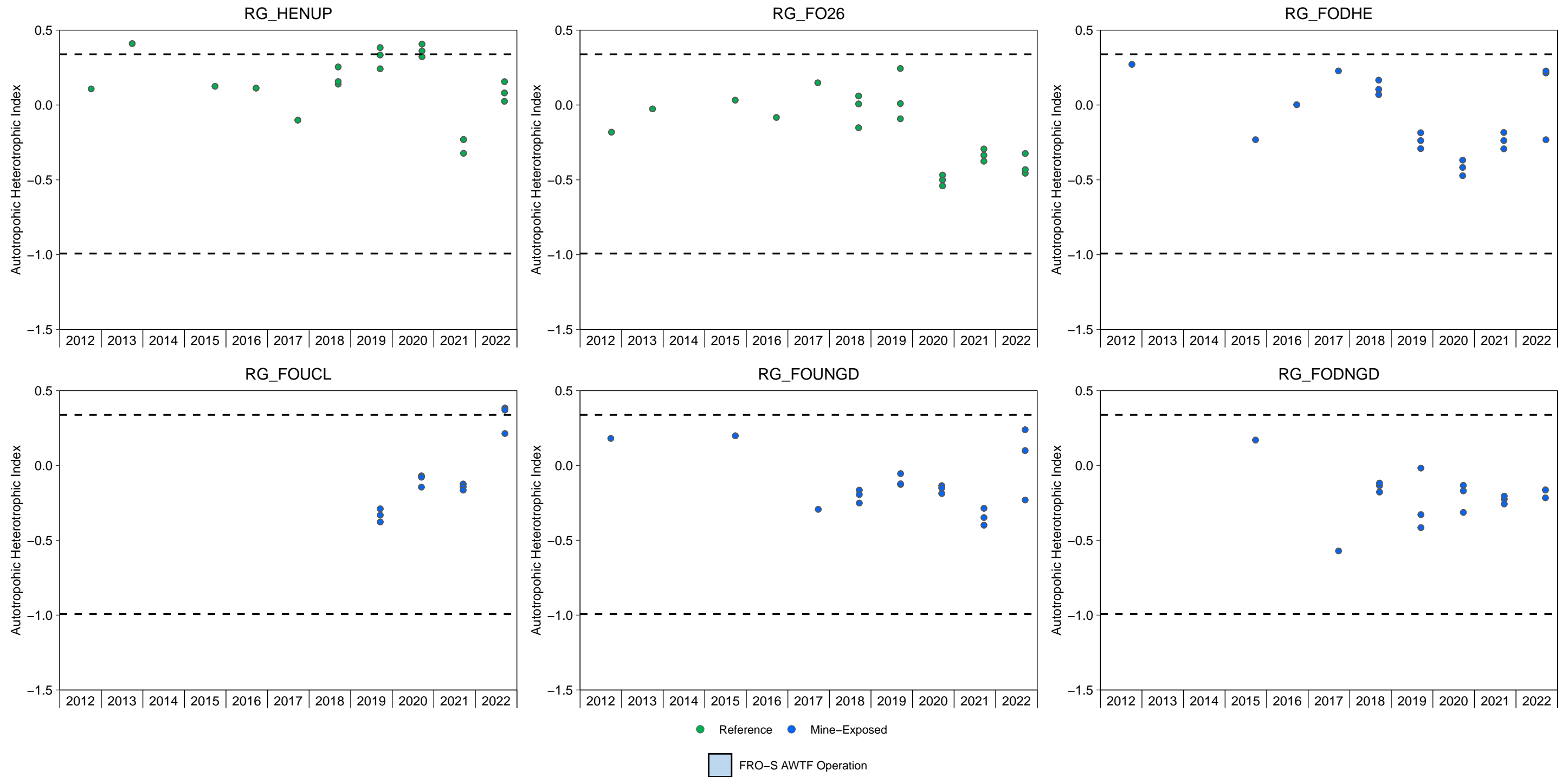


Figure G.26: Benthic Invertebrate Autotrophic Heterotrophic Index in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

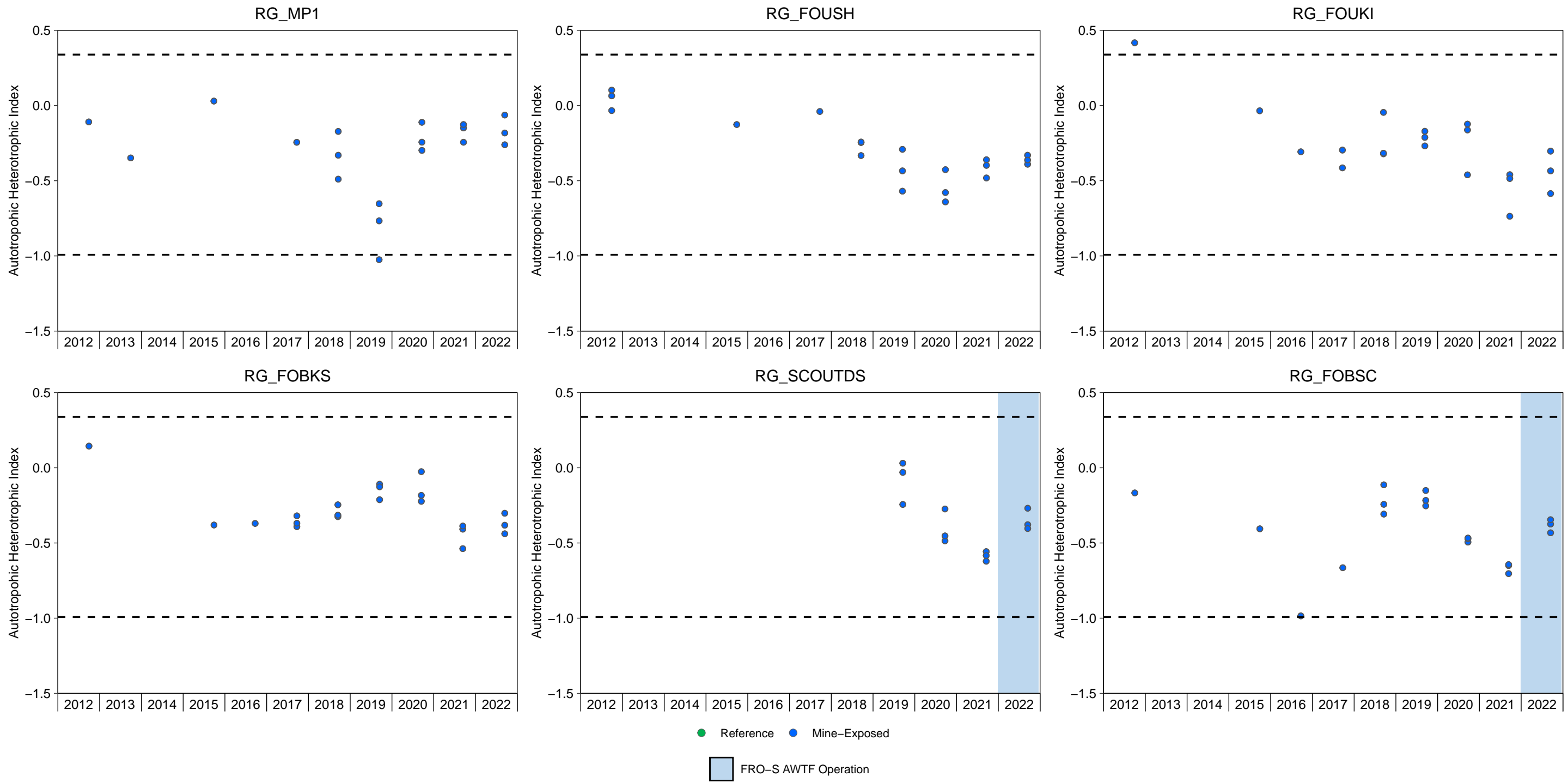


Figure G.26: Benthic Invertebrate Autotrophic Heterotrophic Index in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

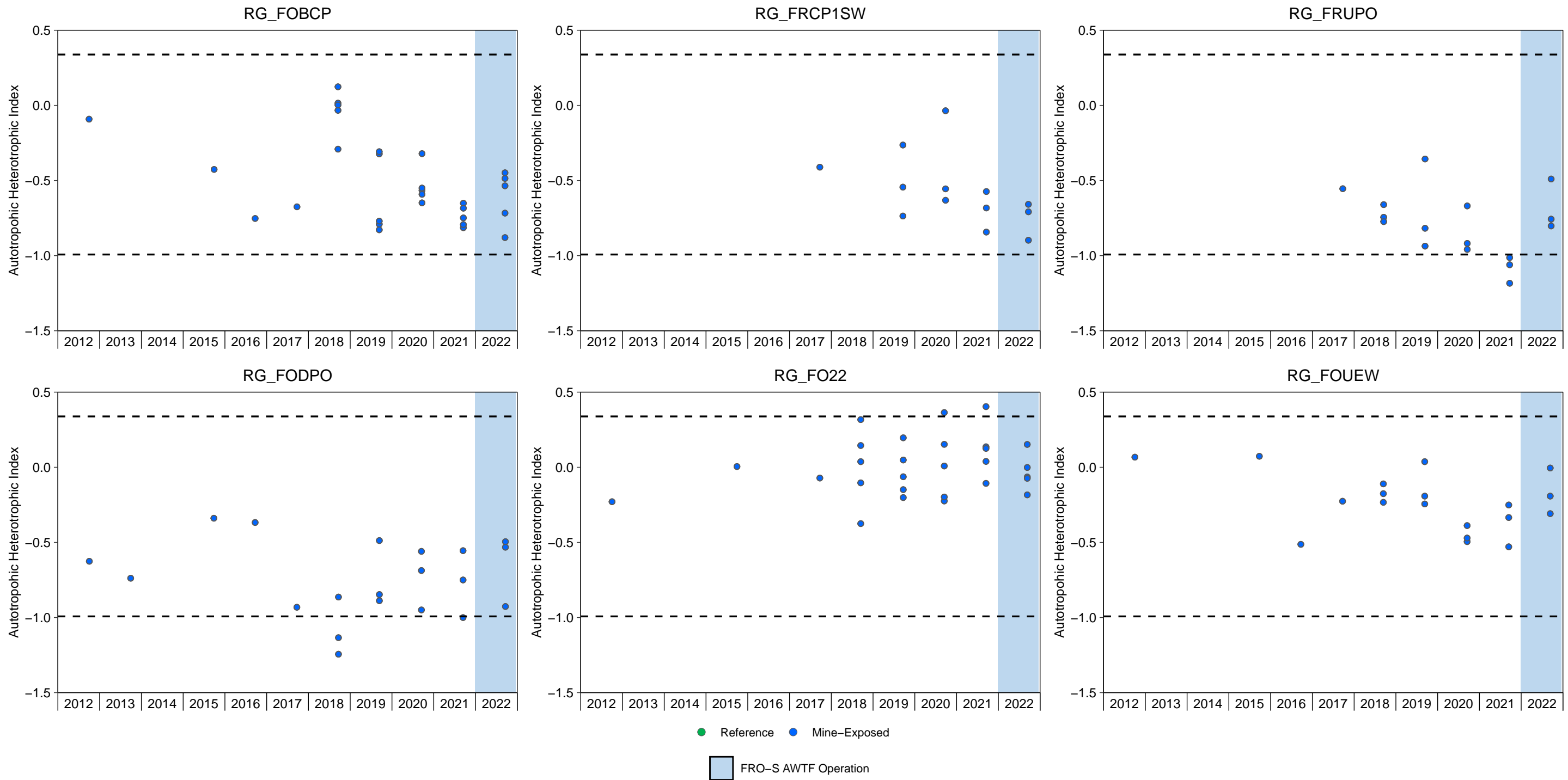


Figure G.26: Benthic Invertebrate Autotrophic Heterotrophic Index in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

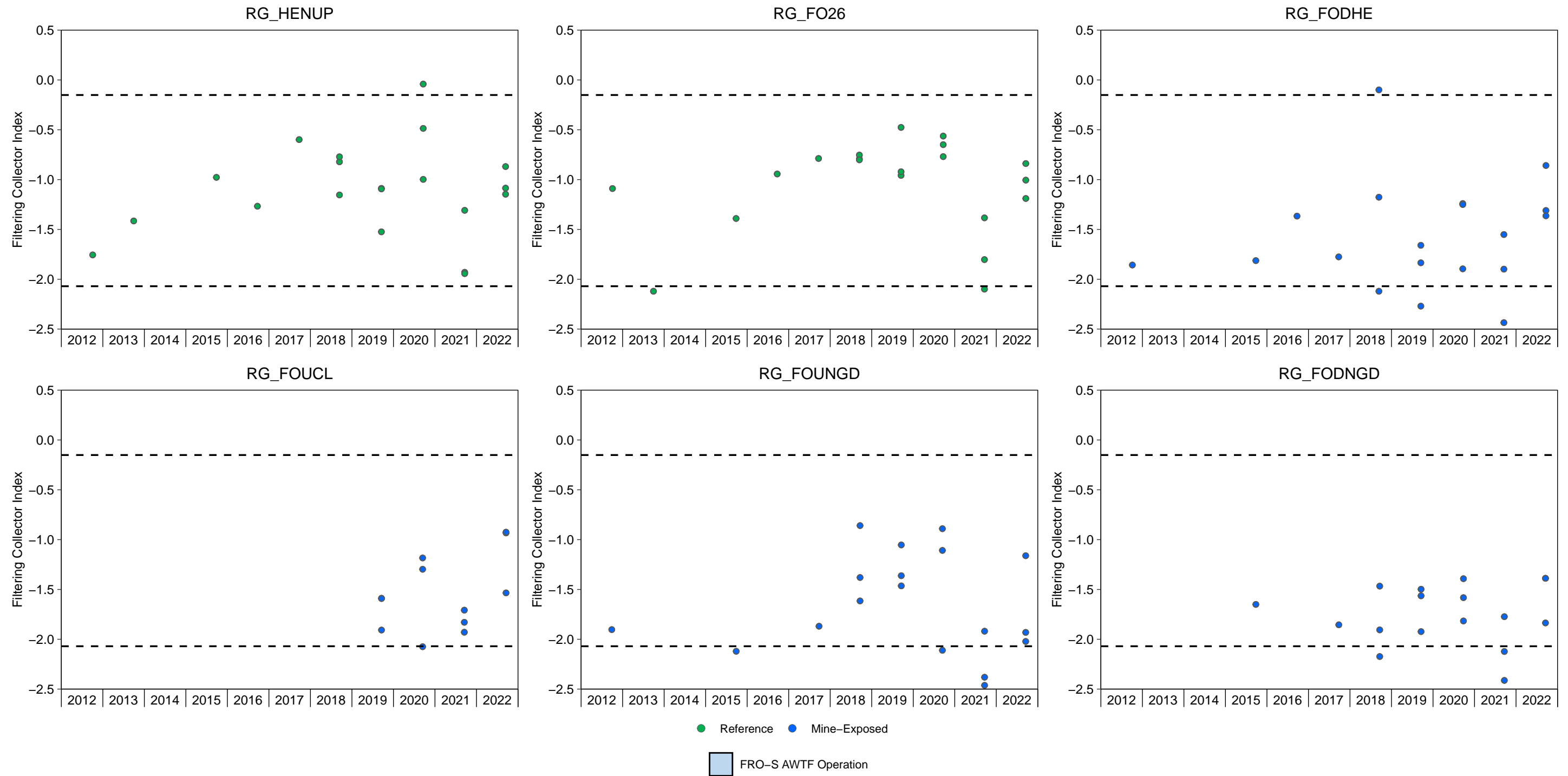


Figure G.27: Benthic Invertebrate Filtering Collector Index in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

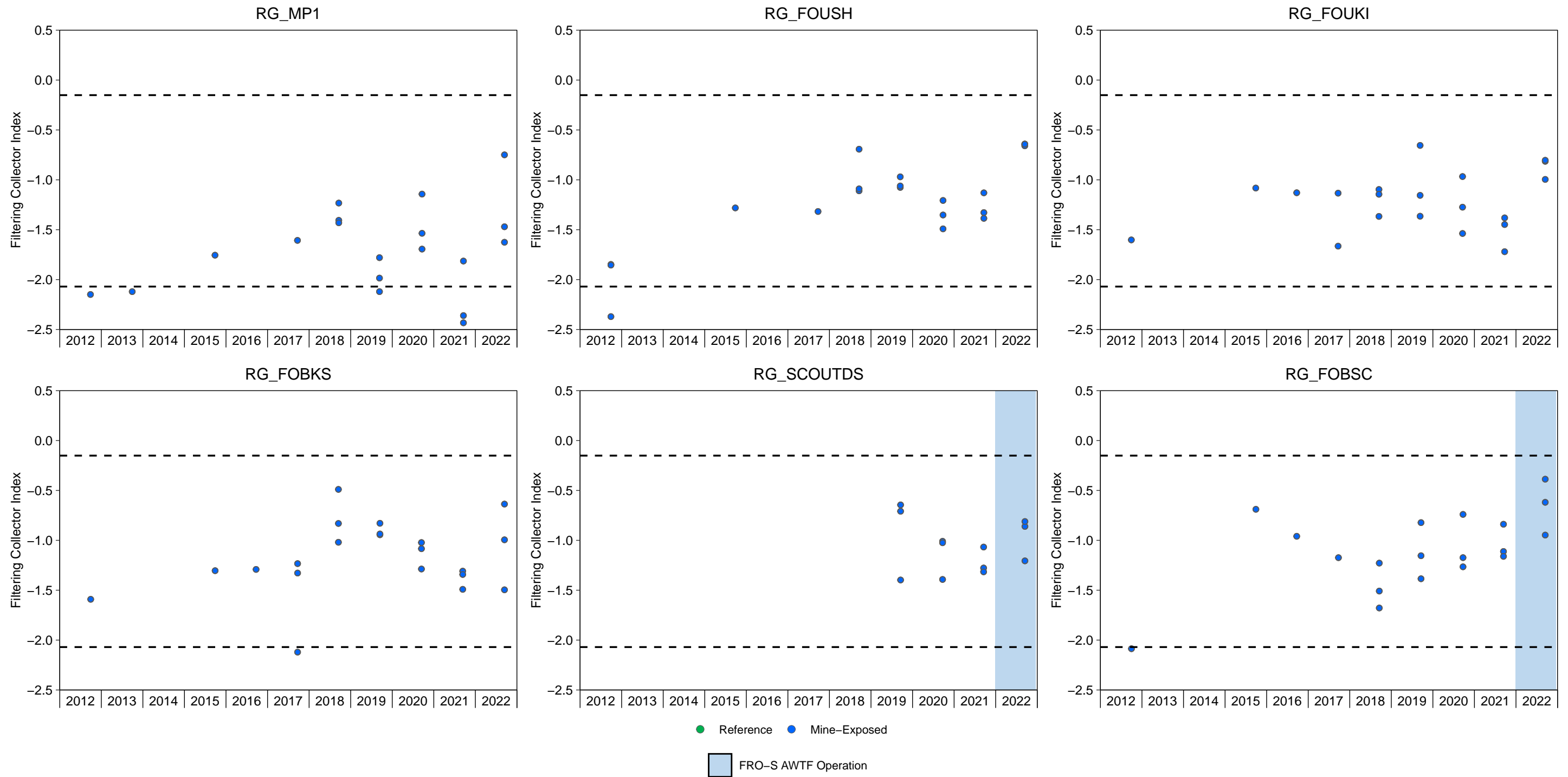


Figure G.27: Benthic Invertebrate Filtering Collector Index in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

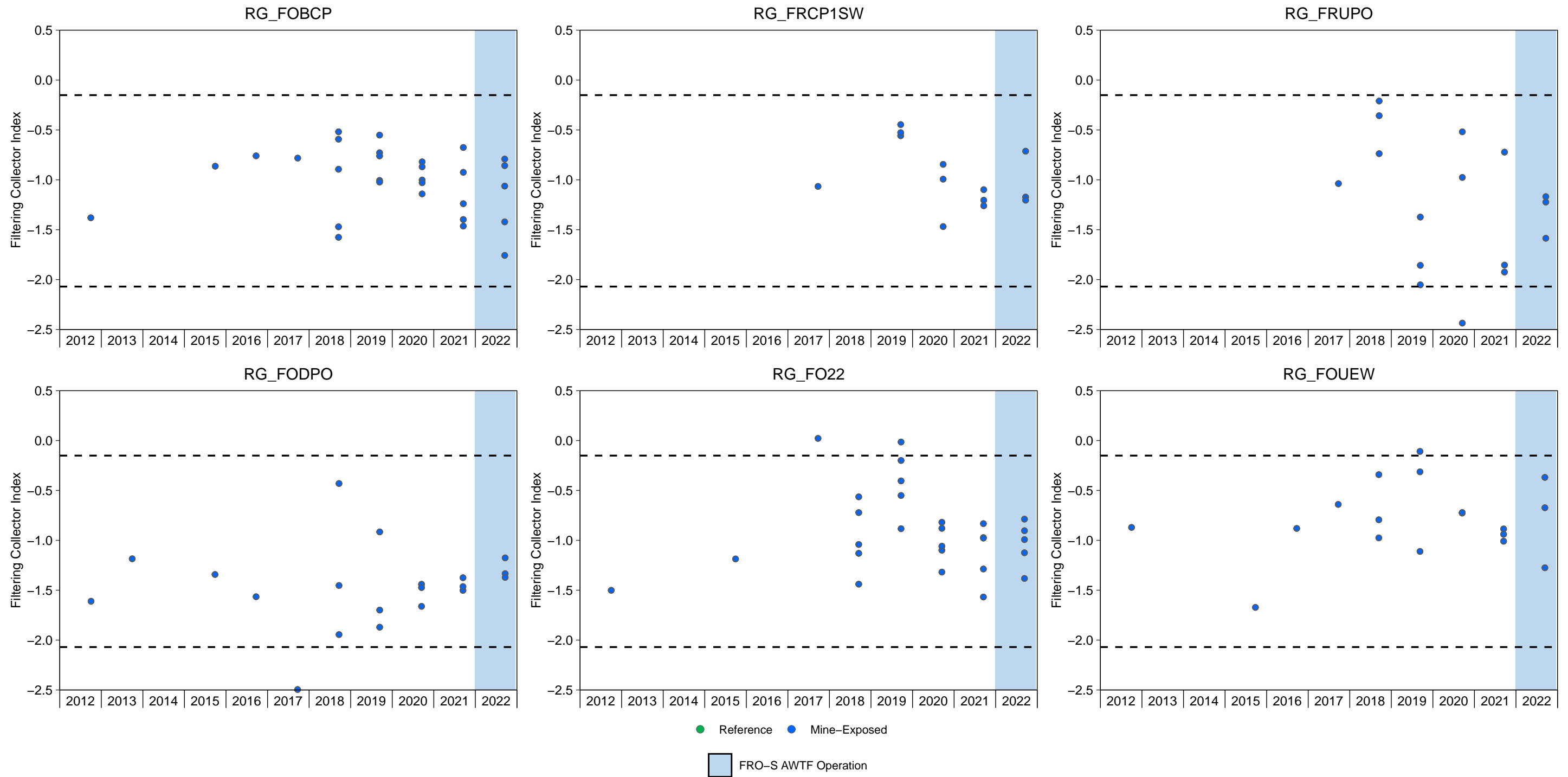


Figure G.27: Benthic Invertebrate Filtering Collector Index in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

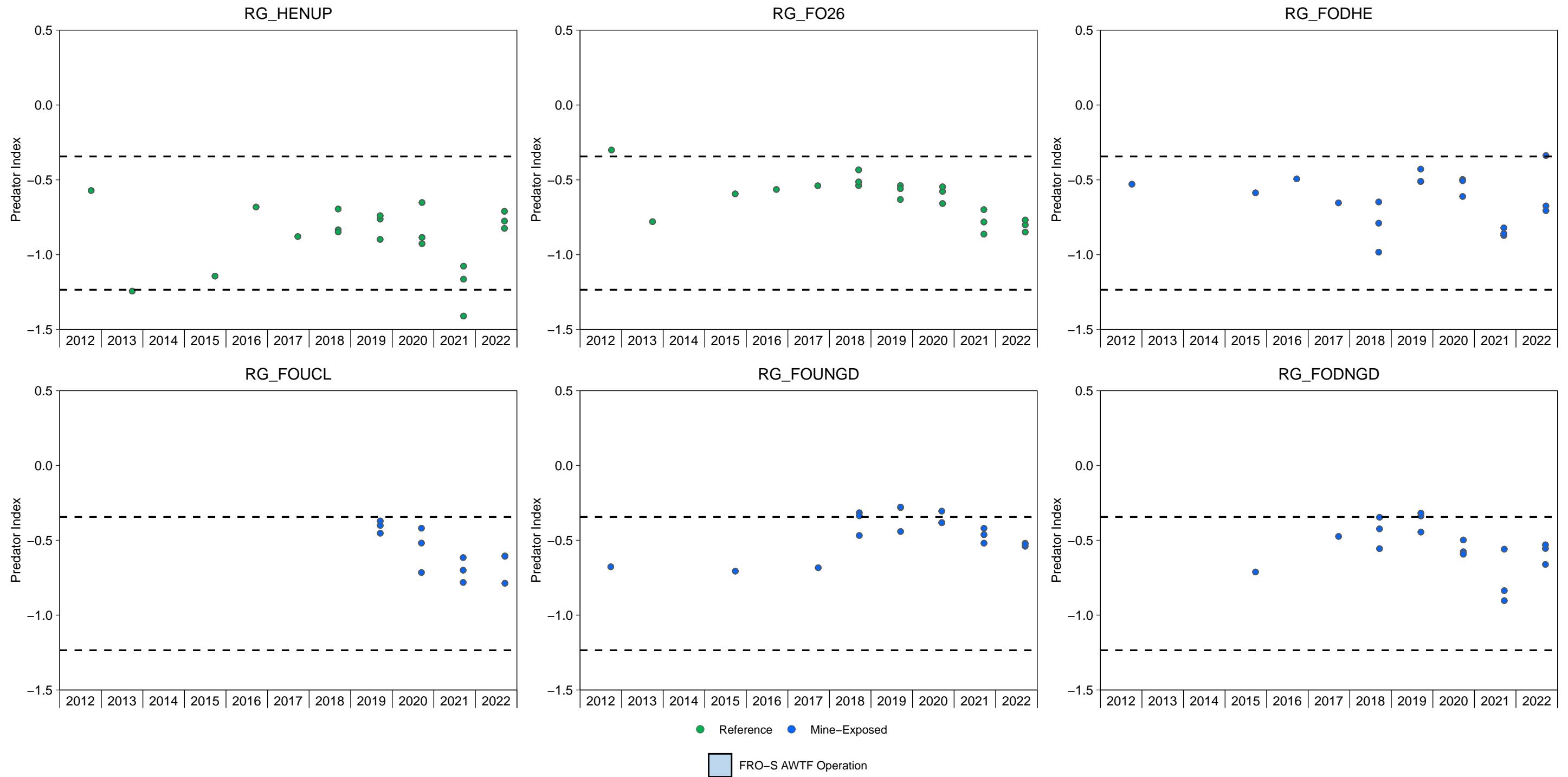


Figure G.28: Benthic Invertebrate Predator Index in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

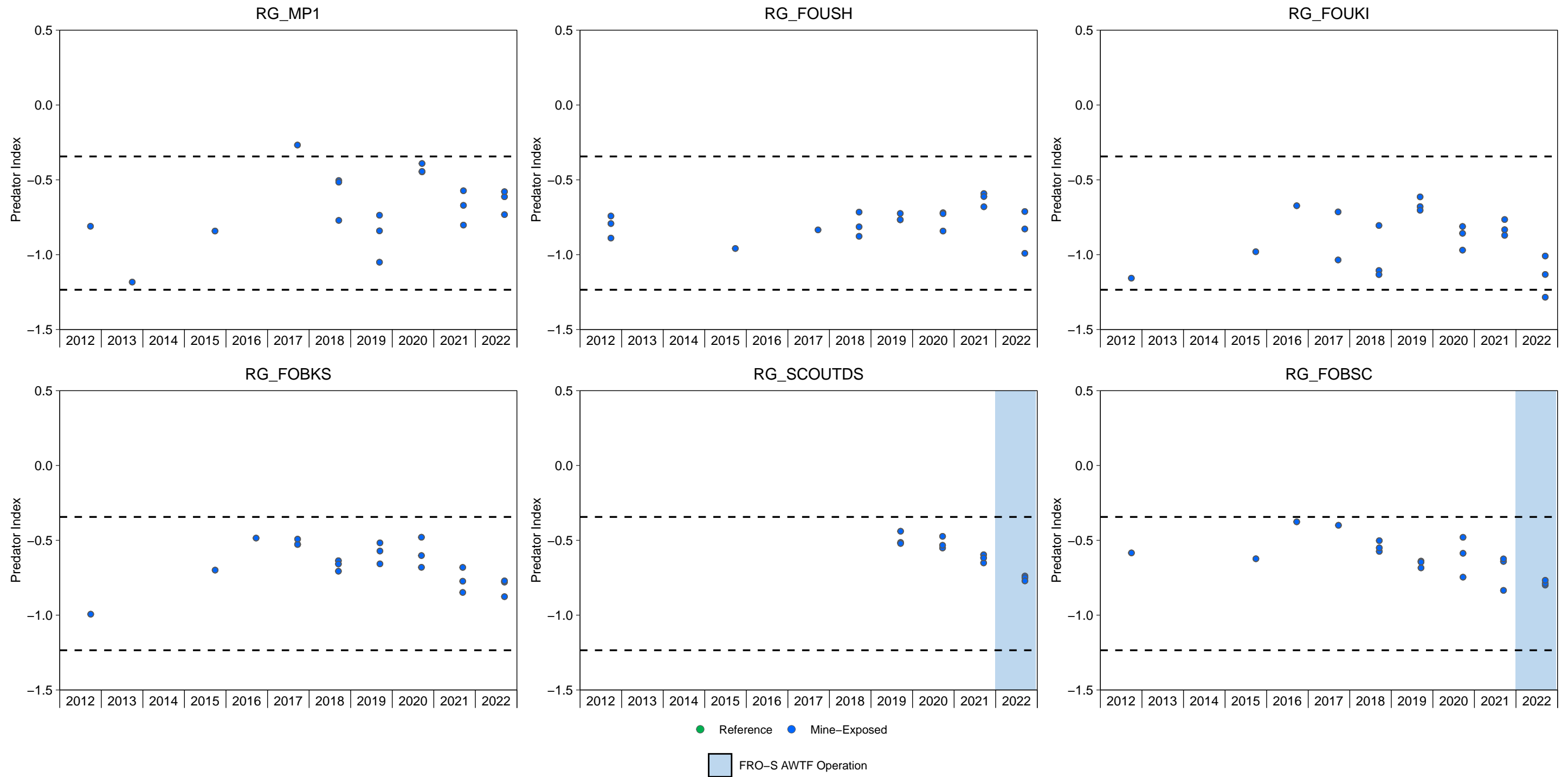


Figure G.28: Benthic Invertebrate Predator Index in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

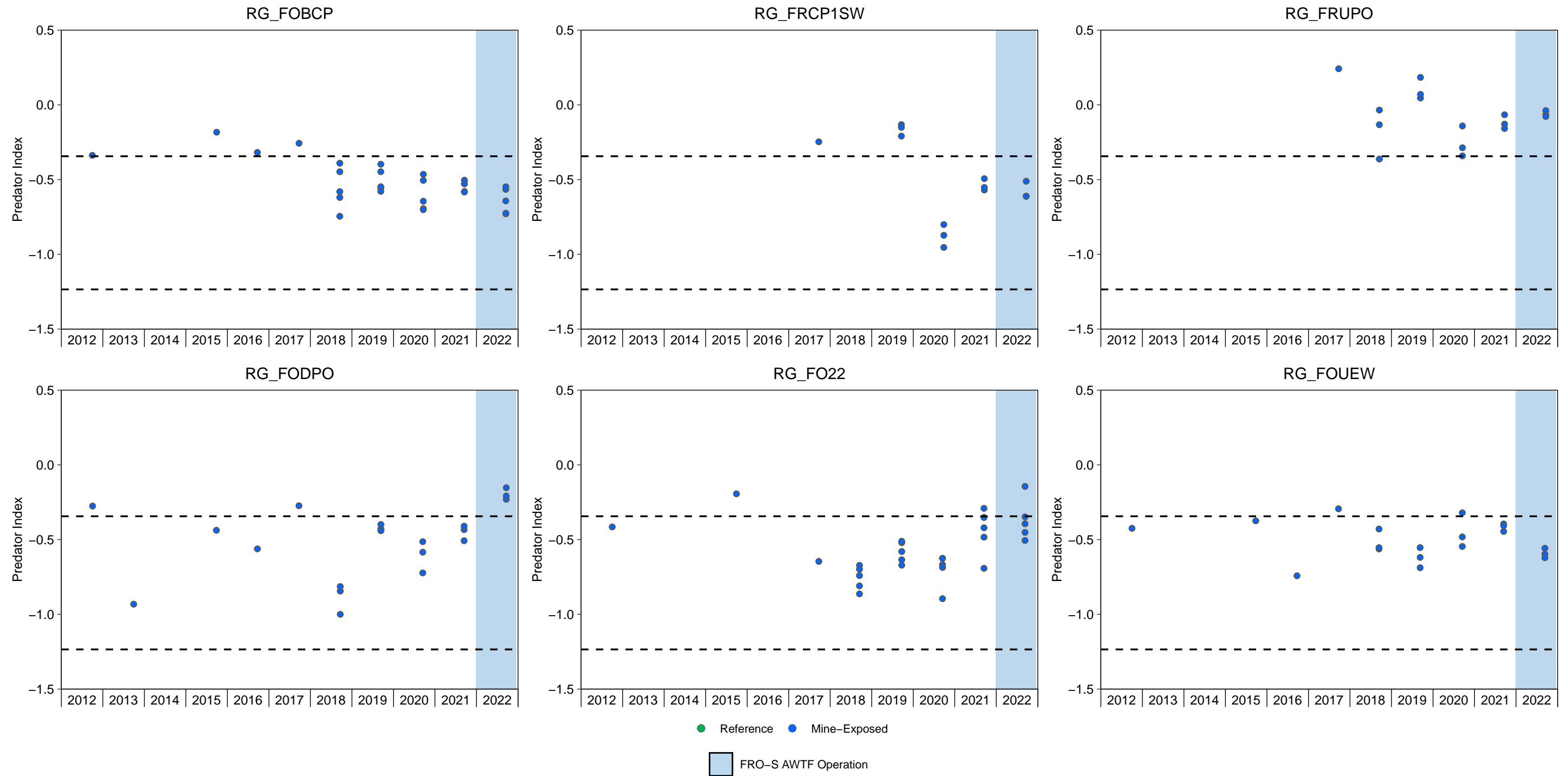


Figure G.28: Benthic Invertebrate Predator Index in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

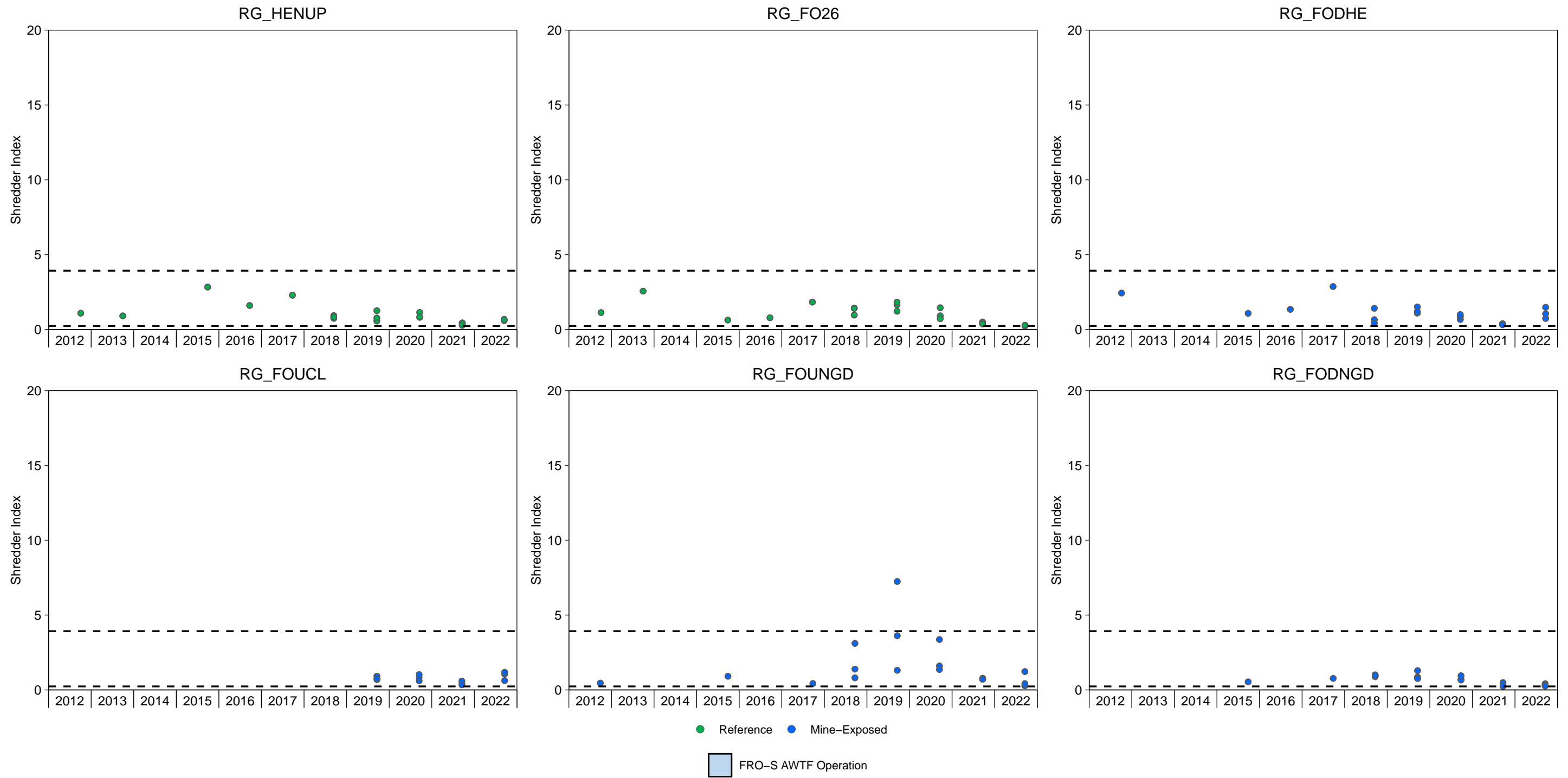


Figure G.29: Benthic Invertebrate Shredder Index in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

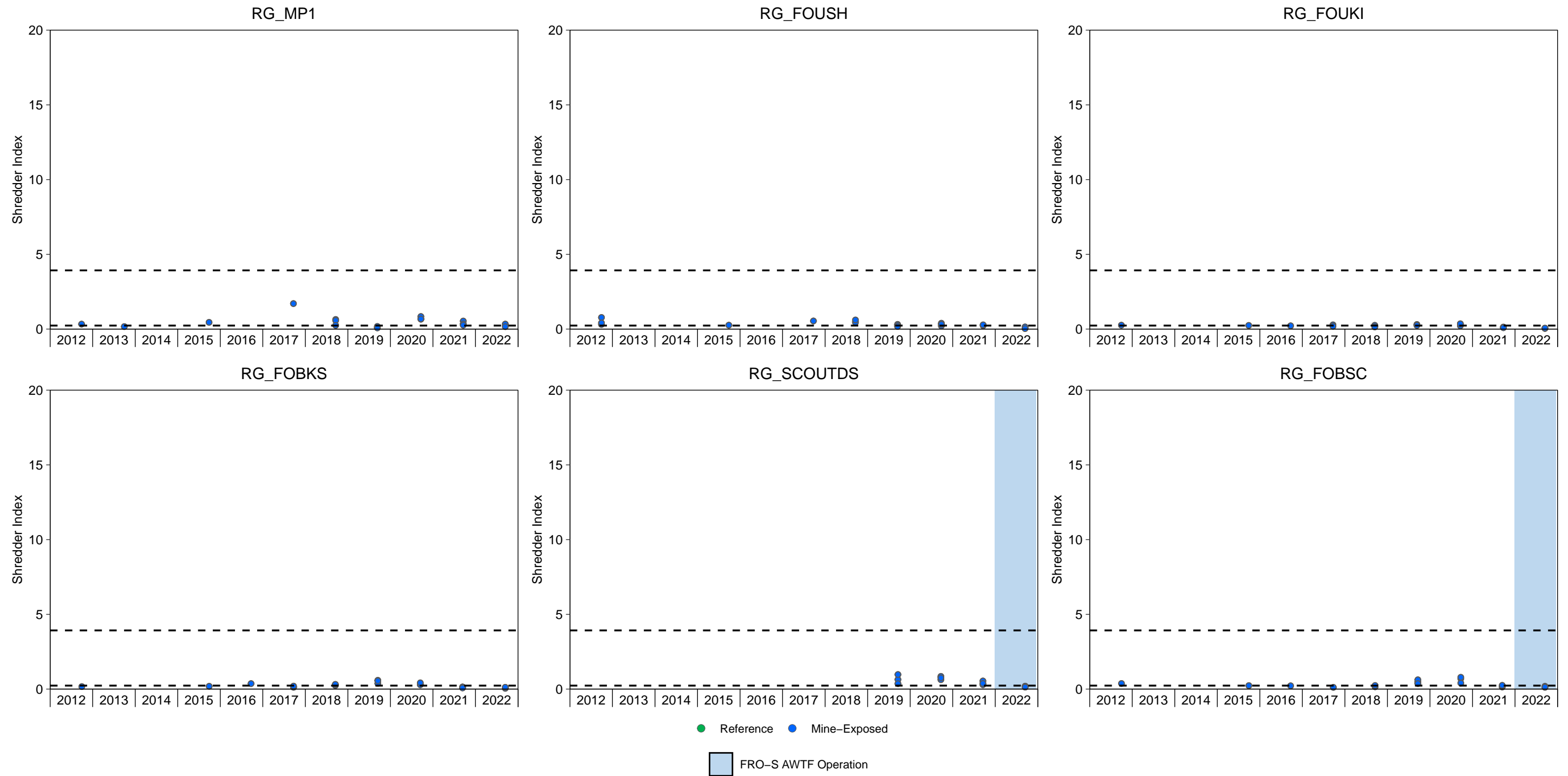


Figure G.29: Benthic Invertebrate Shredder Index in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

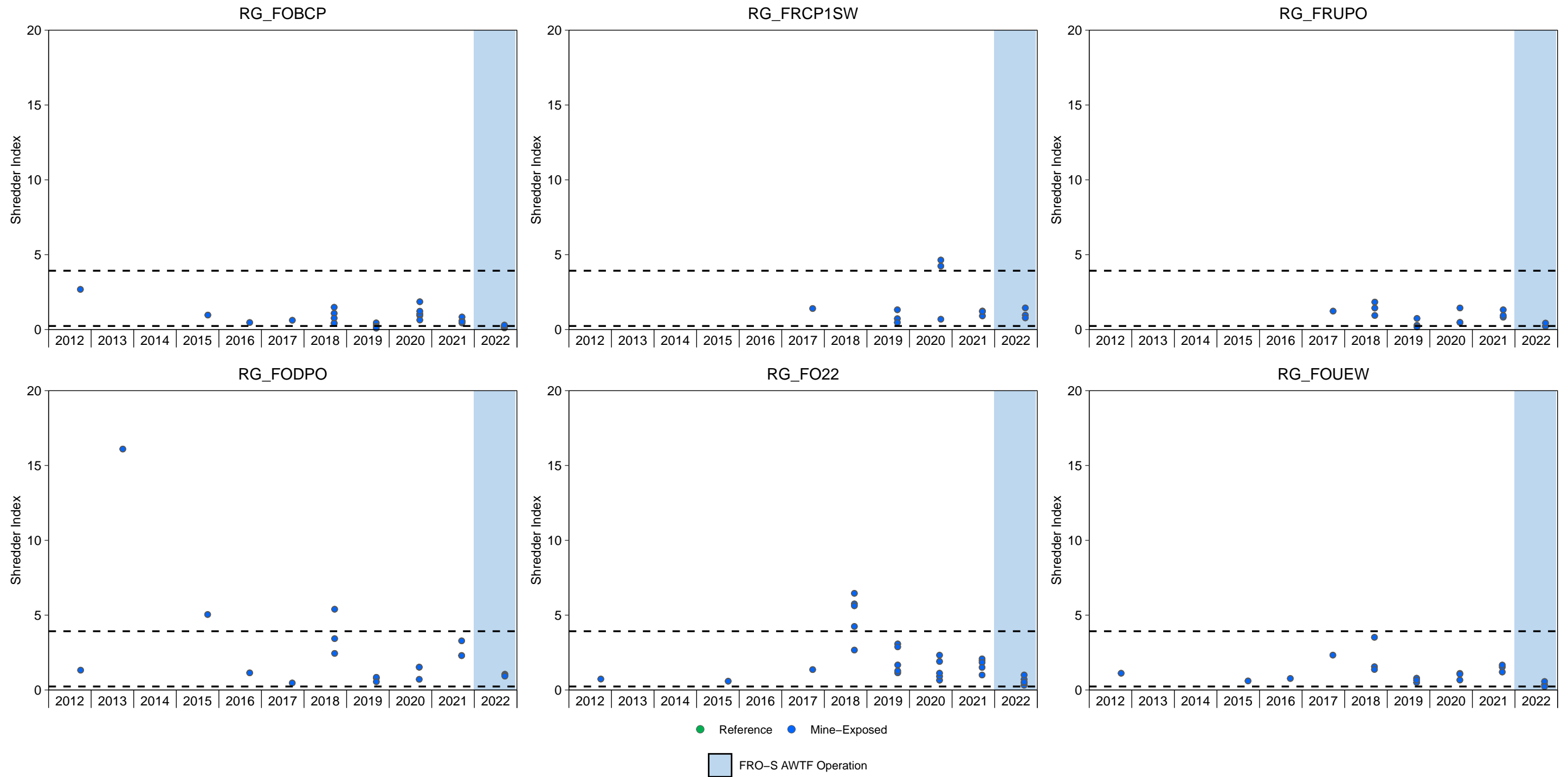


Figure G.29: Benthic Invertebrate Shredder Index in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

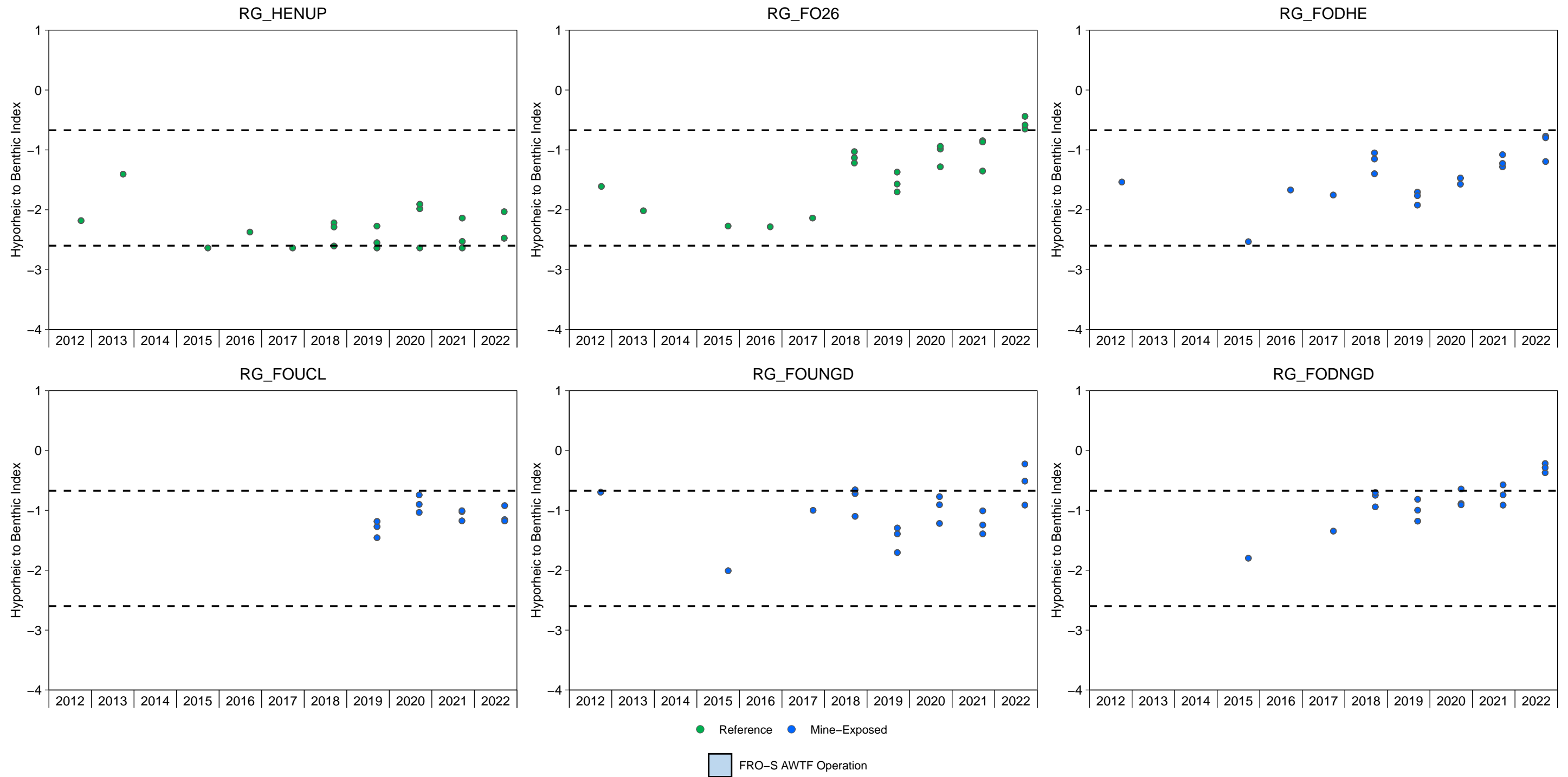


Figure G.30: Benthic Invertebrate Hyporheic to Benthic Index in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

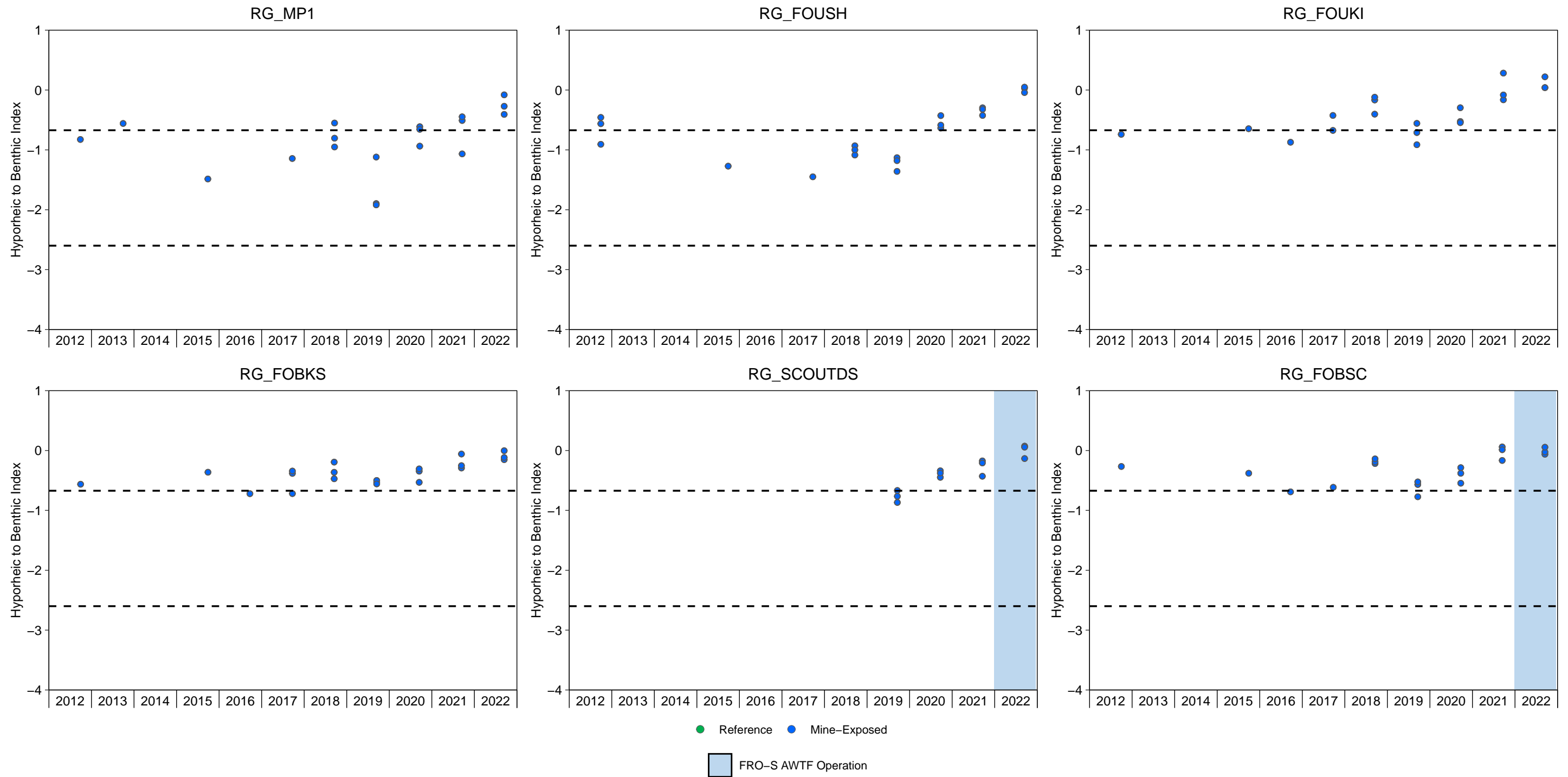


Figure G.30: Benthic Invertebrate Hyporheic to Benthic Index in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

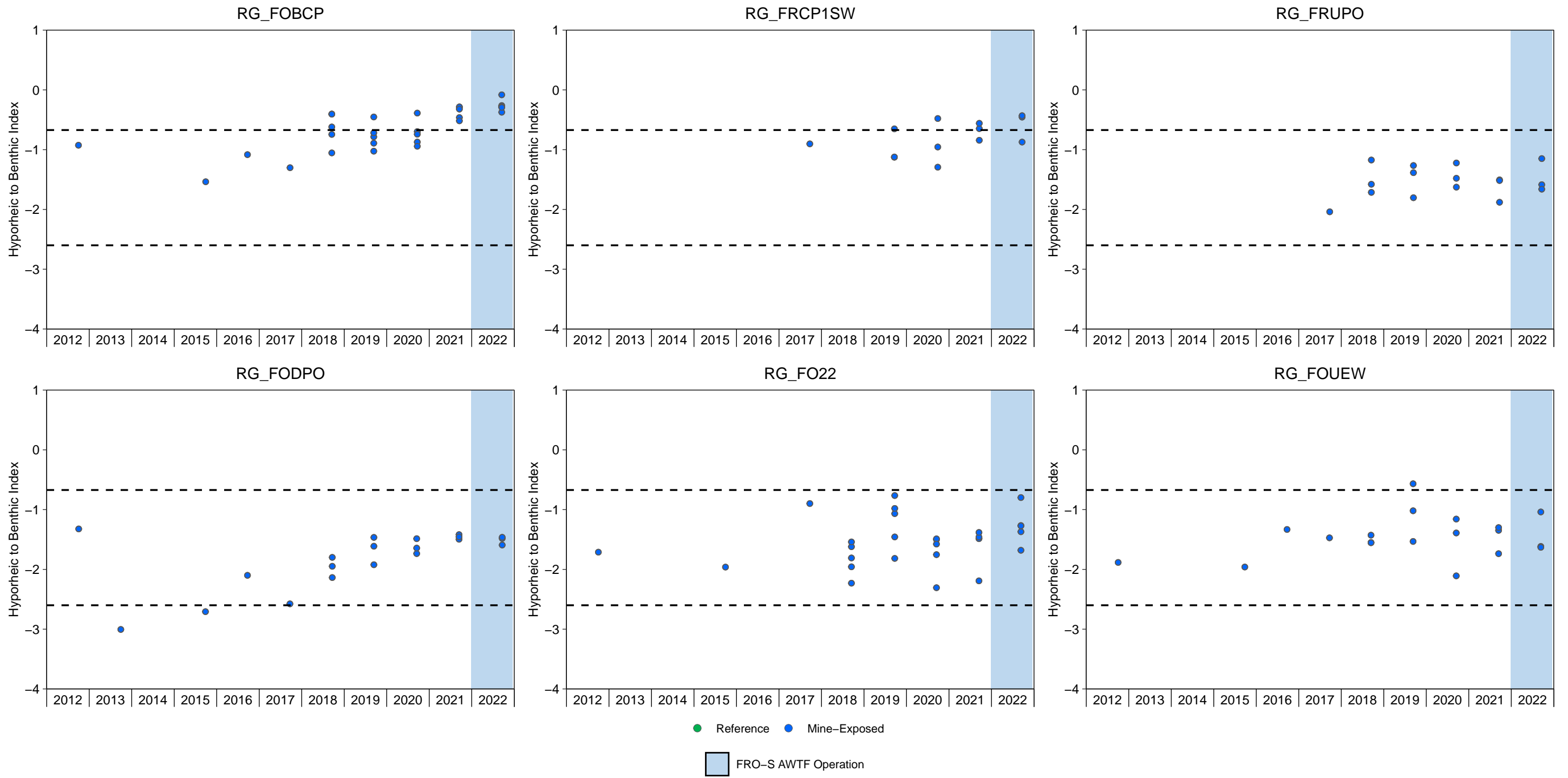


Figure G.30: Benthic Invertebrate Hyporheic to Benthic Index in September, FRO LAEMP, 2012 to 2022

Notes: Regional normal ranges using percentiles of reference areas from 2012 to 2019 are shown as dashed horizontal lines.

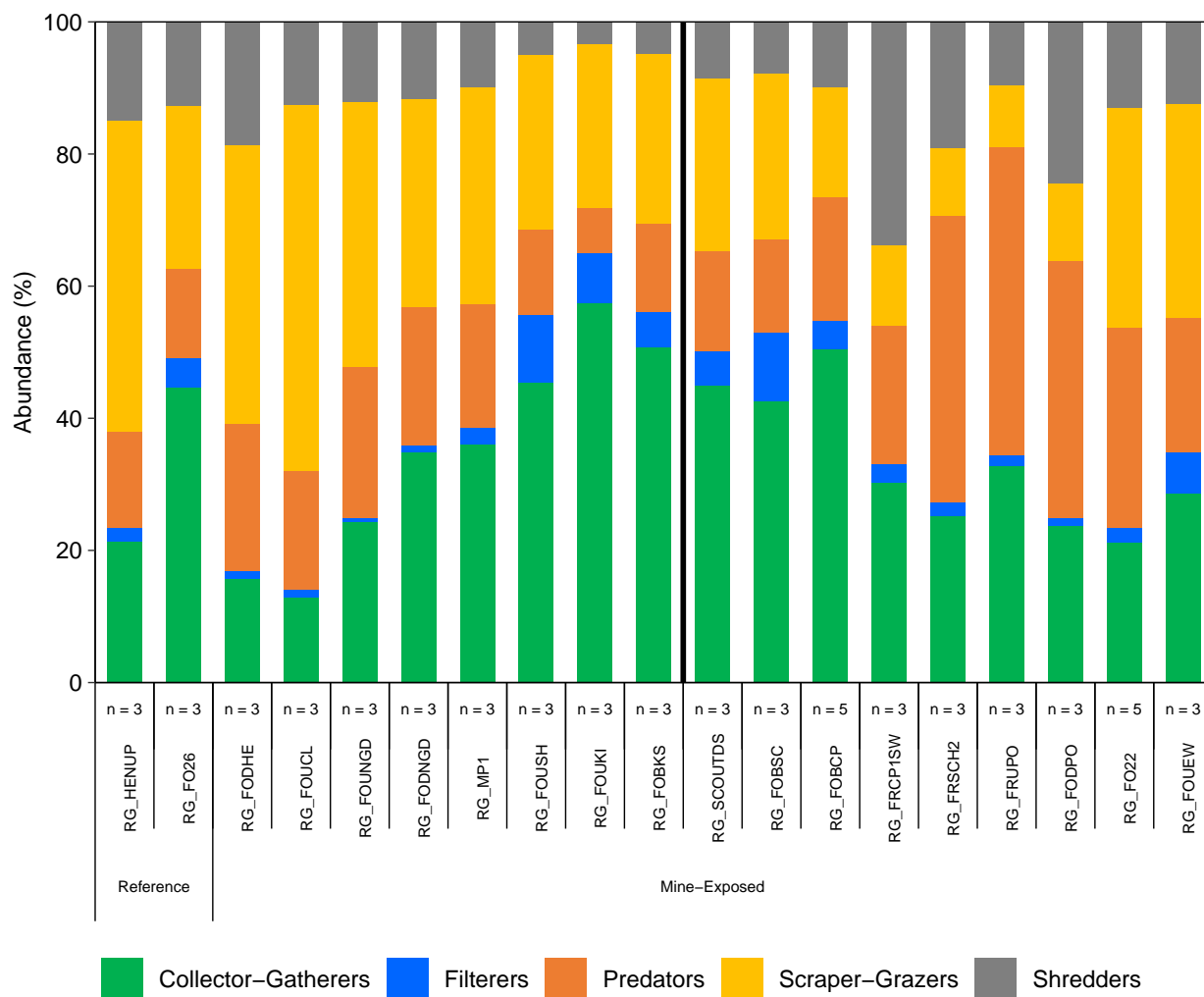


Figure G.31: Benthic Invertebrate Community Feeding Groups Percent Composition, FRO LAEMP, September 2022

Notes: Vertical black line denotes upstream and downstream of the FRO-S AWTF outfall location. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

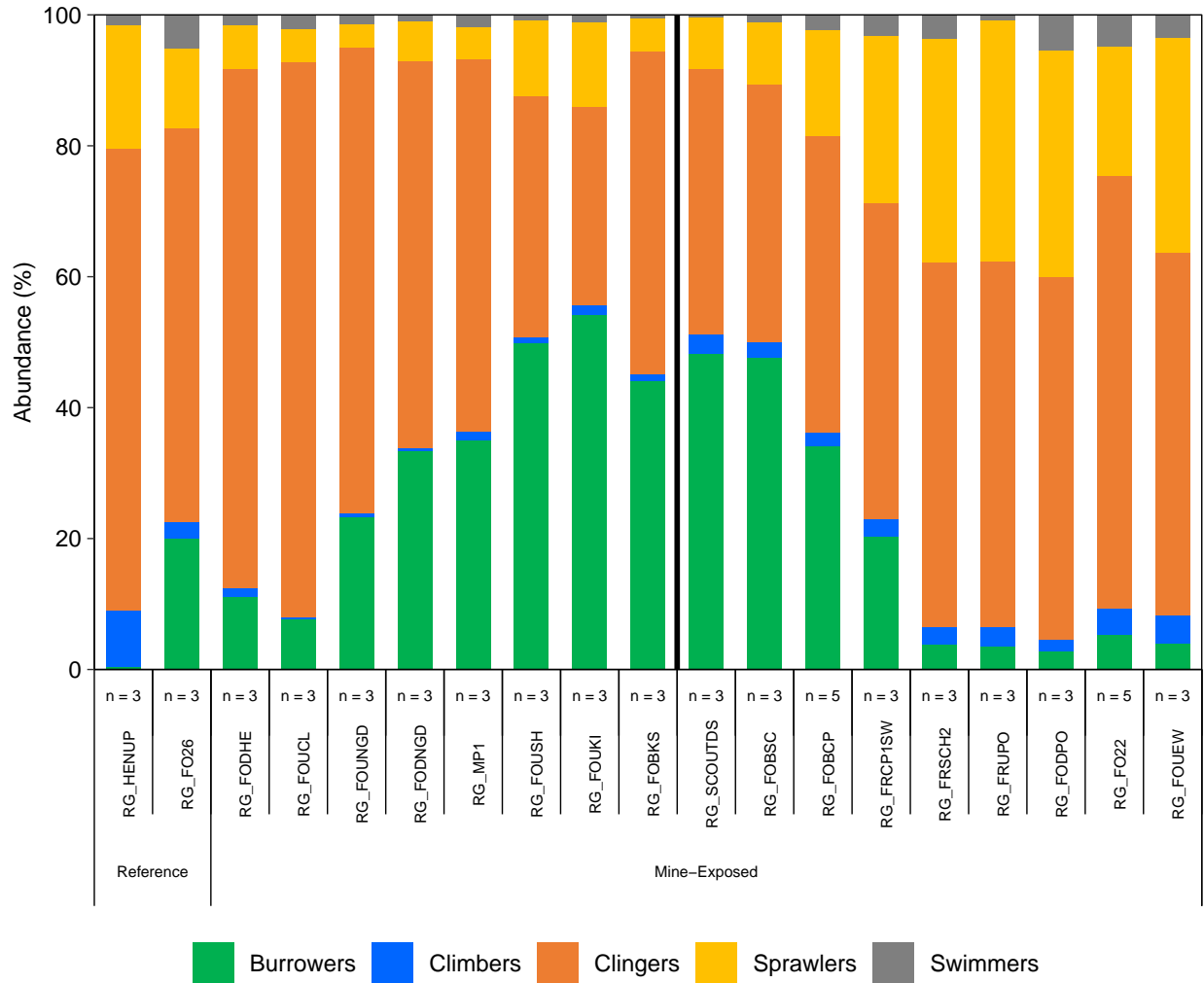


Figure G.32: Benthic Invertebrate Community Habitat Groups Percent Composition, FRO LAEMP, September 2022

Notes: Vertical black line denotes upstream and downstream of the FRO-S AWTF outfall location. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

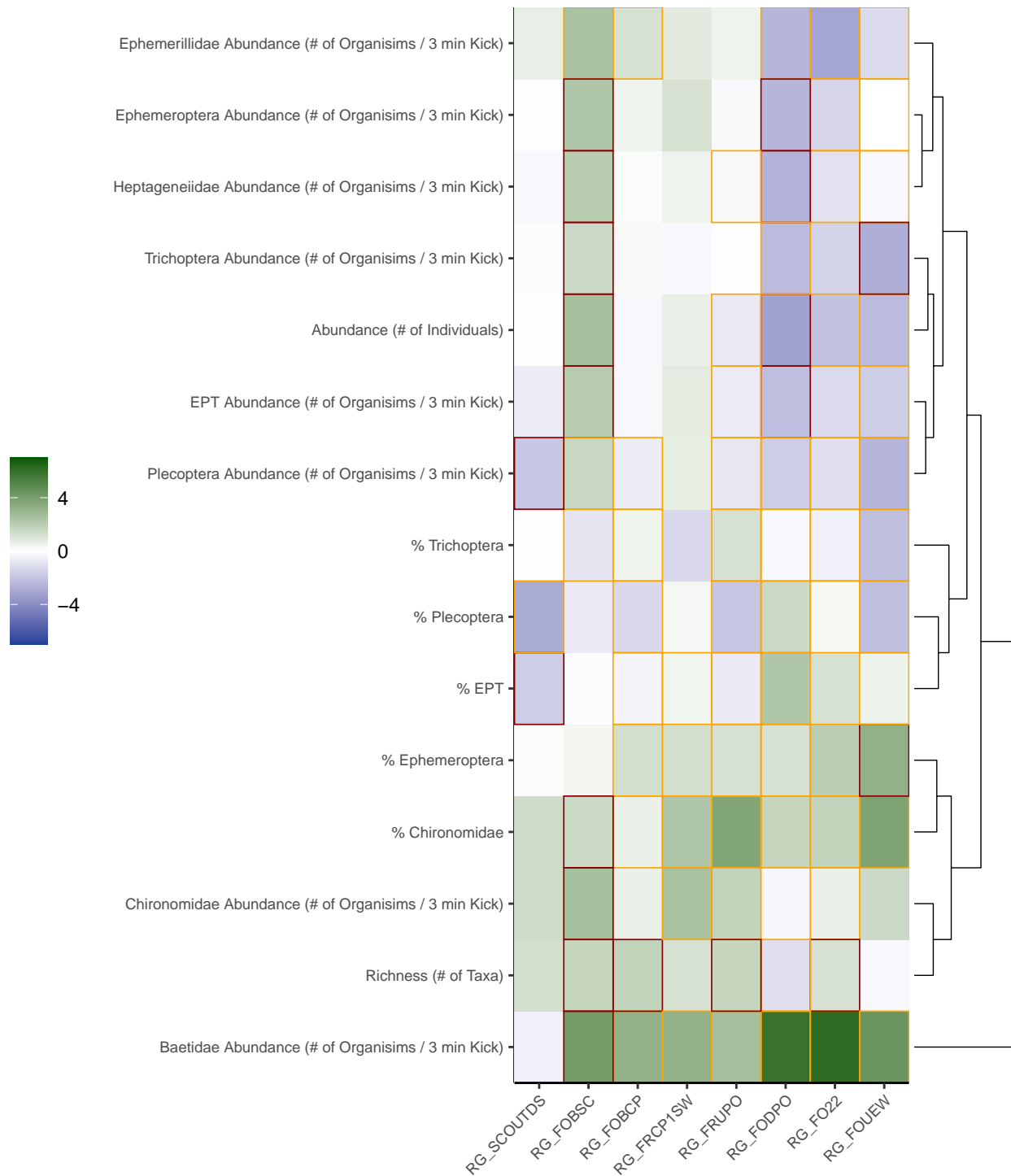


Figure G.33: Heatmap of Magnitude of Differences (MOD) from Statistical Analysis of Benthic Invertebrate Community Upstream and Downstream of Treatment, 2012 to 2022.

Notes: Orange boxes show significant BA (Year) x Treatment effects and red boxes show significant BA x Treatment effects. BA = Before-After term. Magnitude of difference was calculated as described in the table with the statistical analysis presented here.

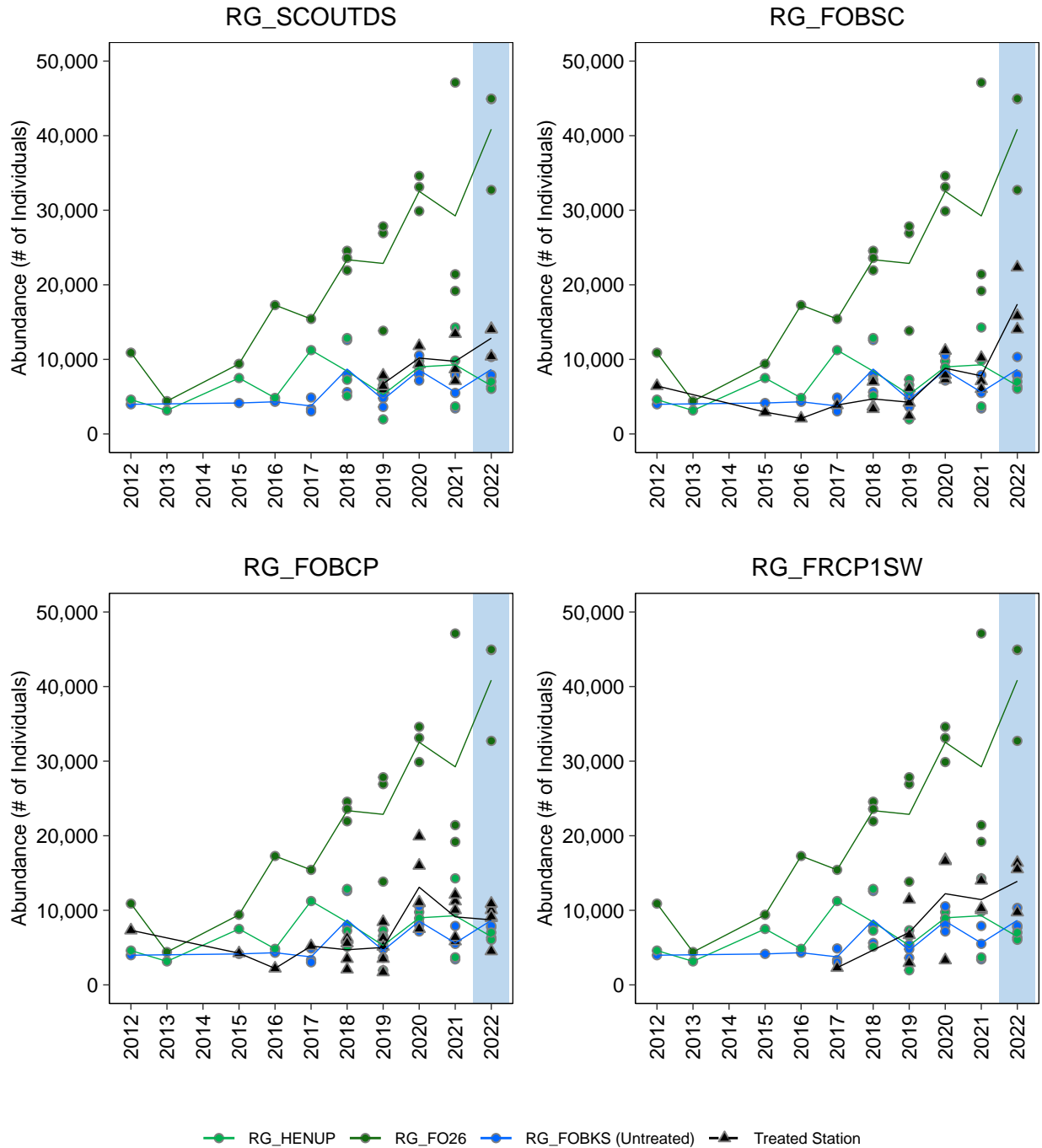


Figure G.34: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

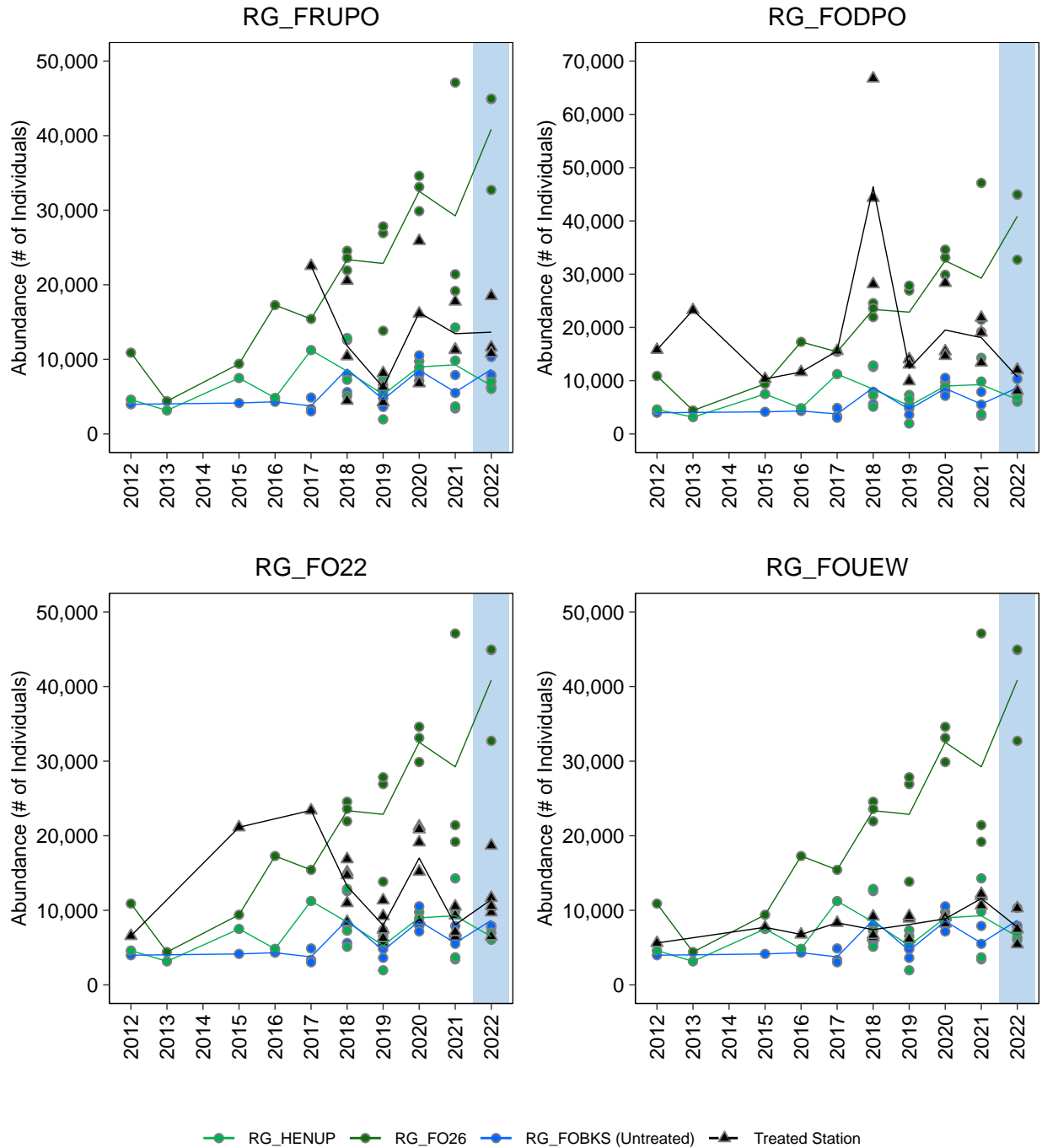


Figure G.34: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

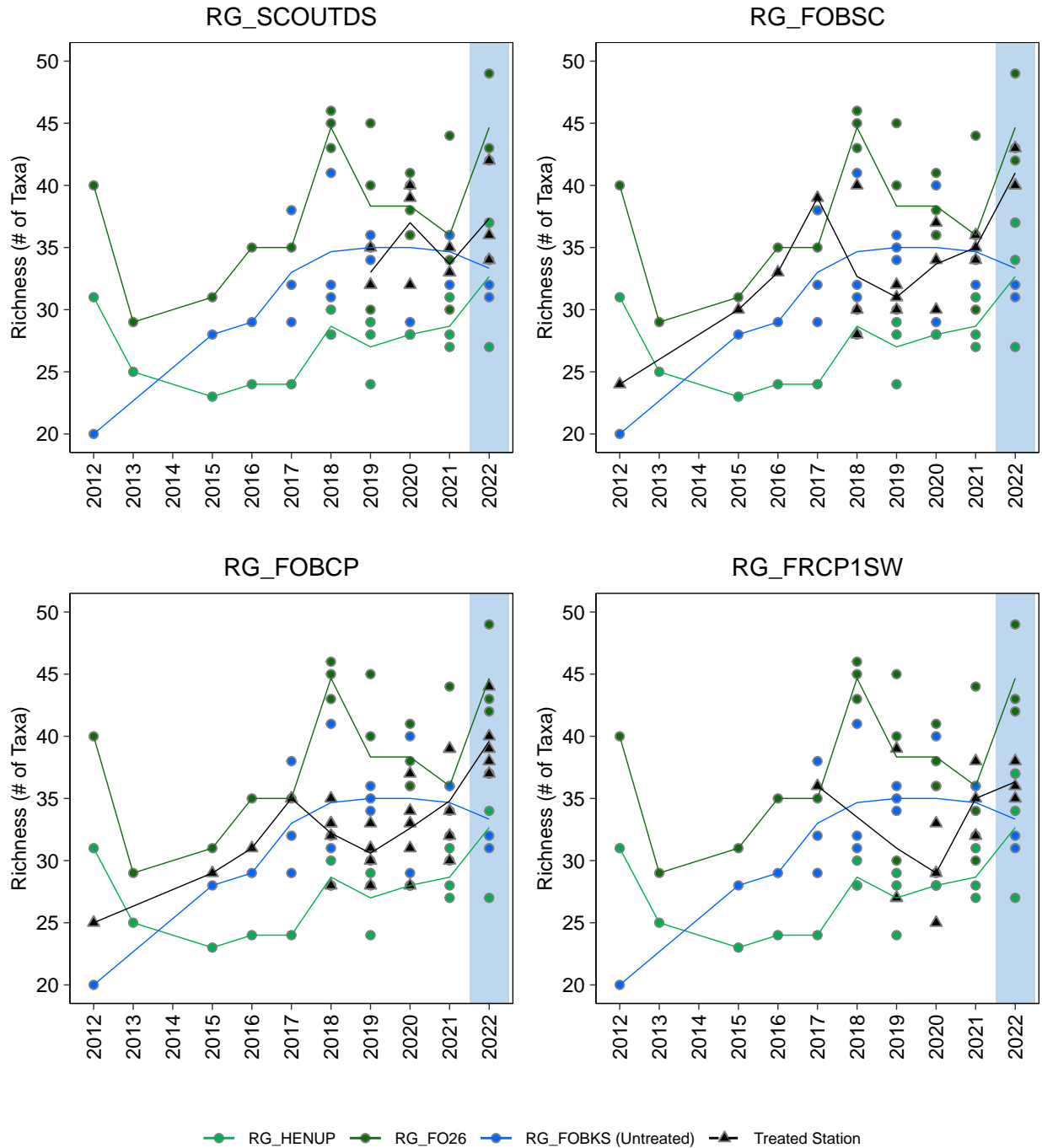


Figure G.35: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

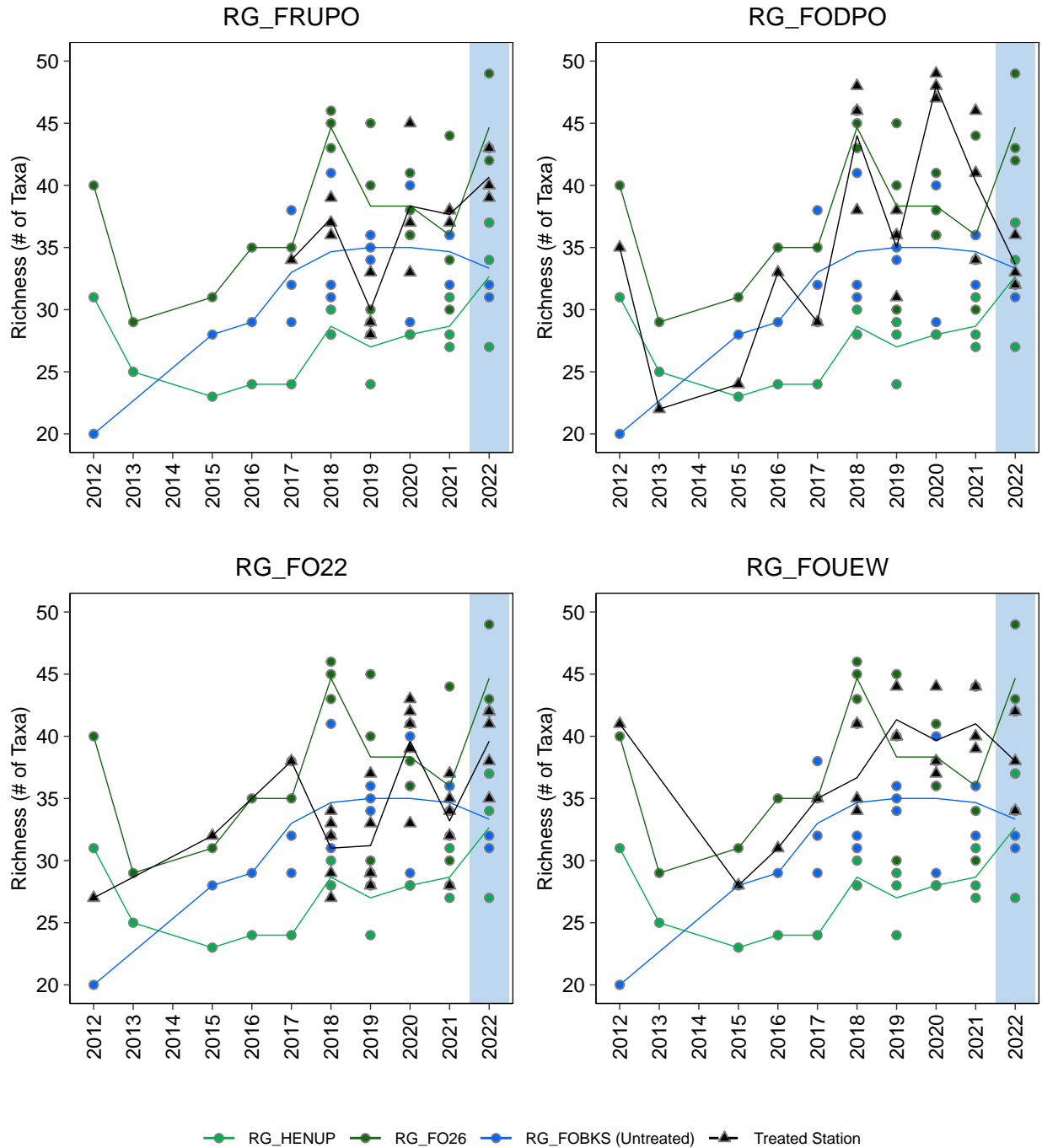


Figure G.35: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

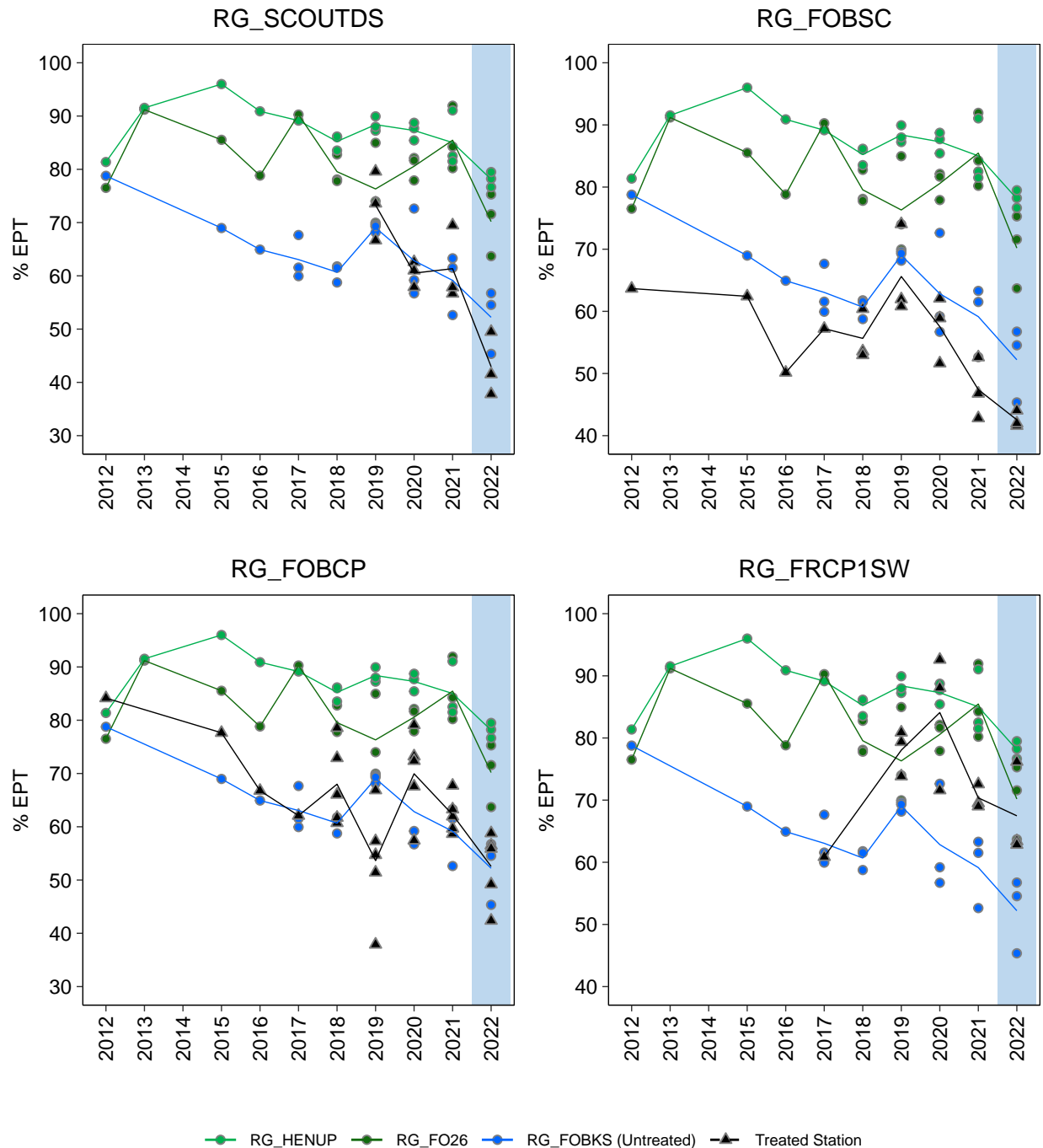


Figure G.36: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

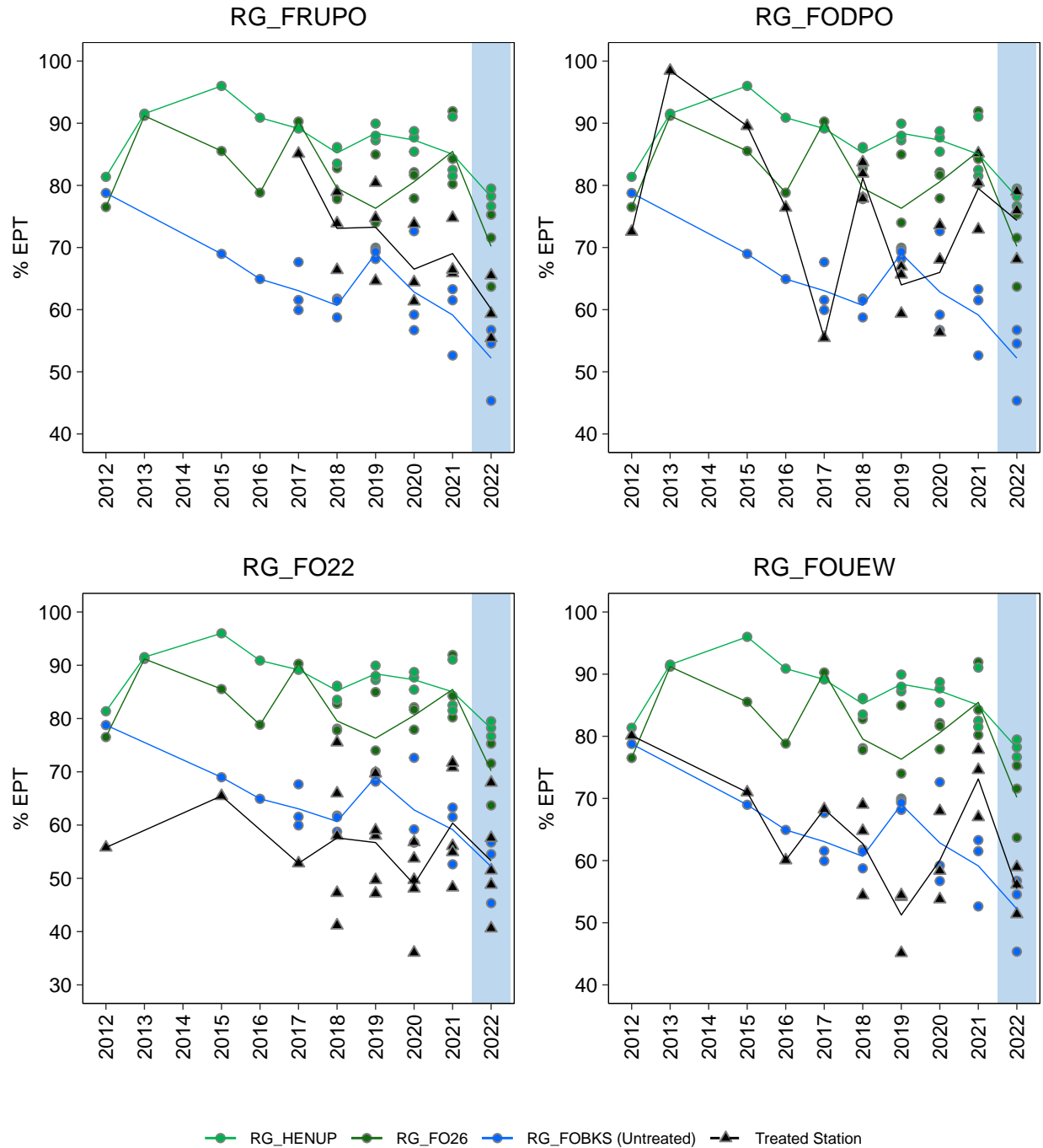


Figure G.36: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

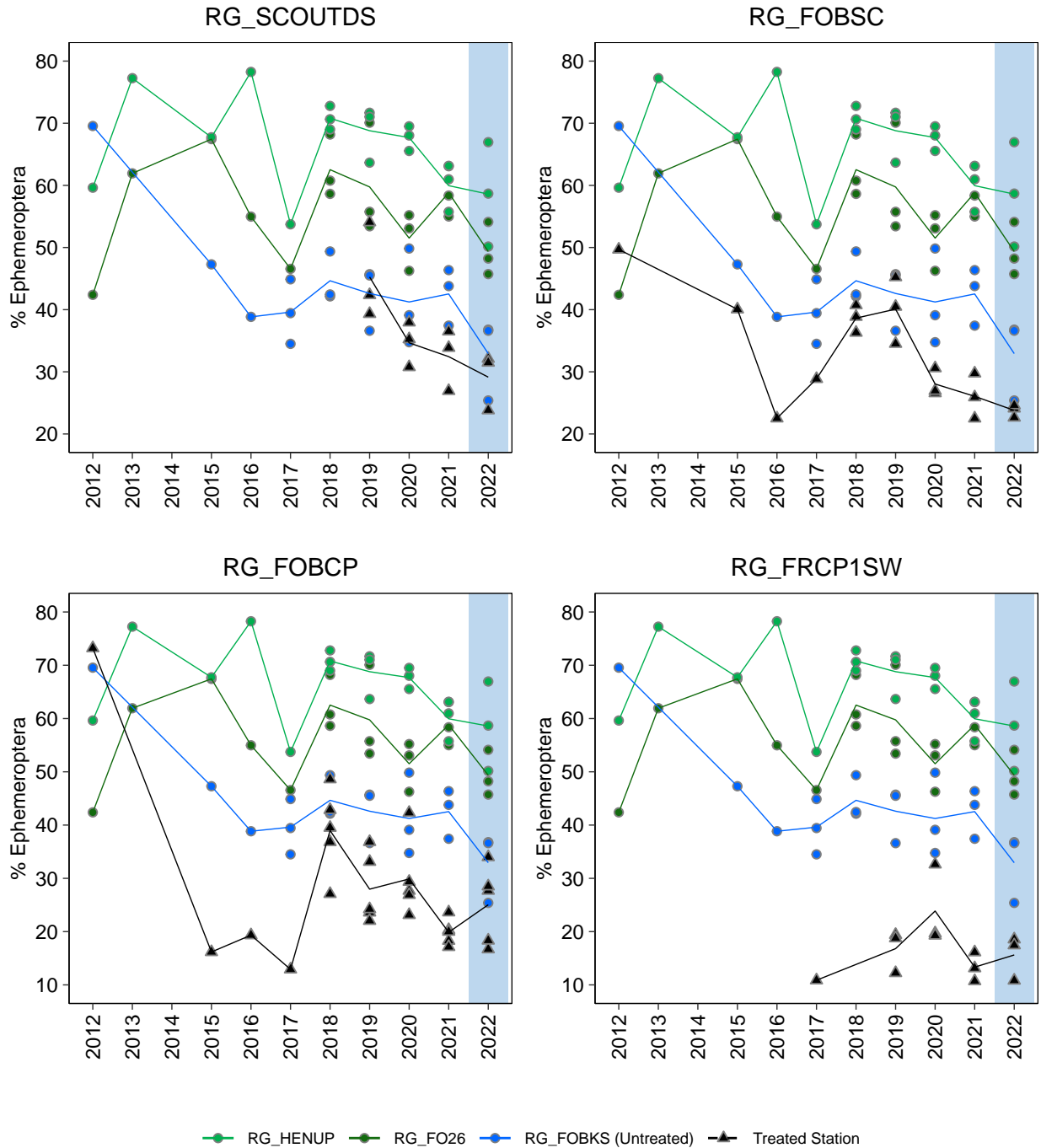


Figure G.37: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

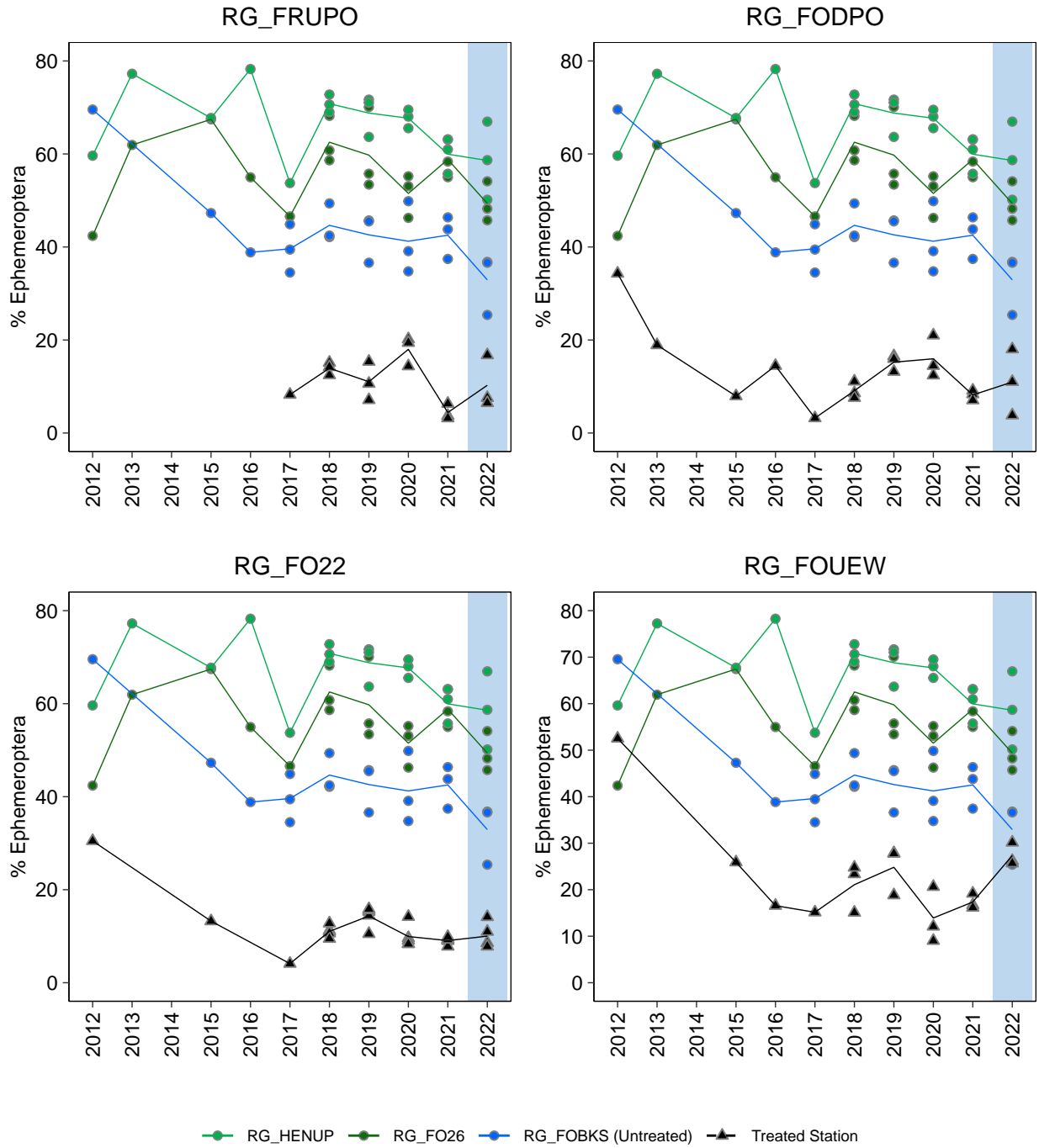


Figure G.37: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

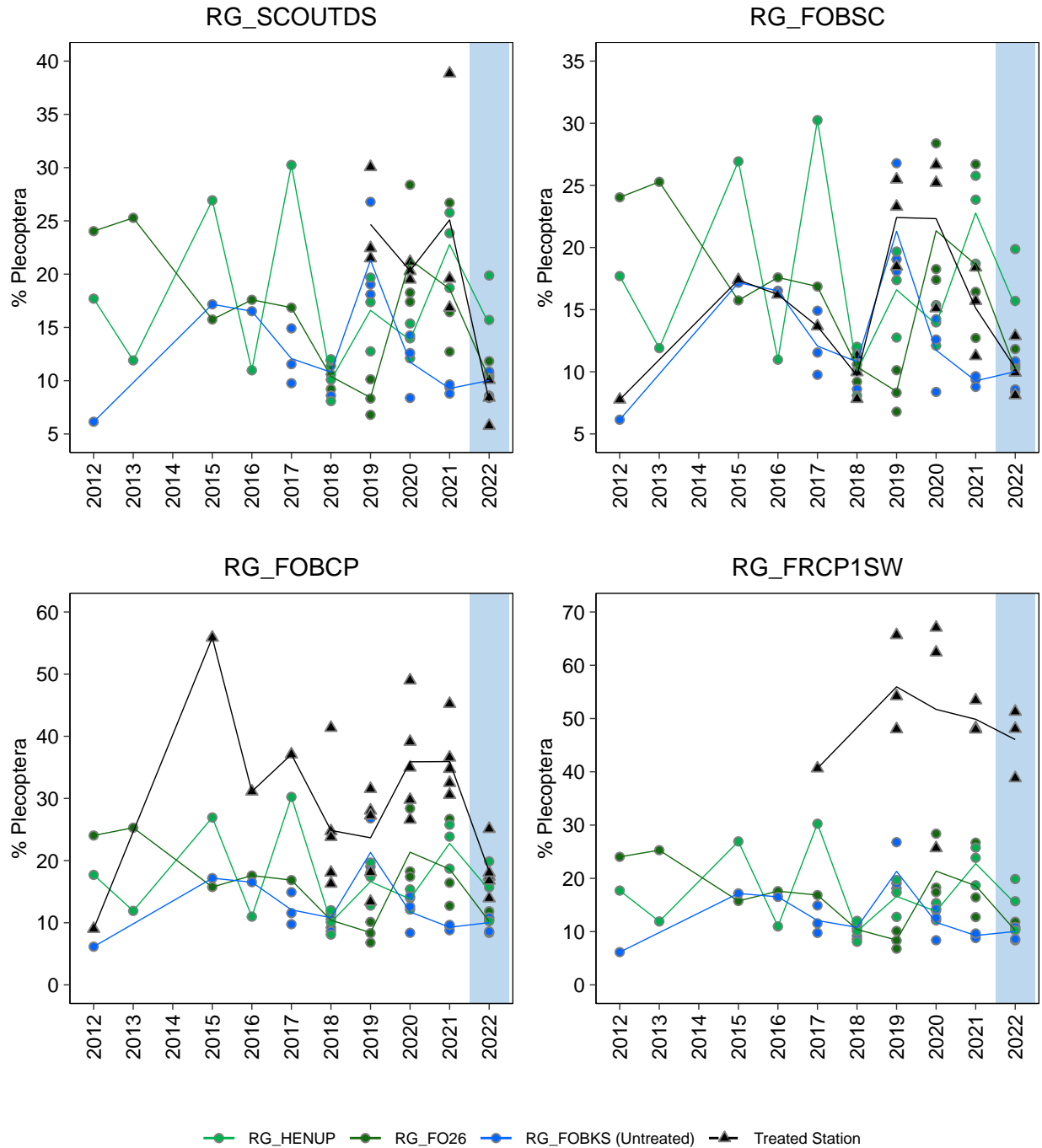


Figure G.38: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

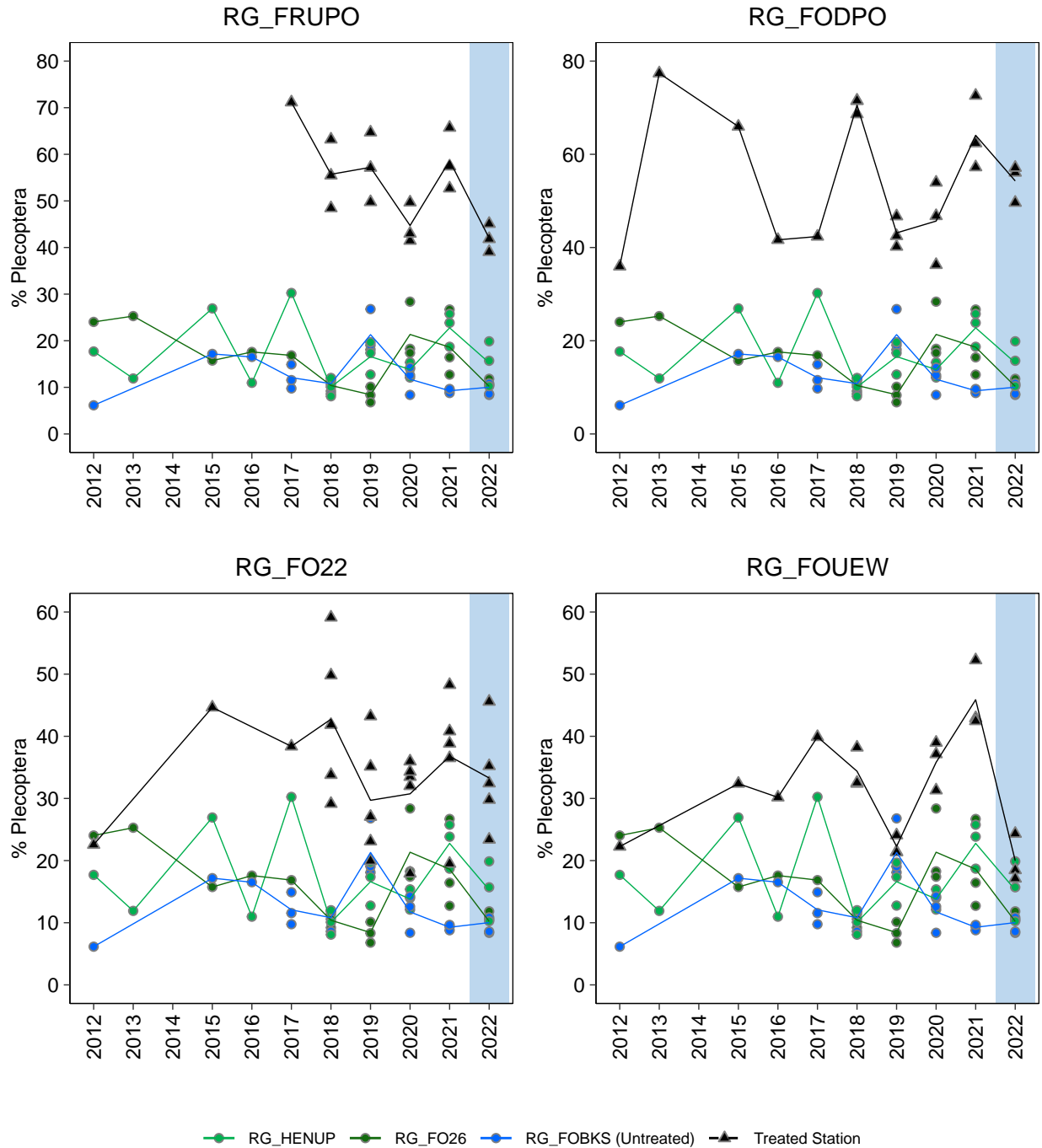


Figure G.38: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

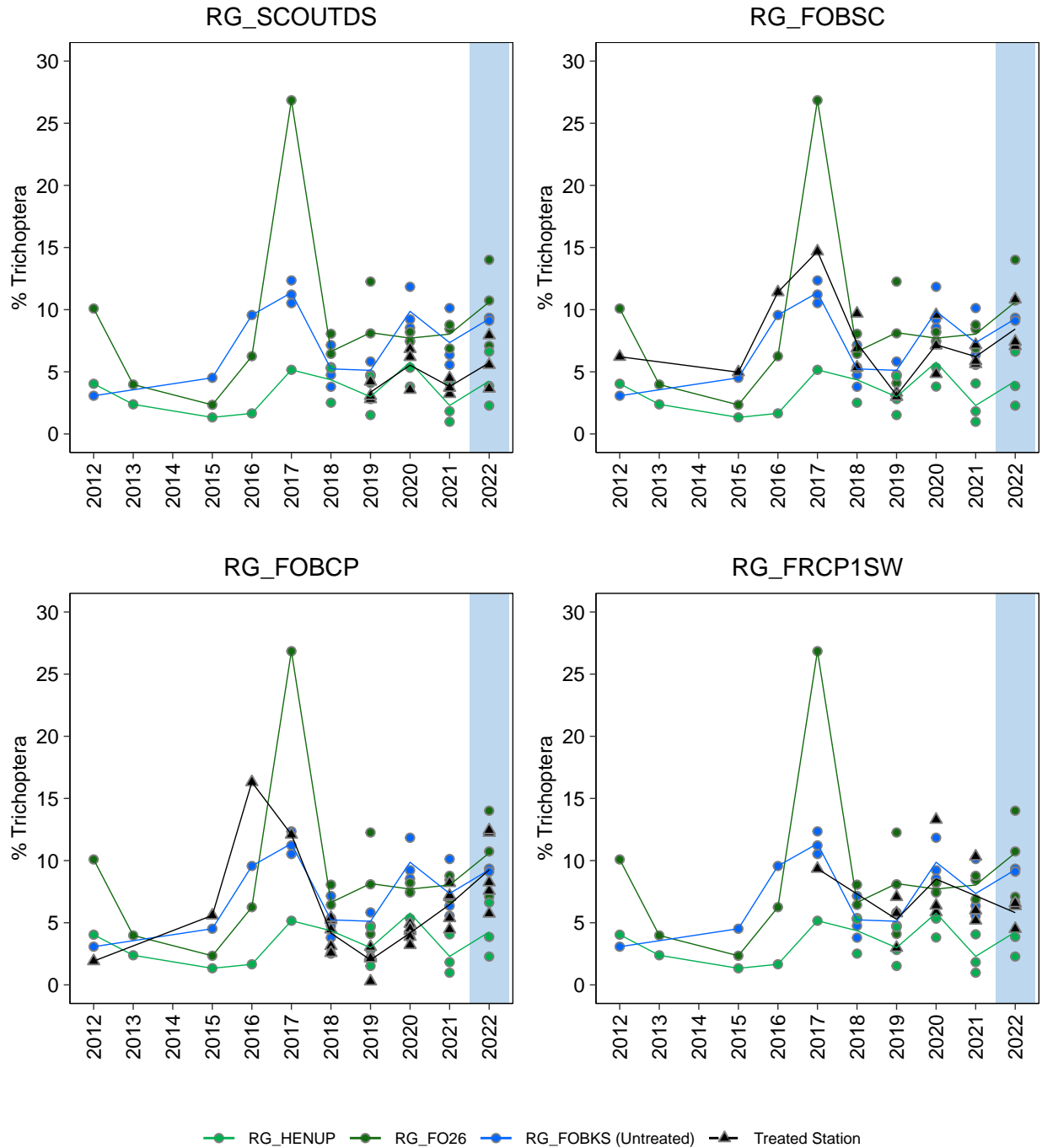


Figure G.39: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

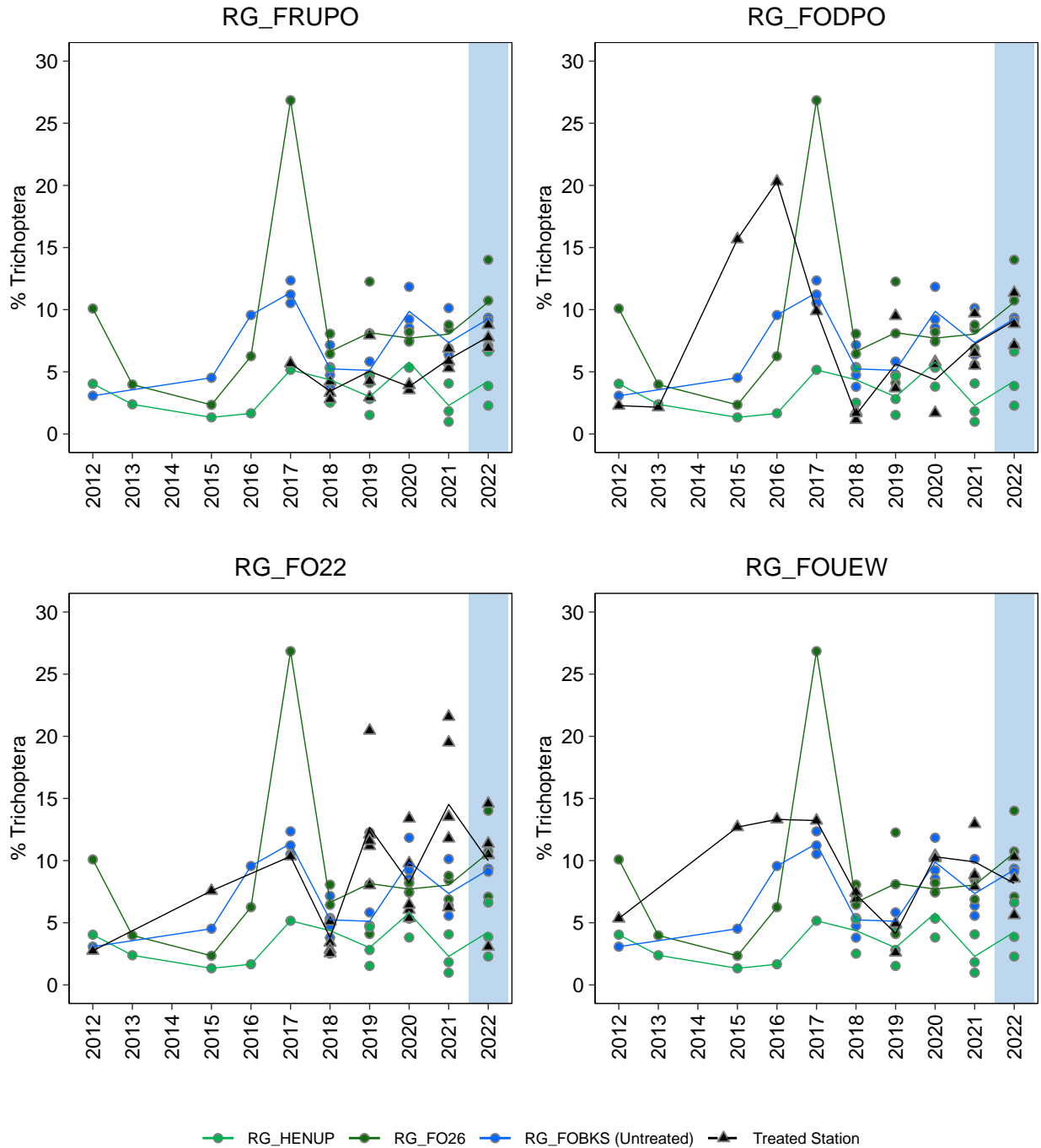


Figure G.39: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

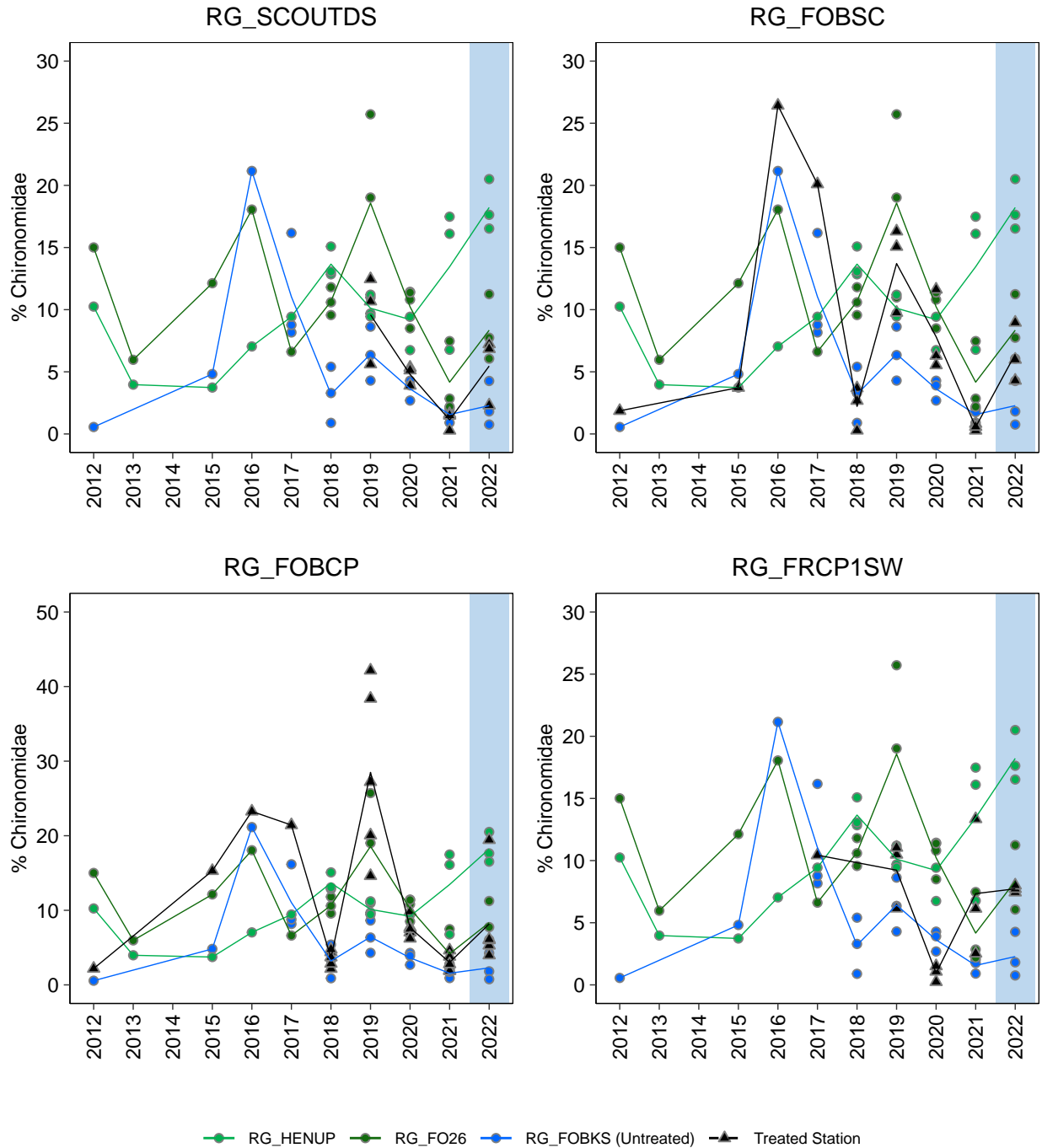


Figure G.40: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

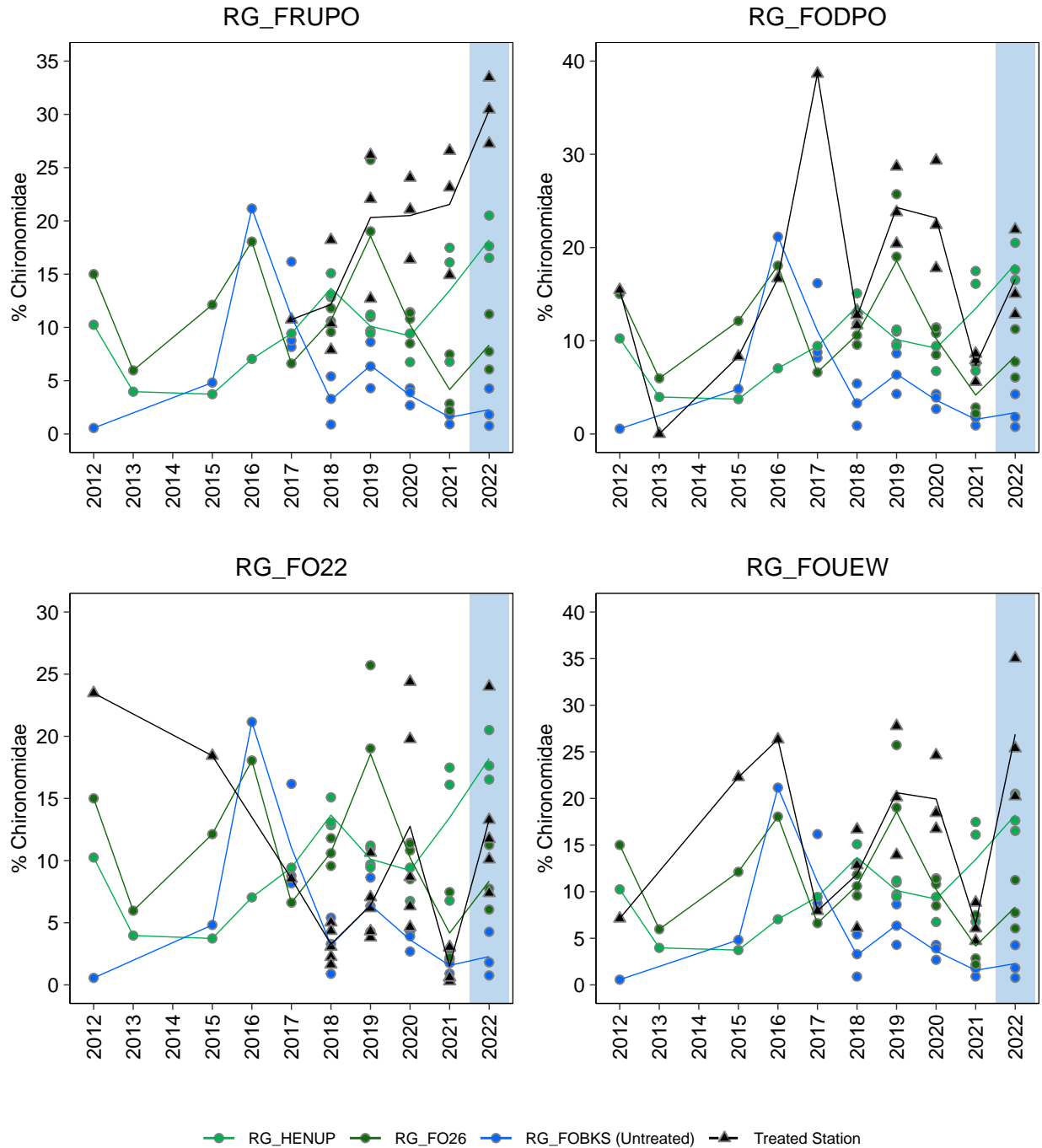


Figure G.40: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

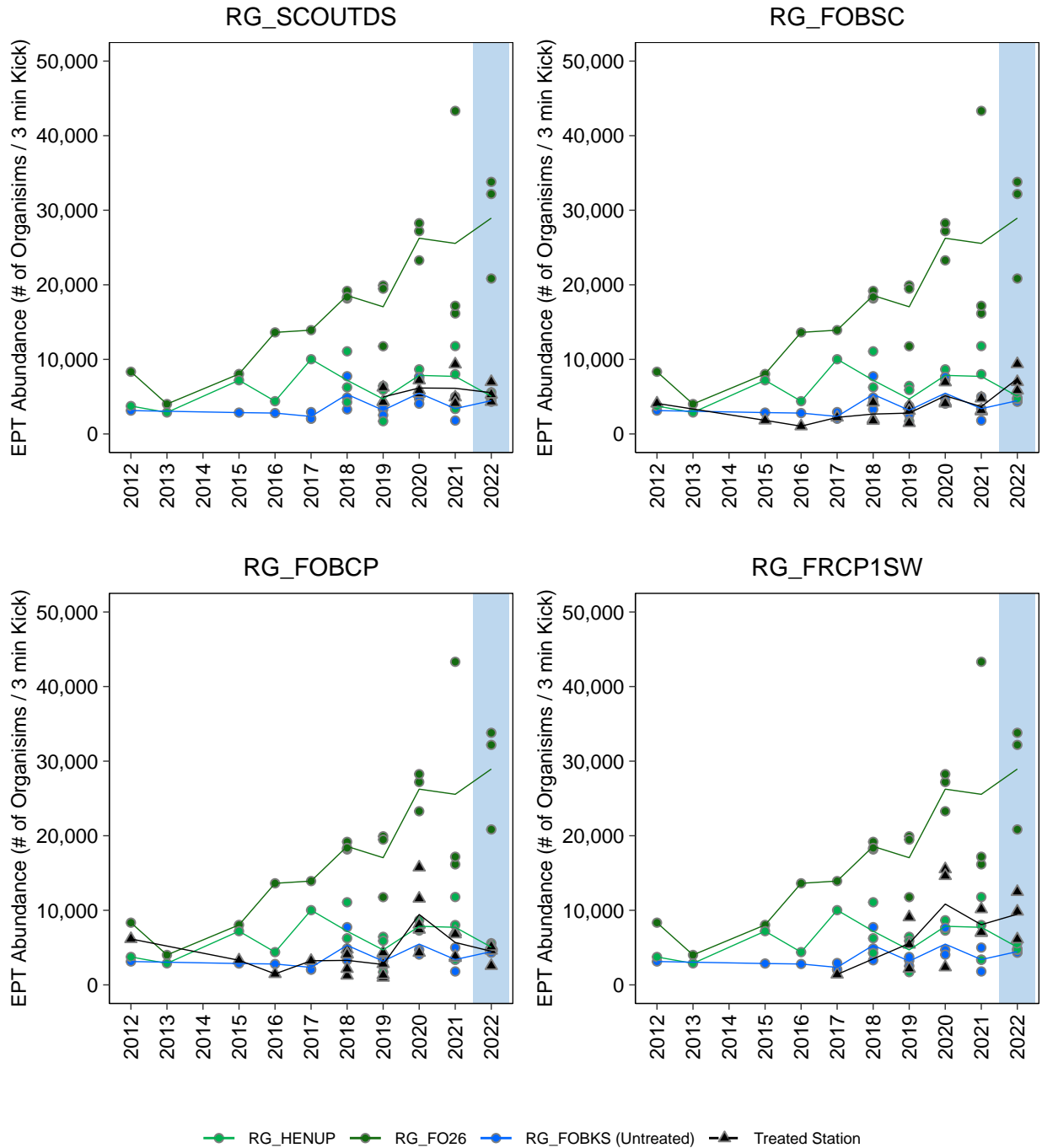


Figure G.41: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

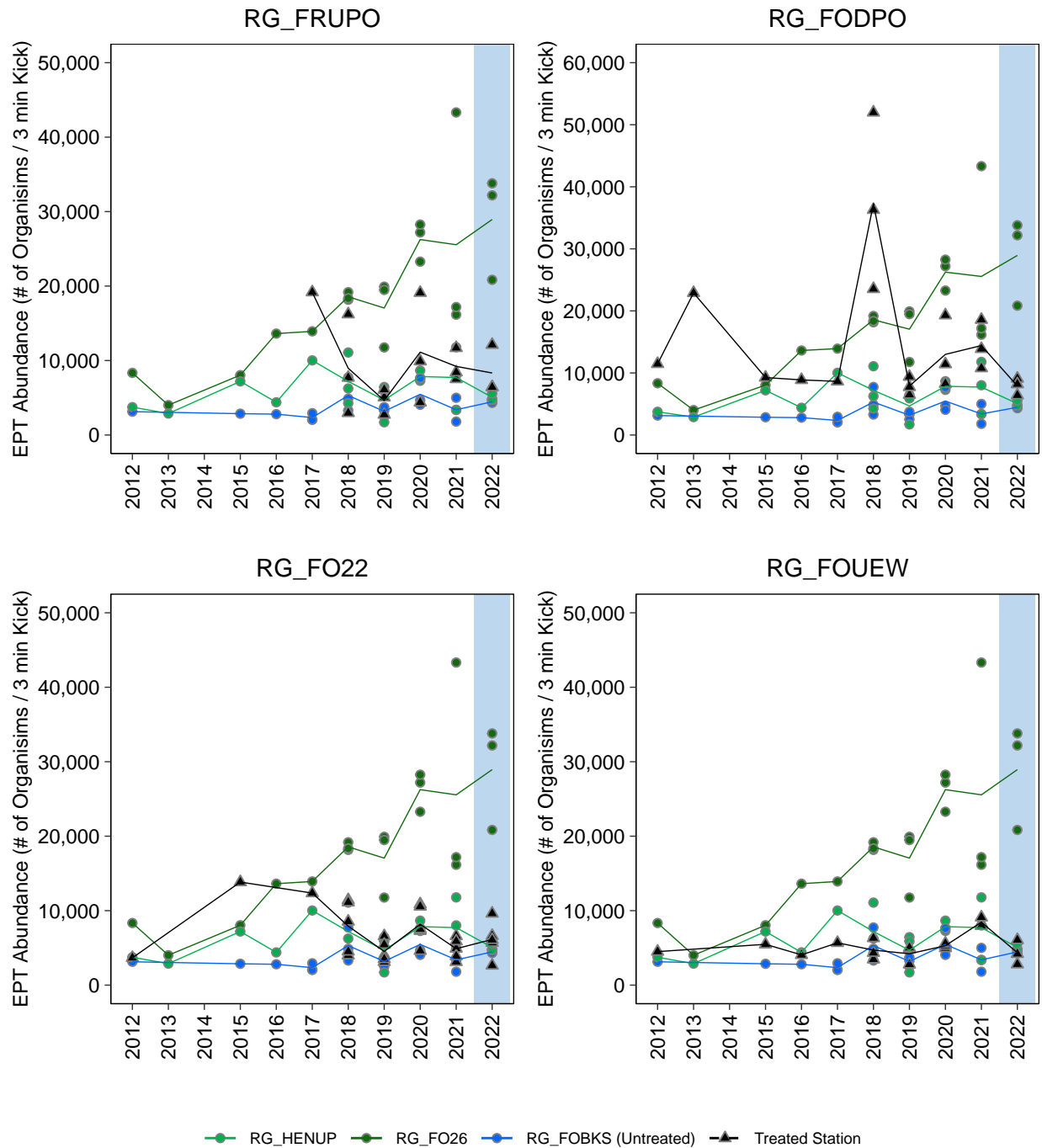


Figure G.41: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

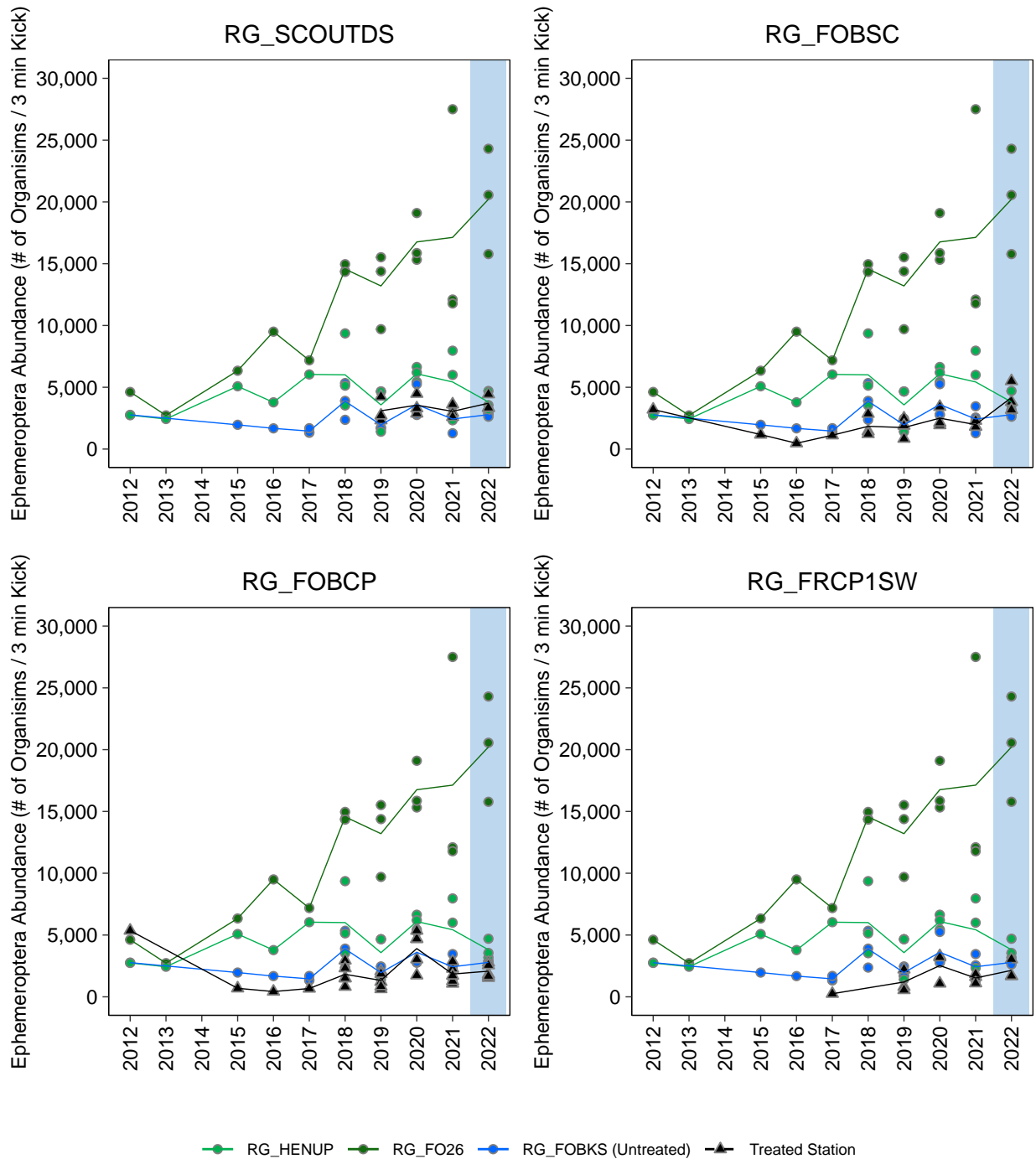


Figure G.42: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

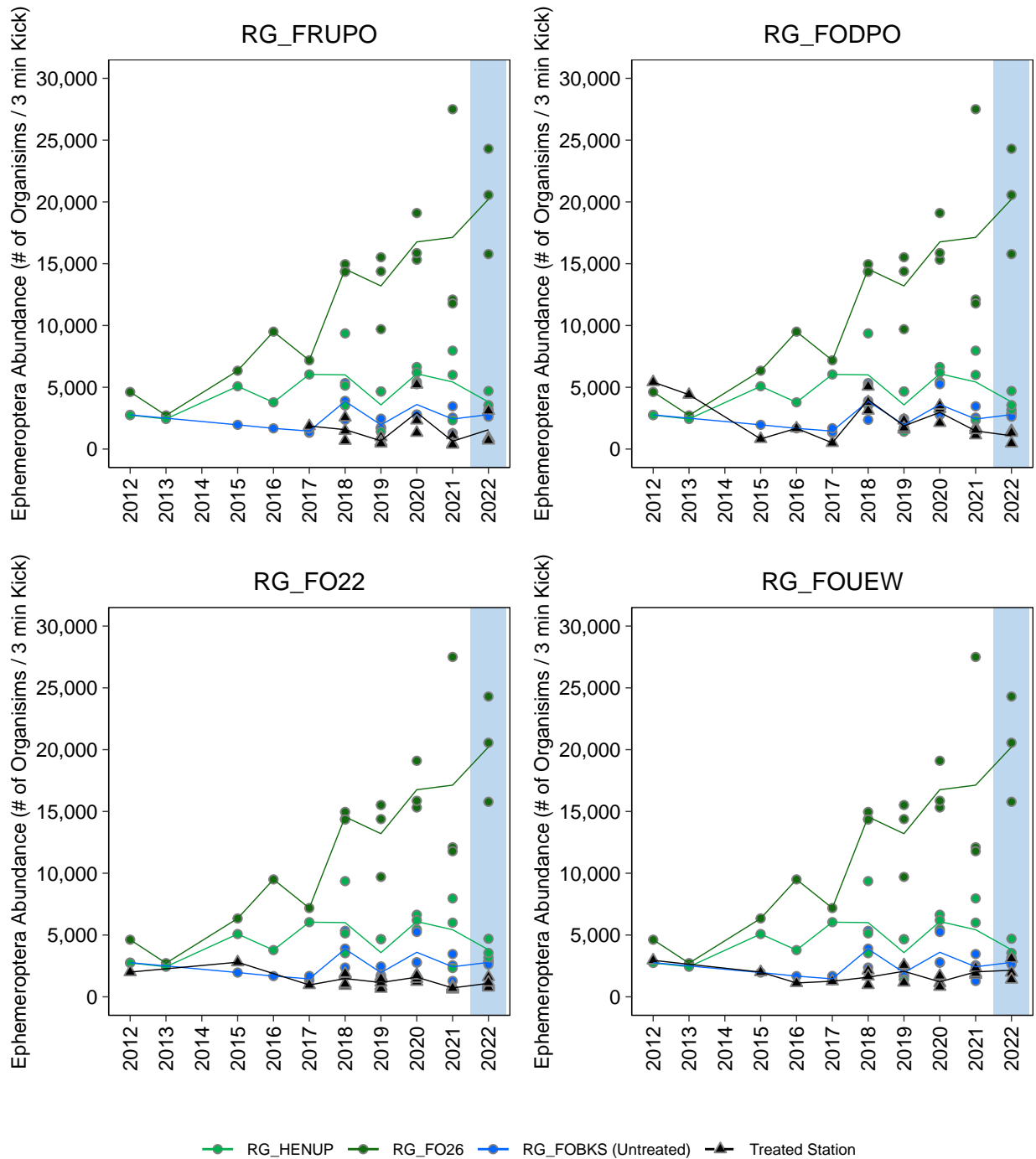


Figure G.42: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

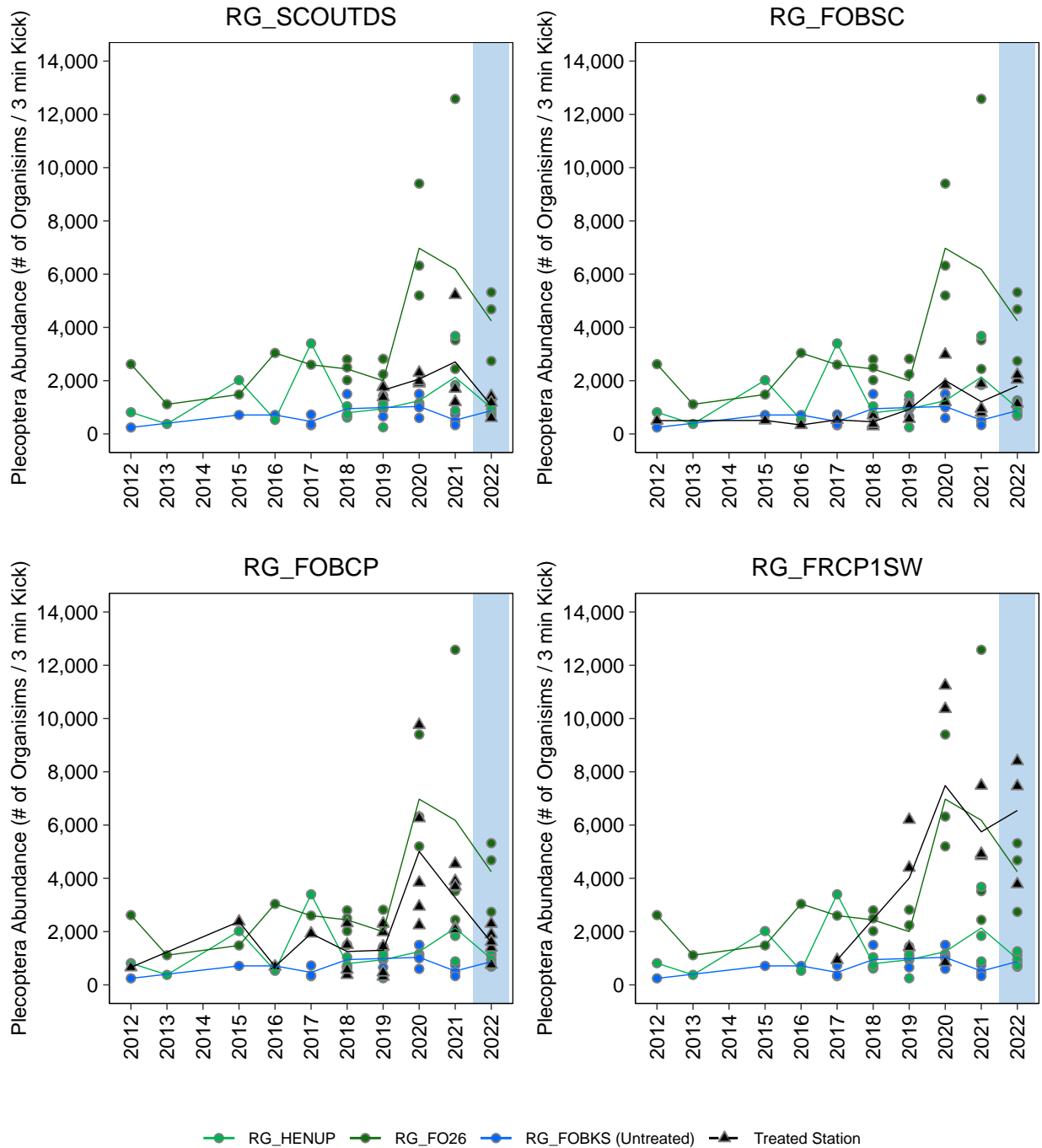


Figure G.43: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

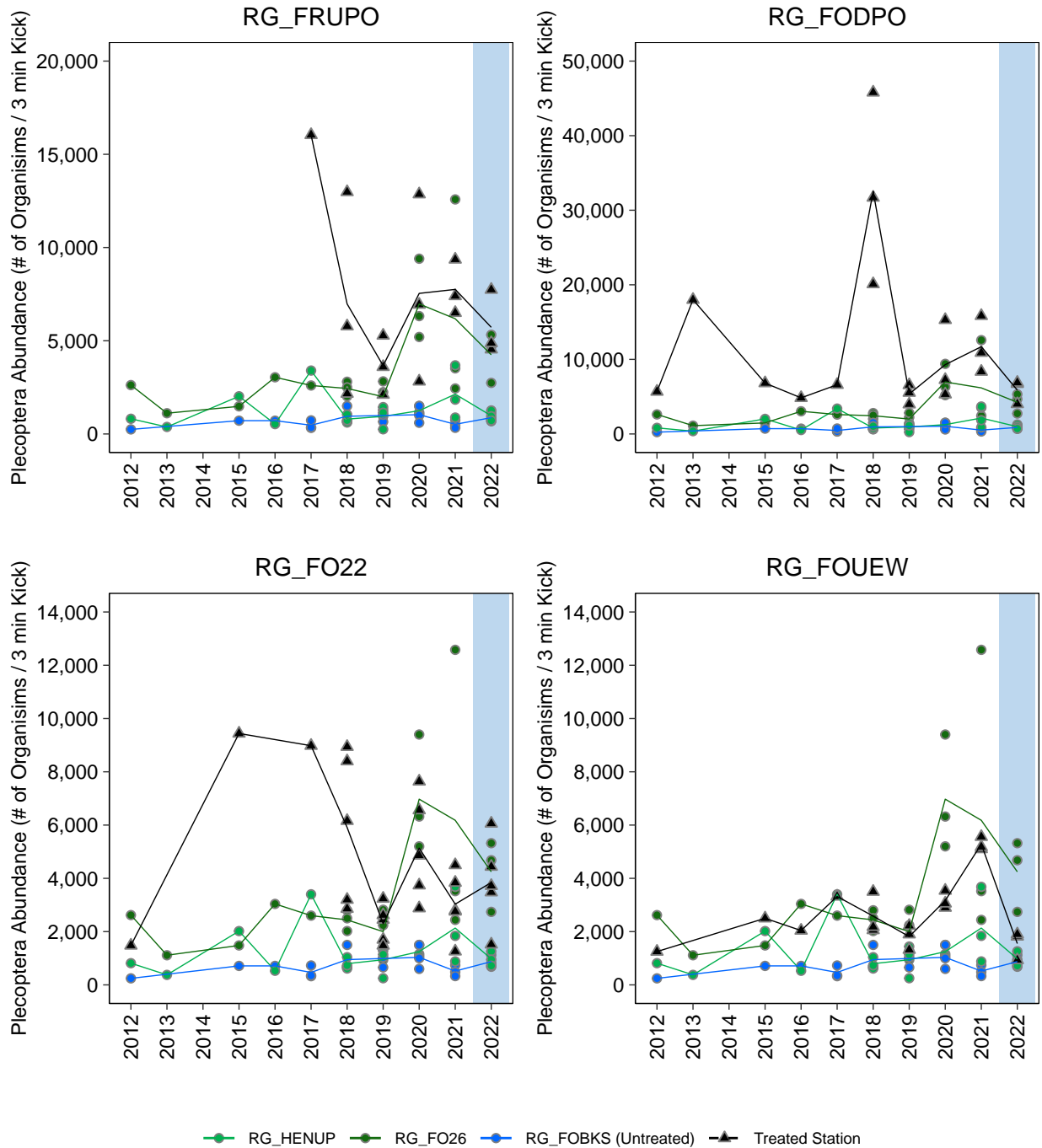


Figure G.43: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

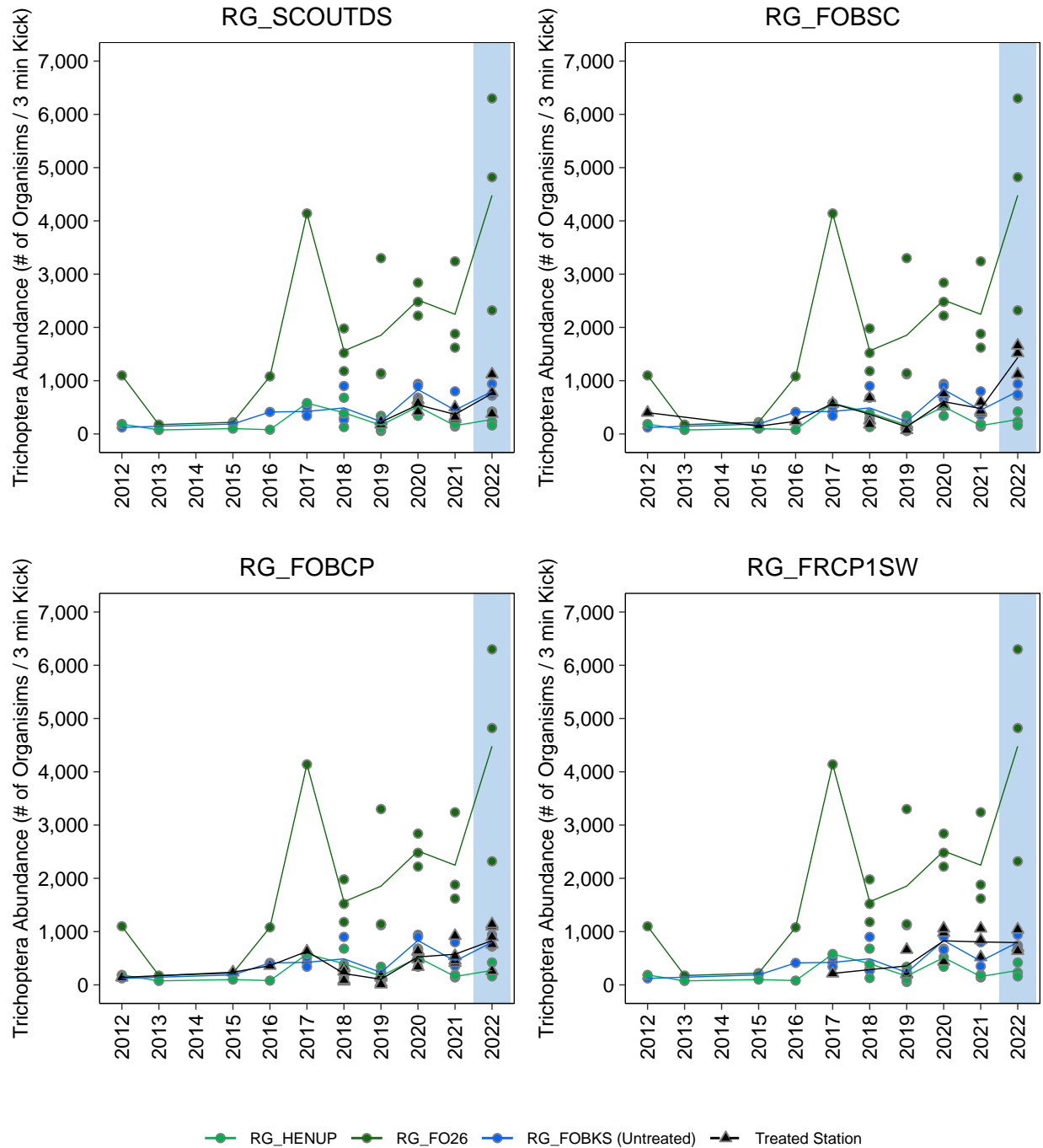


Figure G.44: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

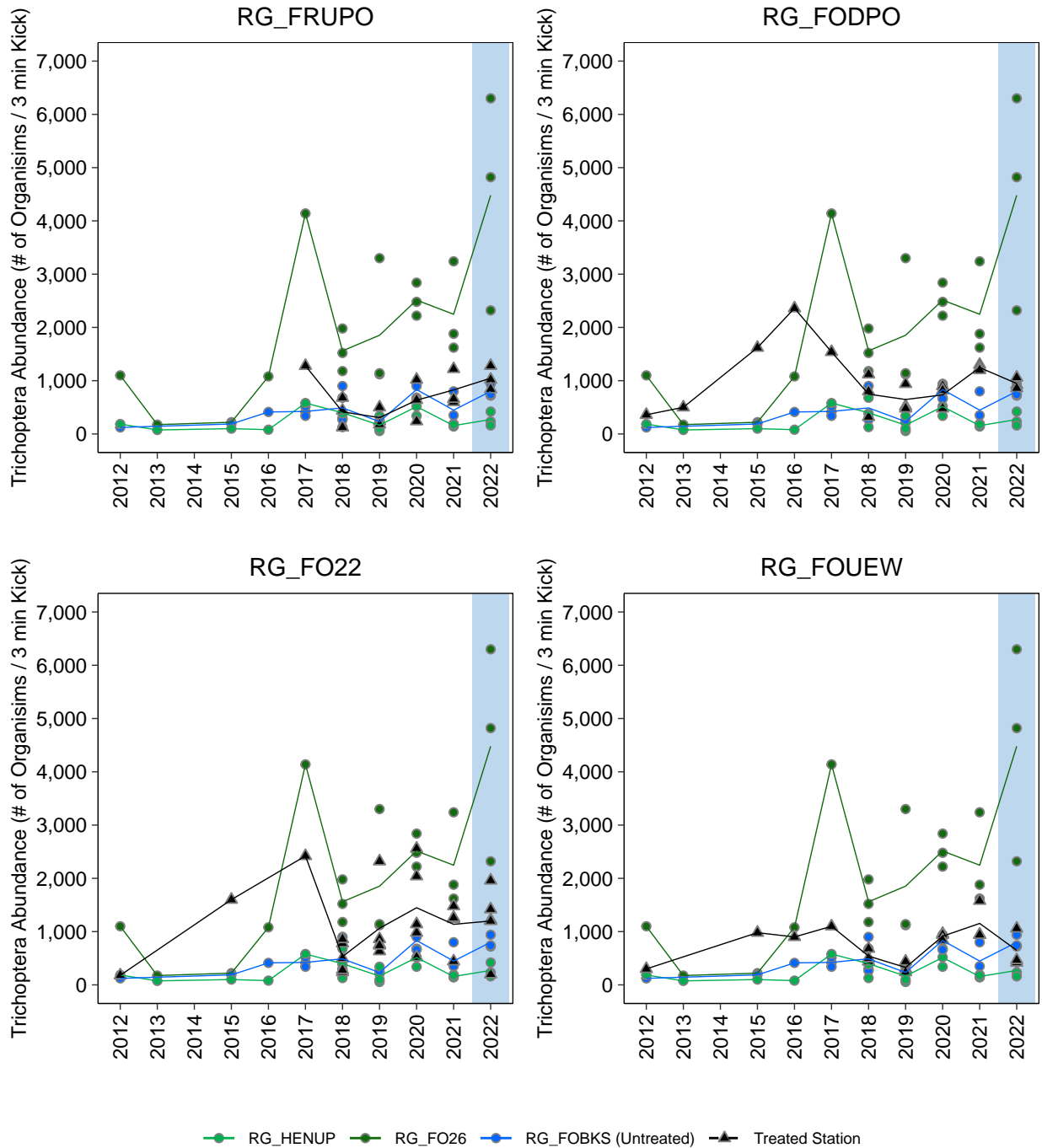


Figure G.44: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

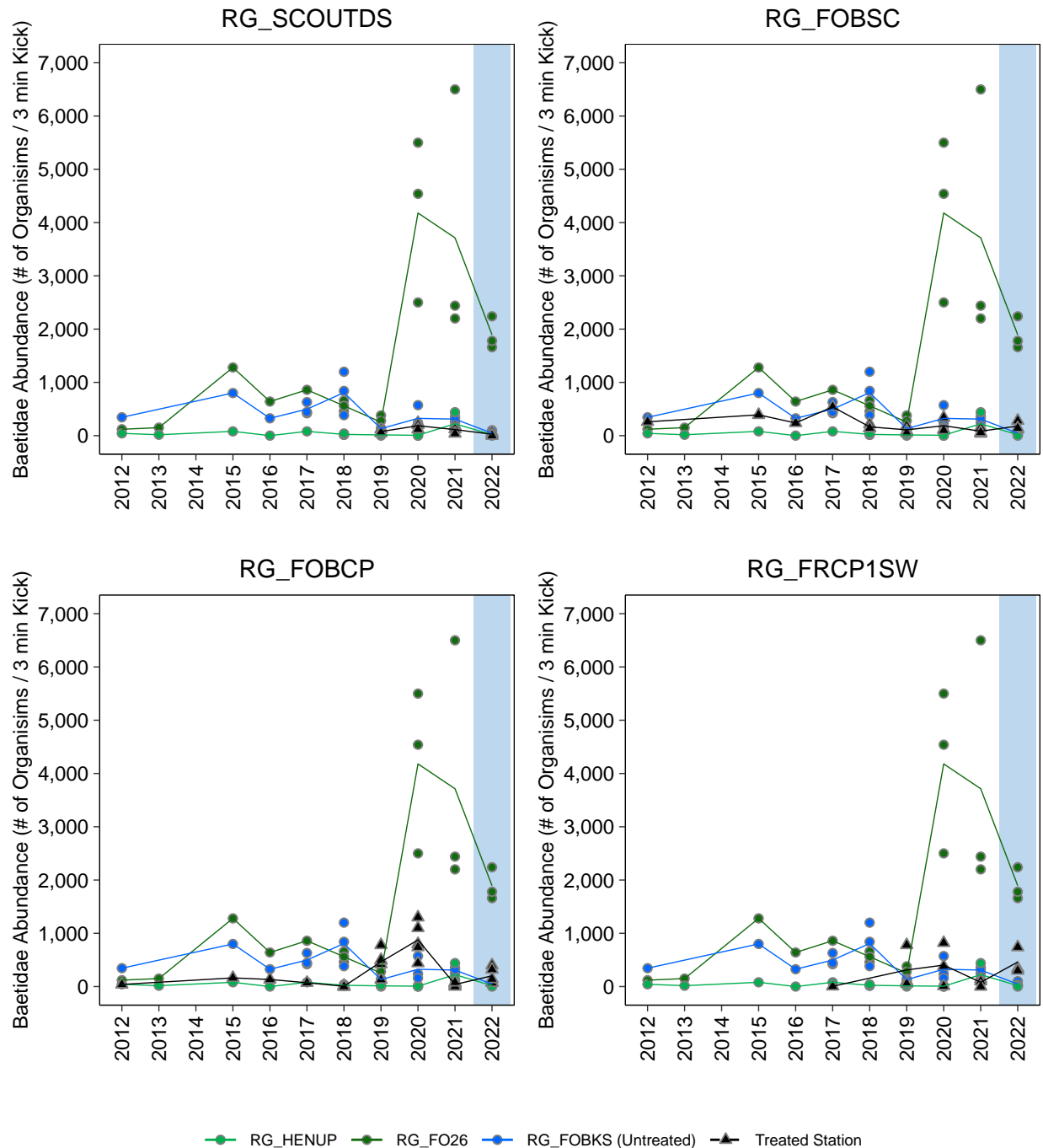


Figure G.45: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

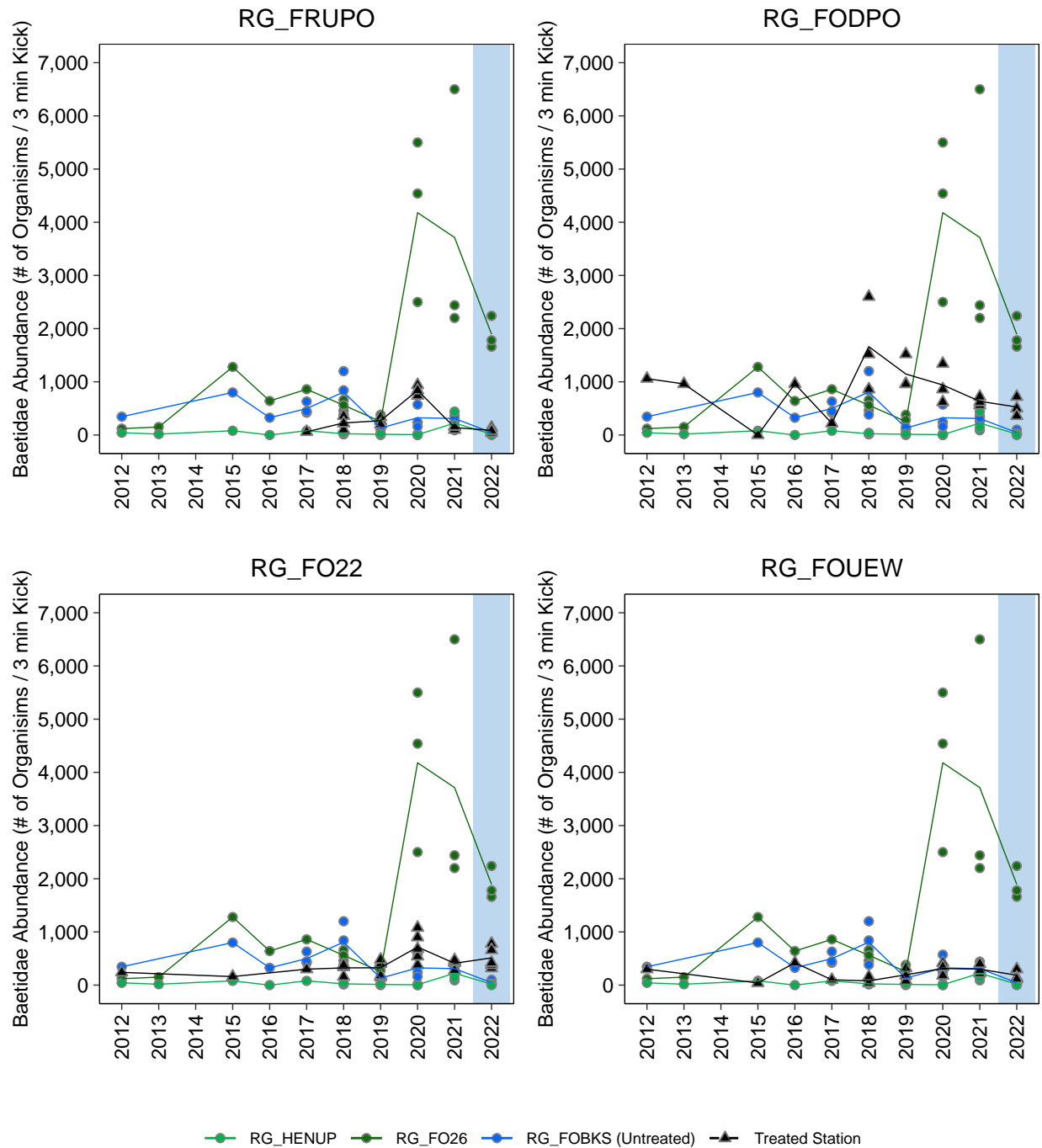


Figure G.45: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

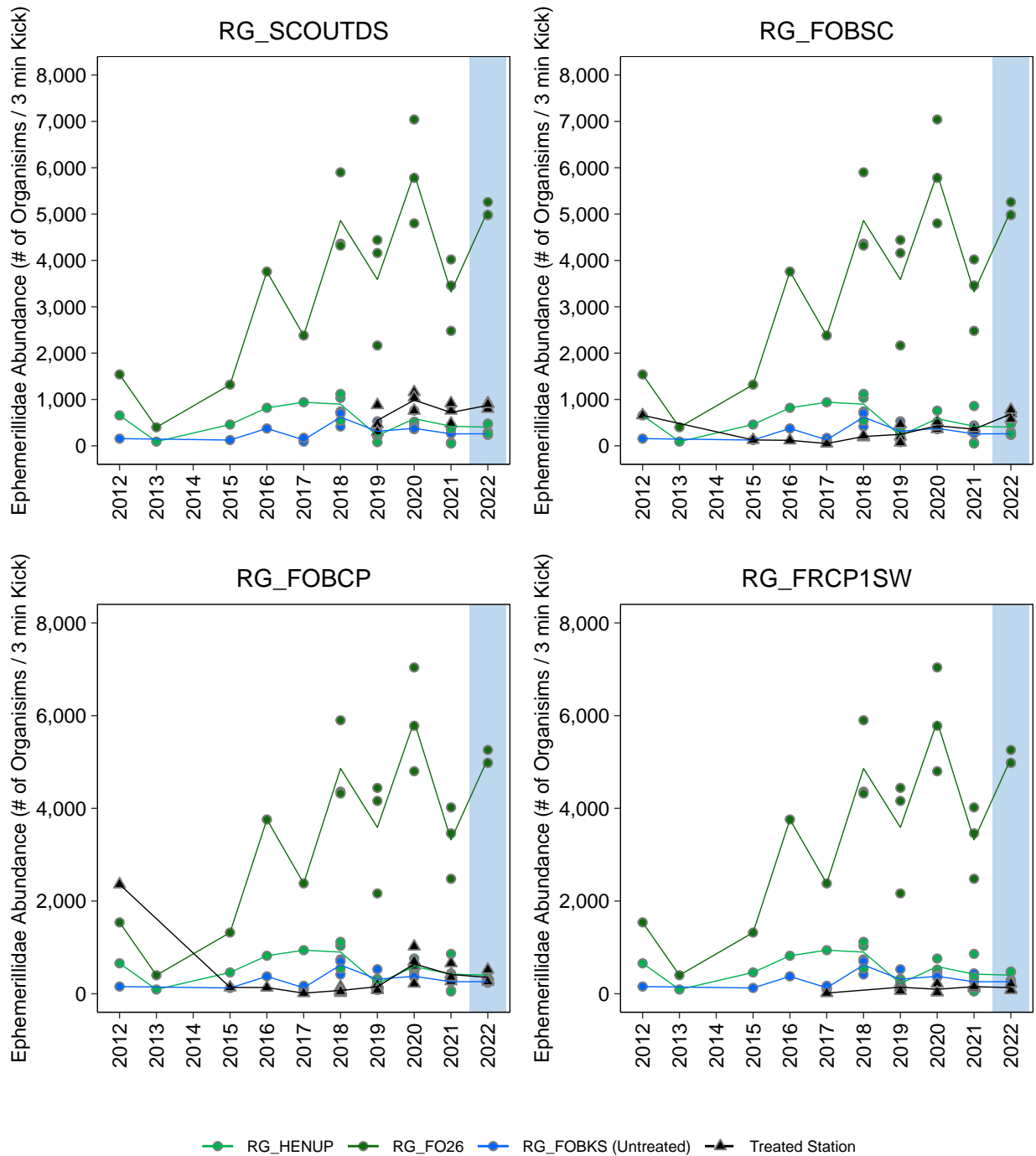


Figure G.46: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

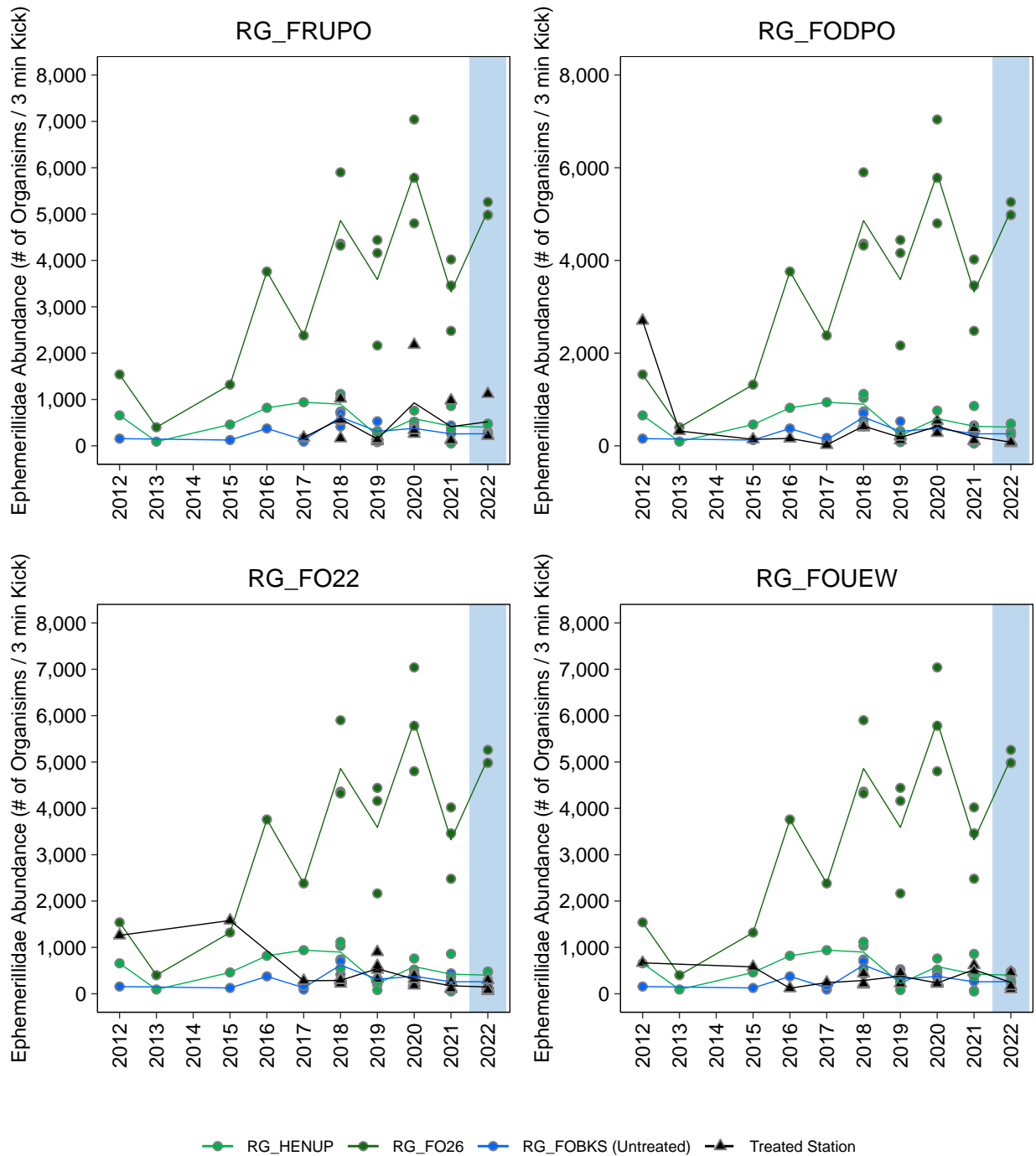


Figure G.46: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

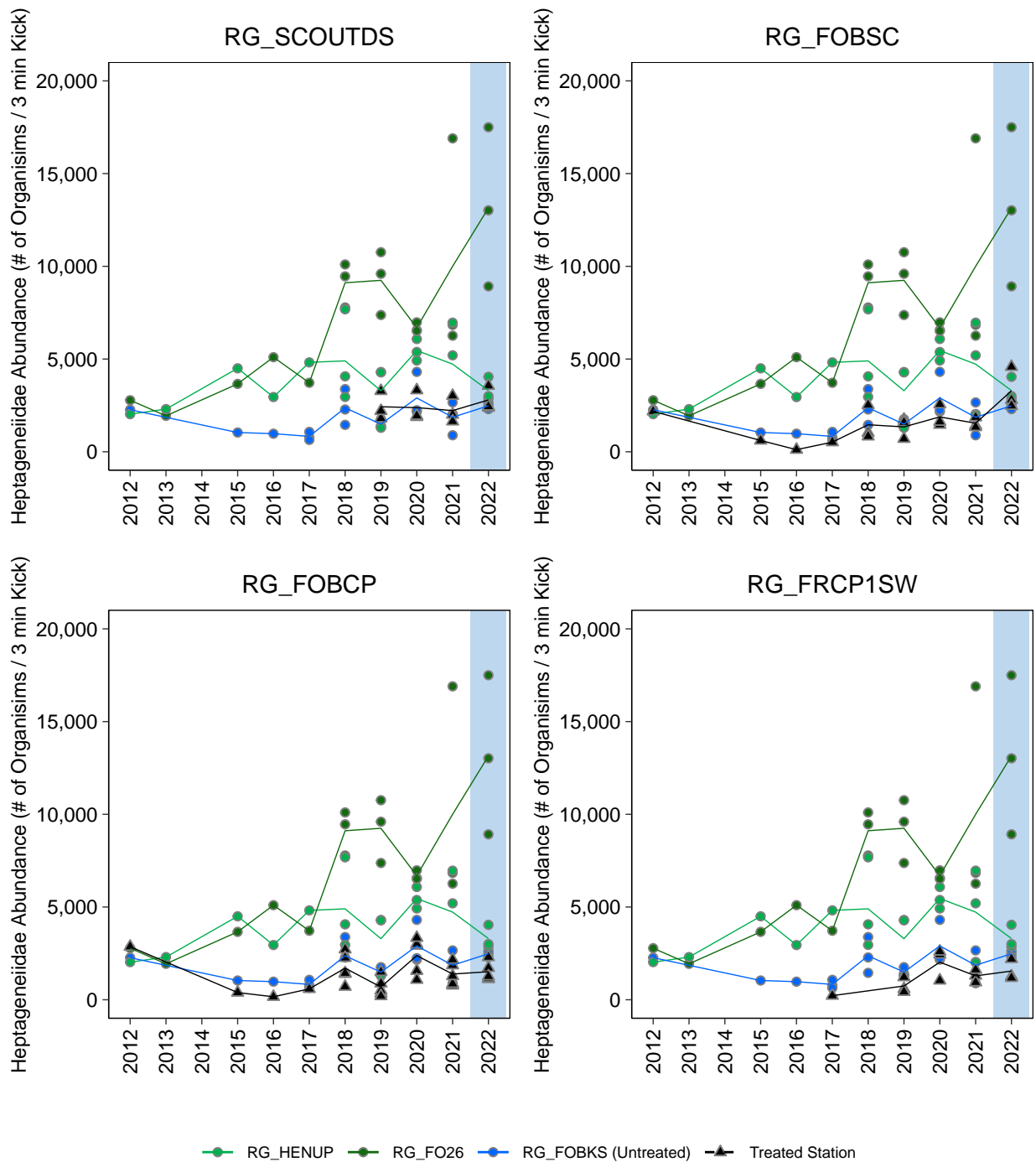


Figure G.47: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

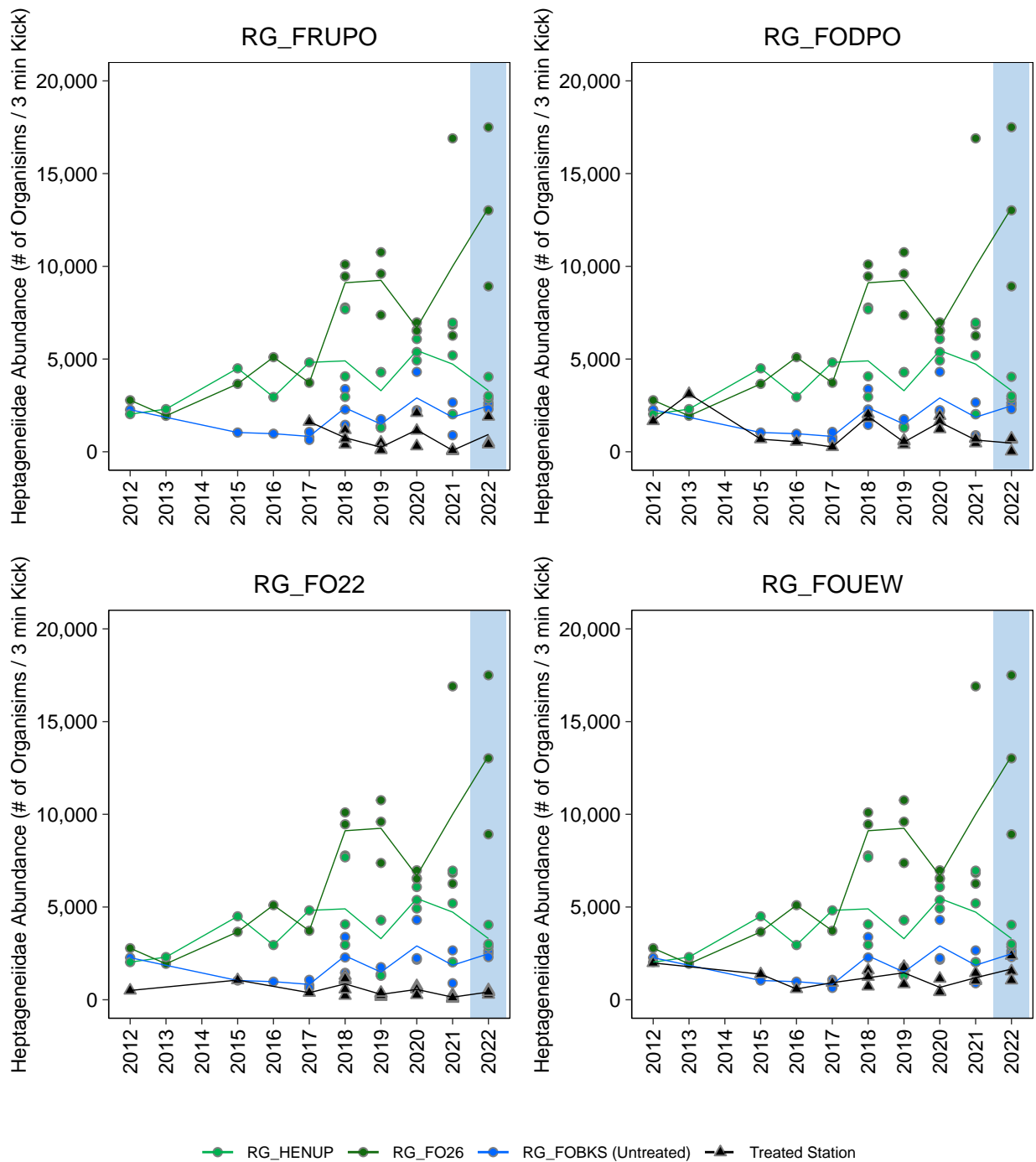


Figure G.47: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

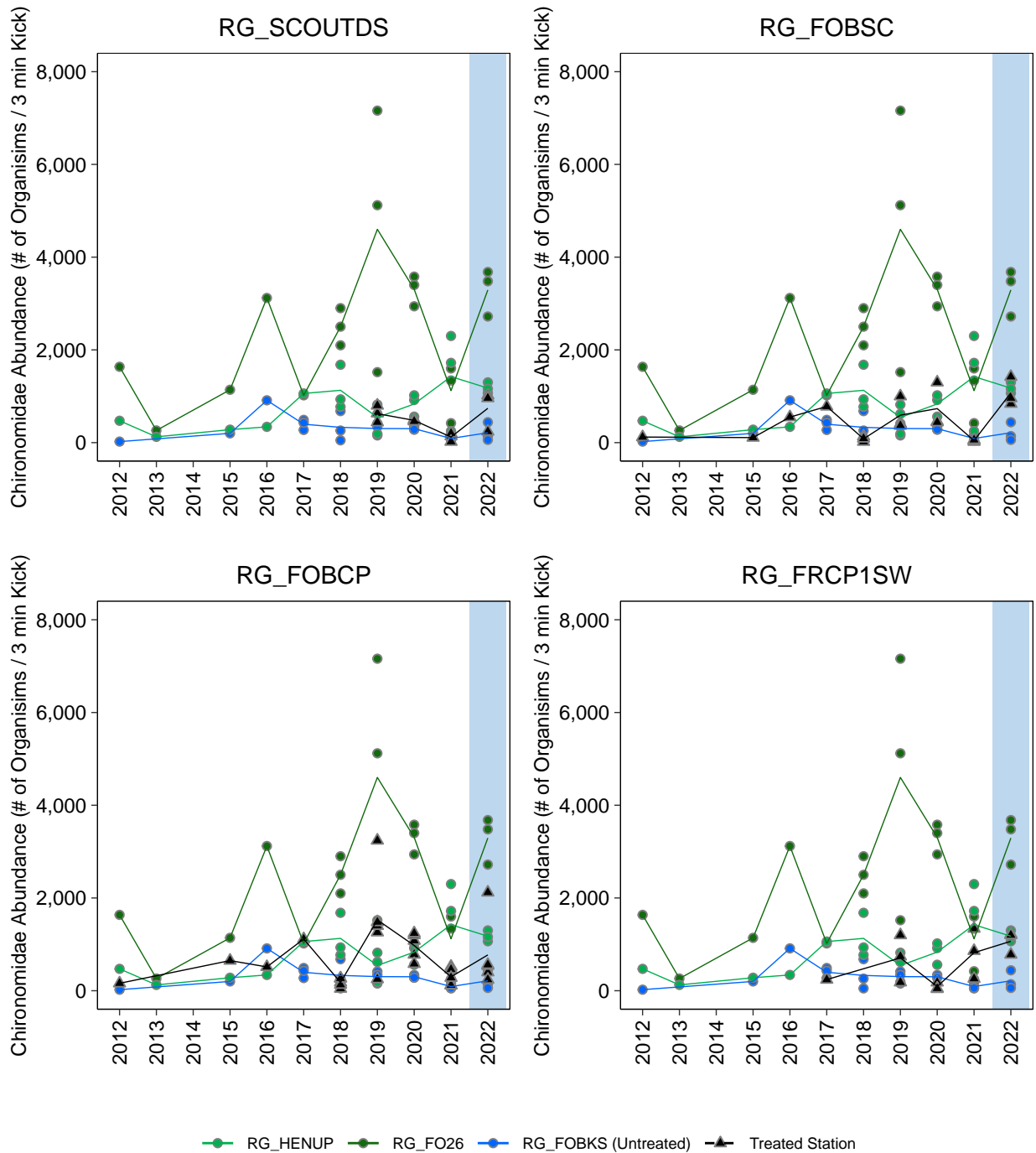


Figure G.48: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

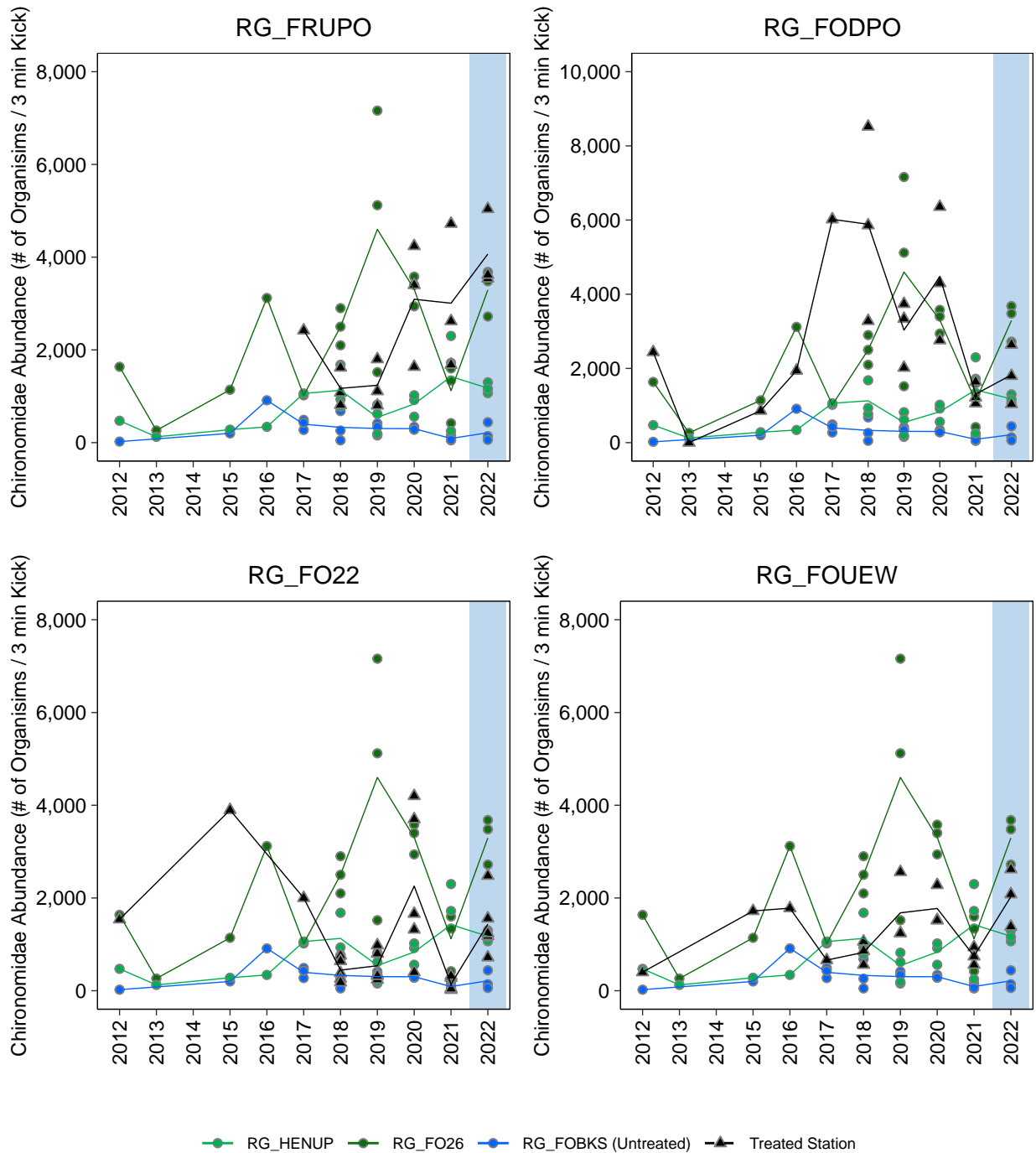


Figure G.48: Benthic Invertebrate Community Endpoints at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

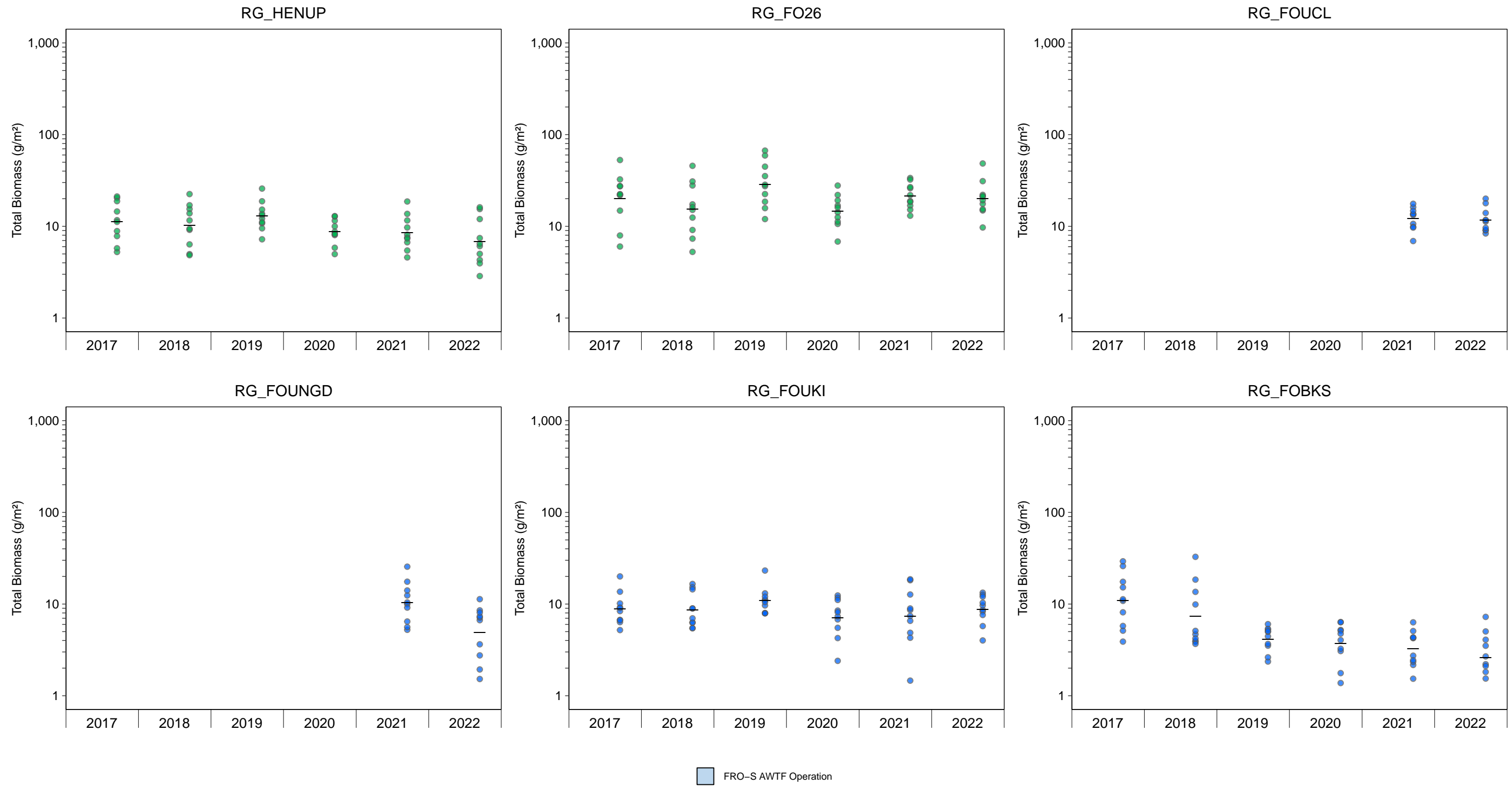


Figure G.49: Total Benthic Invertebrate Biomass (Hess Sampling) by Year, FRO LAEMP, September 2012 to 2022

Note: Green represents reference areas and blue represents exposed areas. Black lines denote the geometric means.

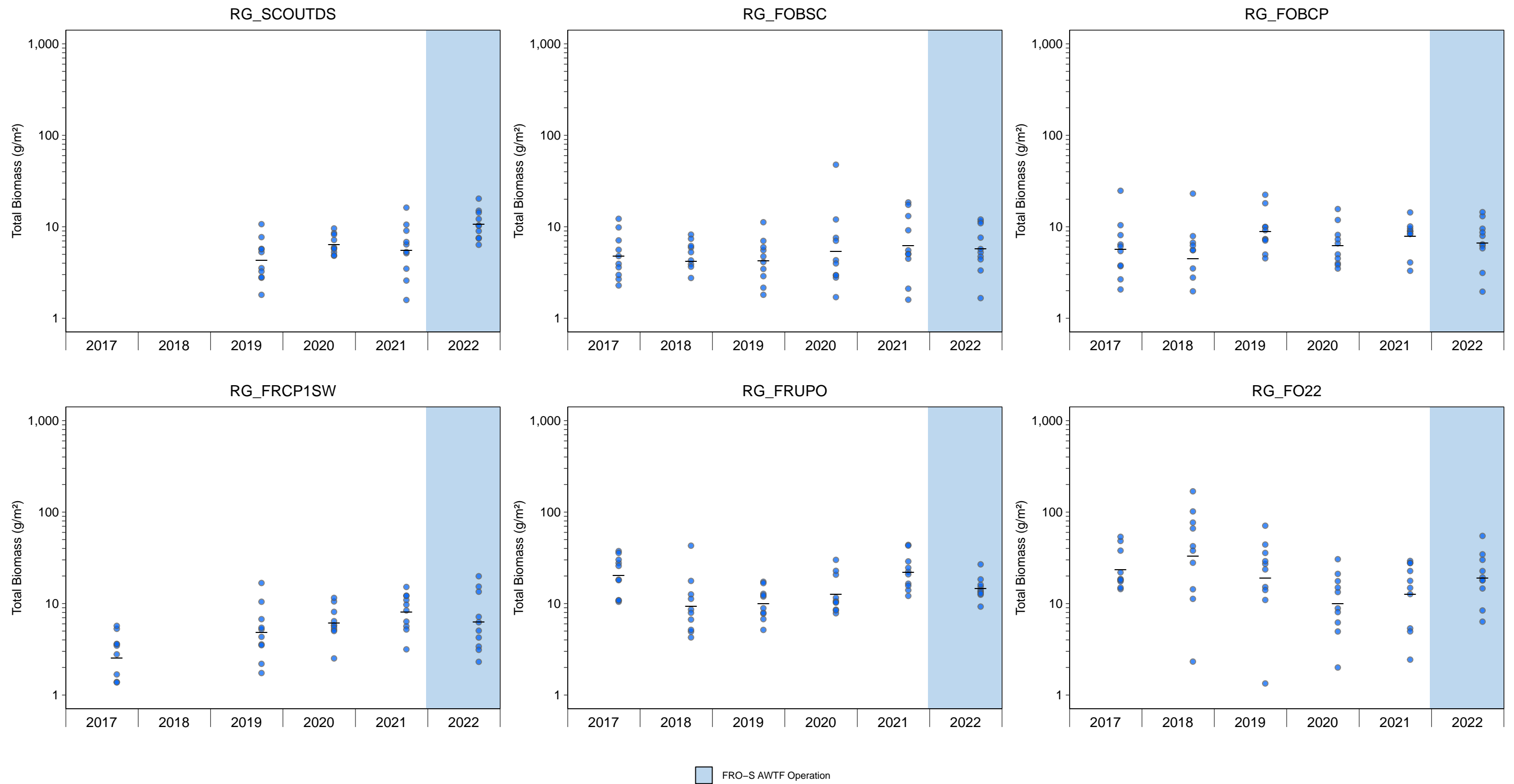


Figure G.49: Total Benthic Invertebrate Biomass (Hess Sampling) by Year, FRO LAEMP, September 2012 to 2022

Note: Green represents reference areas and blue represents exposed areas. Black lines denote the geometric means.

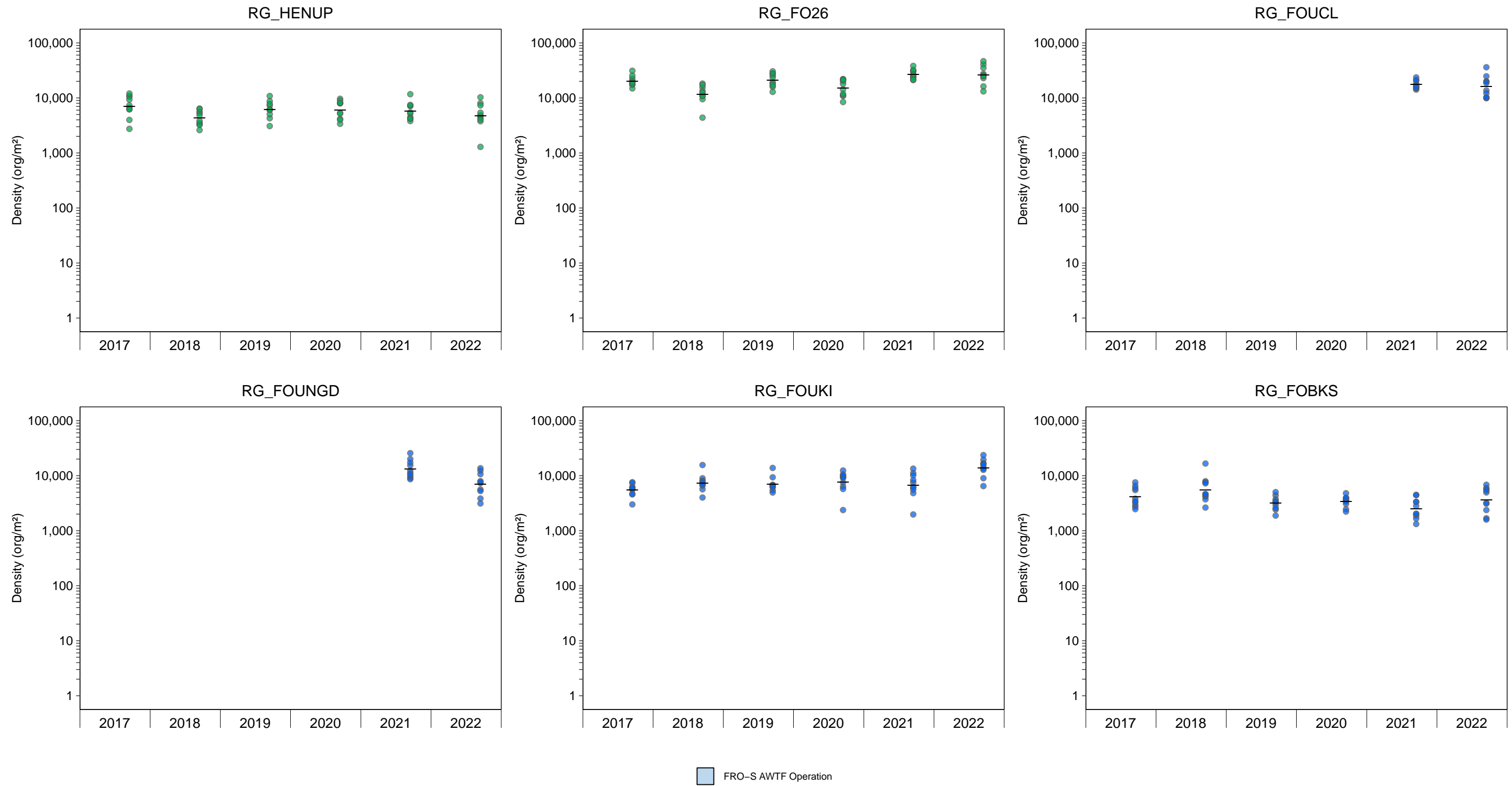


Figure G.50: Total Benthic Invertebrate Density (Hess Sampling) by Year, FRO LAEMP, September 2012 to 2022

Note: Green represents reference areas and blue represents exposed areas. Black lines denote the geometric means.

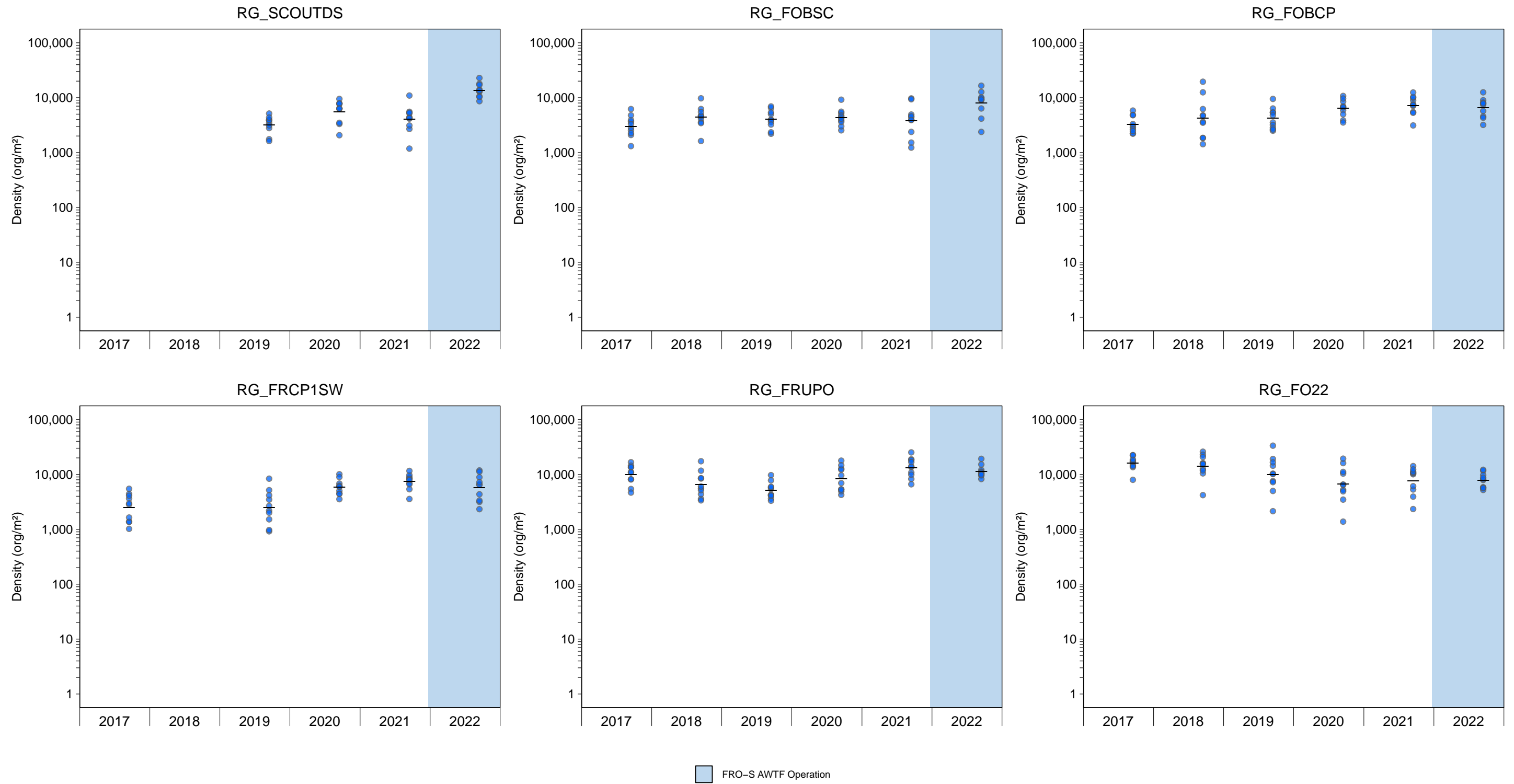


Figure G.50: Total Benthic Invertebrate Density (Hess Sampling) by Year, FRO LAEMP, September 2012 to 2022

Note: Green represents reference areas and blue represents exposed areas. Black lines denote the geometric means.

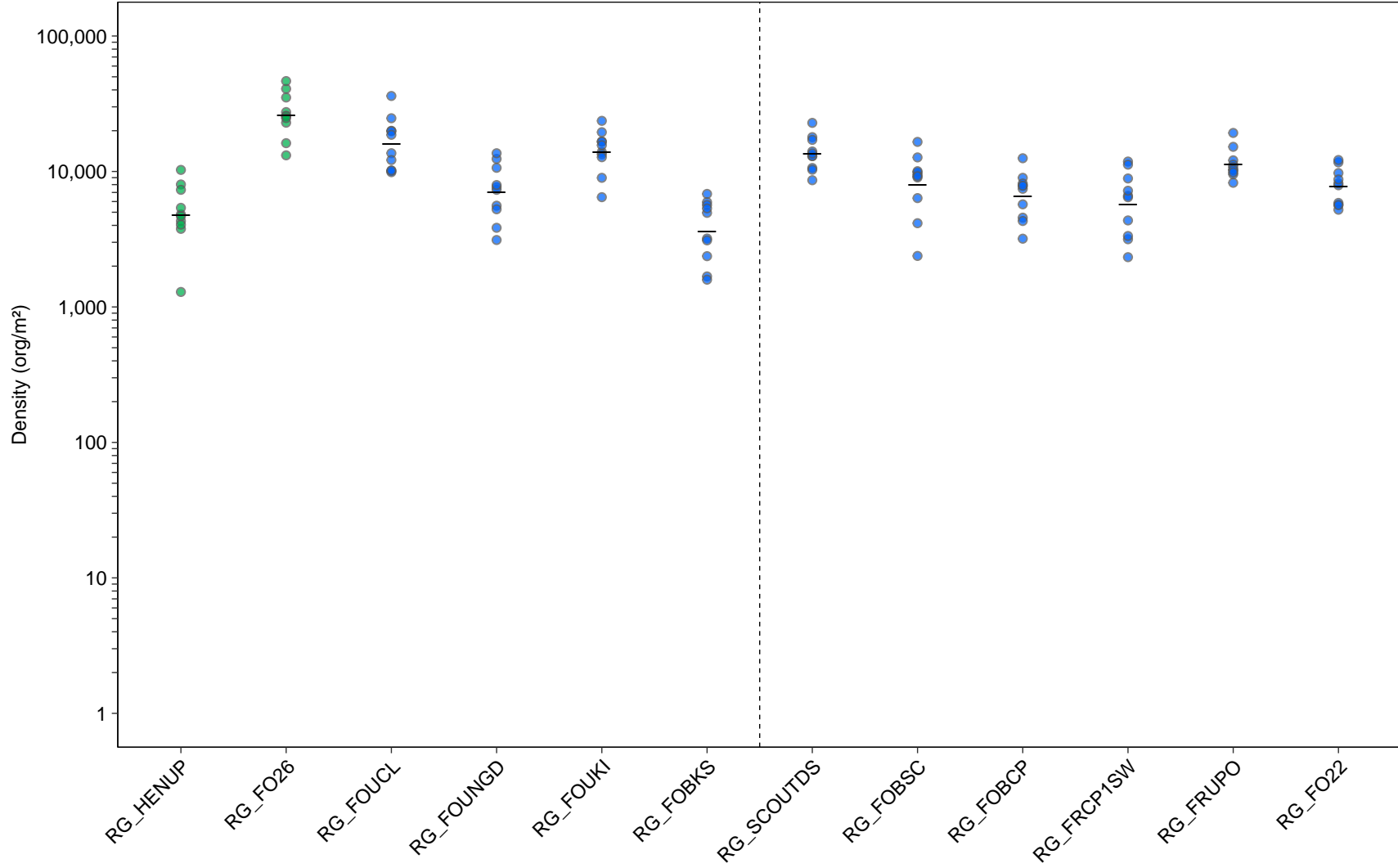


Figure G.51: Total Benthic Invertebrate Density and Biomass (Hess Sampling) by Area, FRO LAEMP, September 2022

Note: Green represents reference areas and blue represents exposed areas. Black lines denote the geometric means. The dashed line denotes the FRO-S AWTF outfall location.

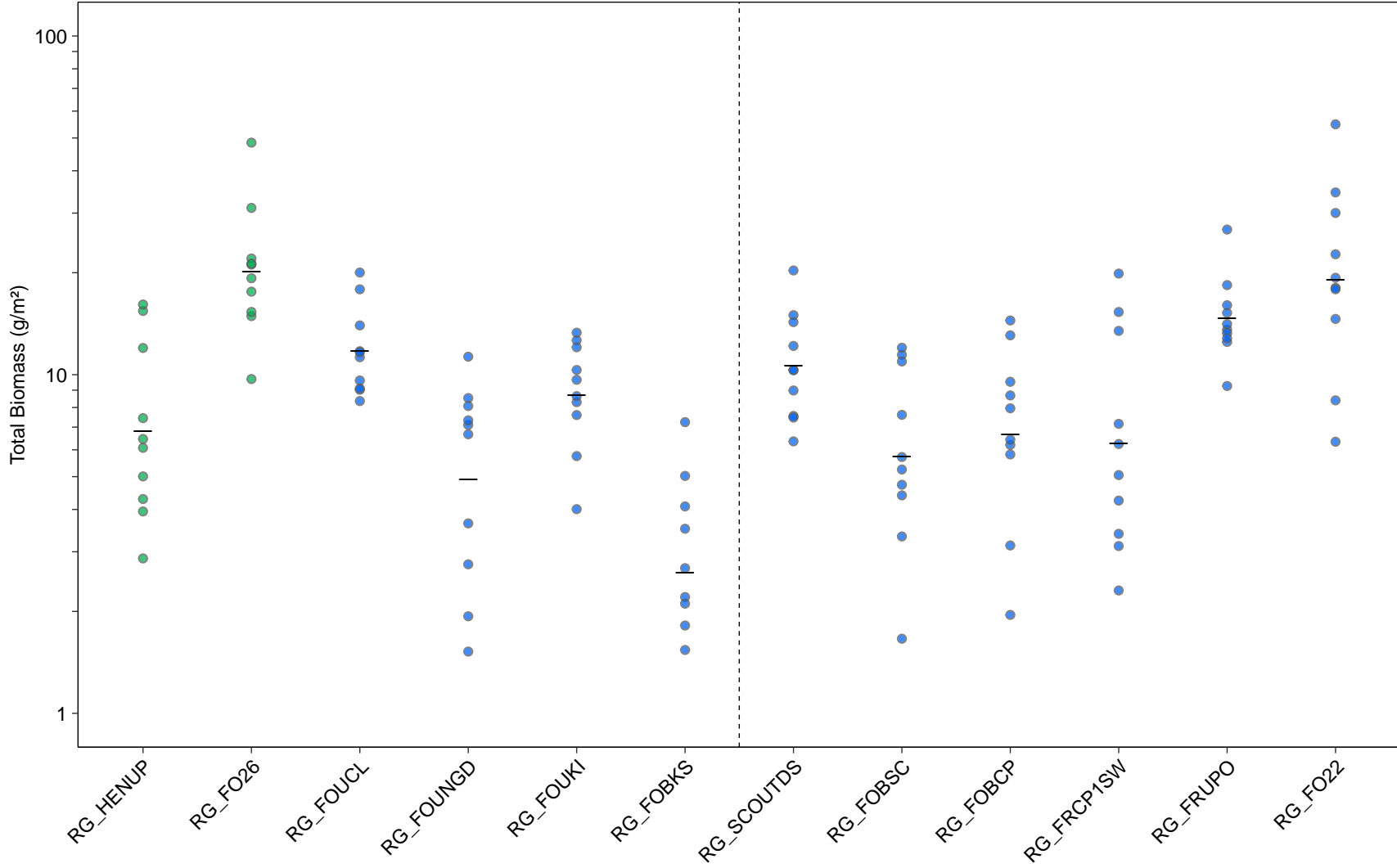


Figure G.51: Total Benthic Invertebrate Density and Biomass (Hess Sampling) by Area, FRO LAEMP, September 2022

Note: Green represents reference areas and blue represents exposed areas. Black lines denote the geometric means. The dashed line denotes the FRO-S AWTF outfall location.

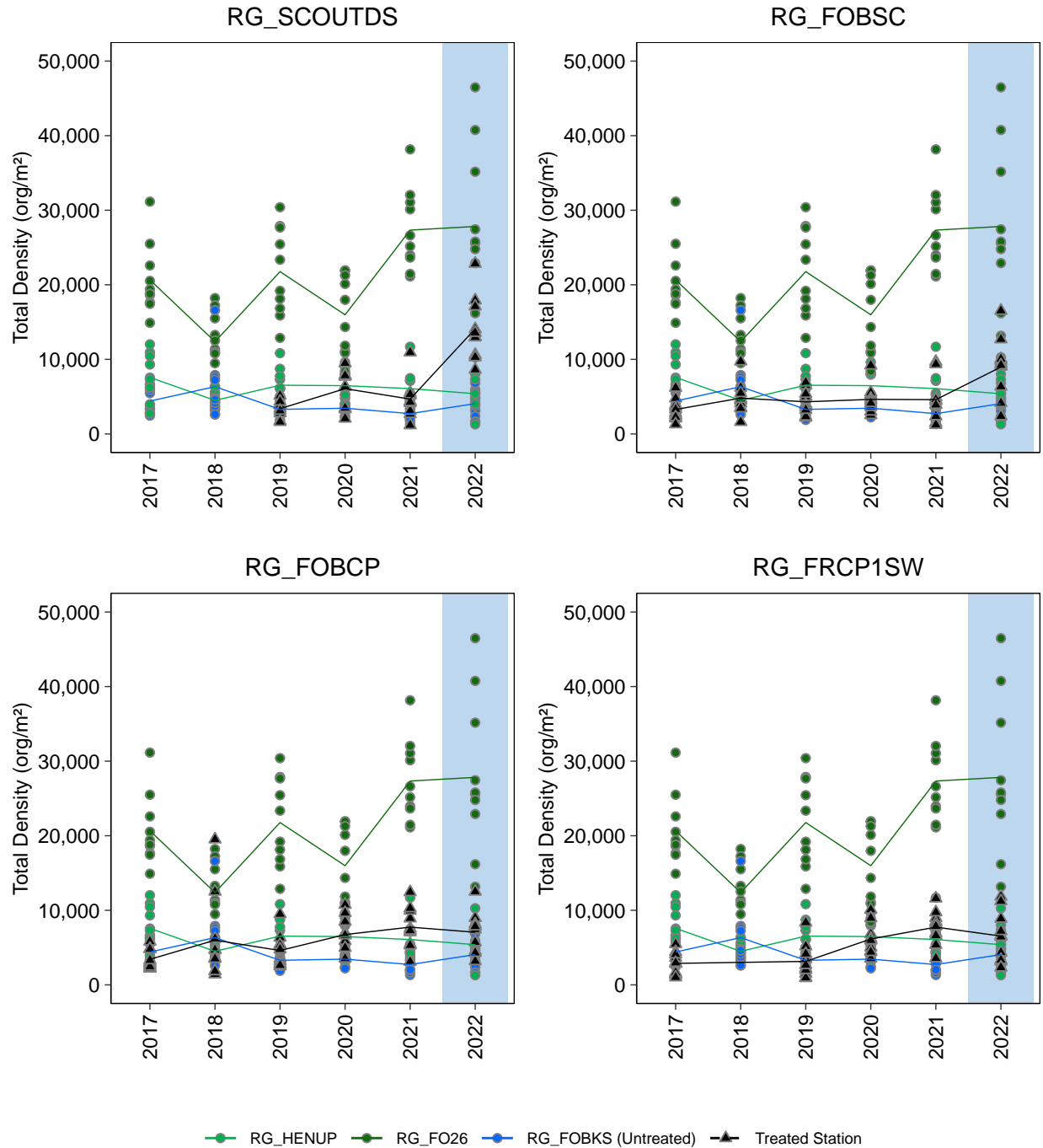


Figure G.52: Benthic Invertebrate Density and Biomass at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

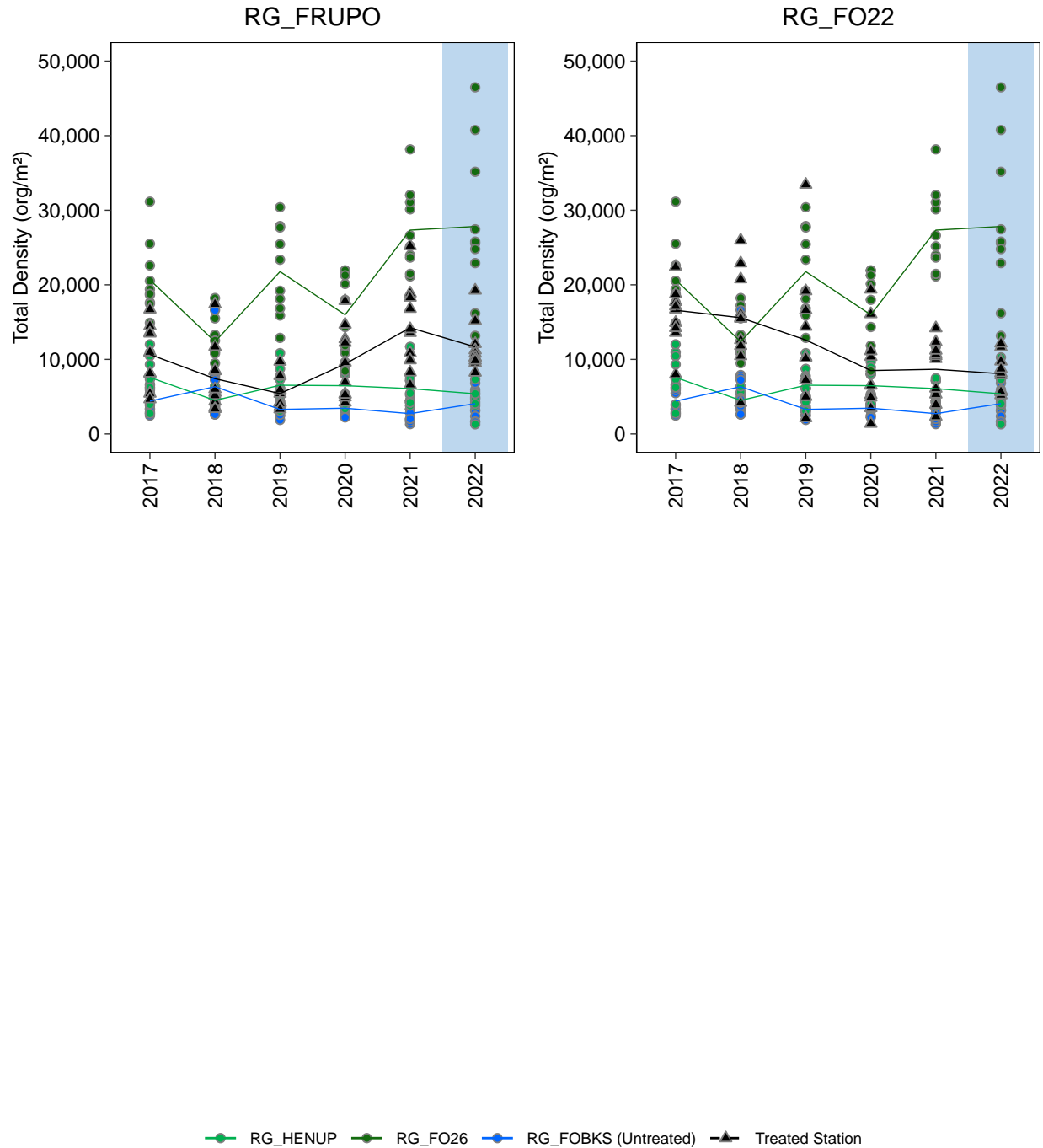


Figure G.52: Benthic Invertebrate Density and Biomass at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

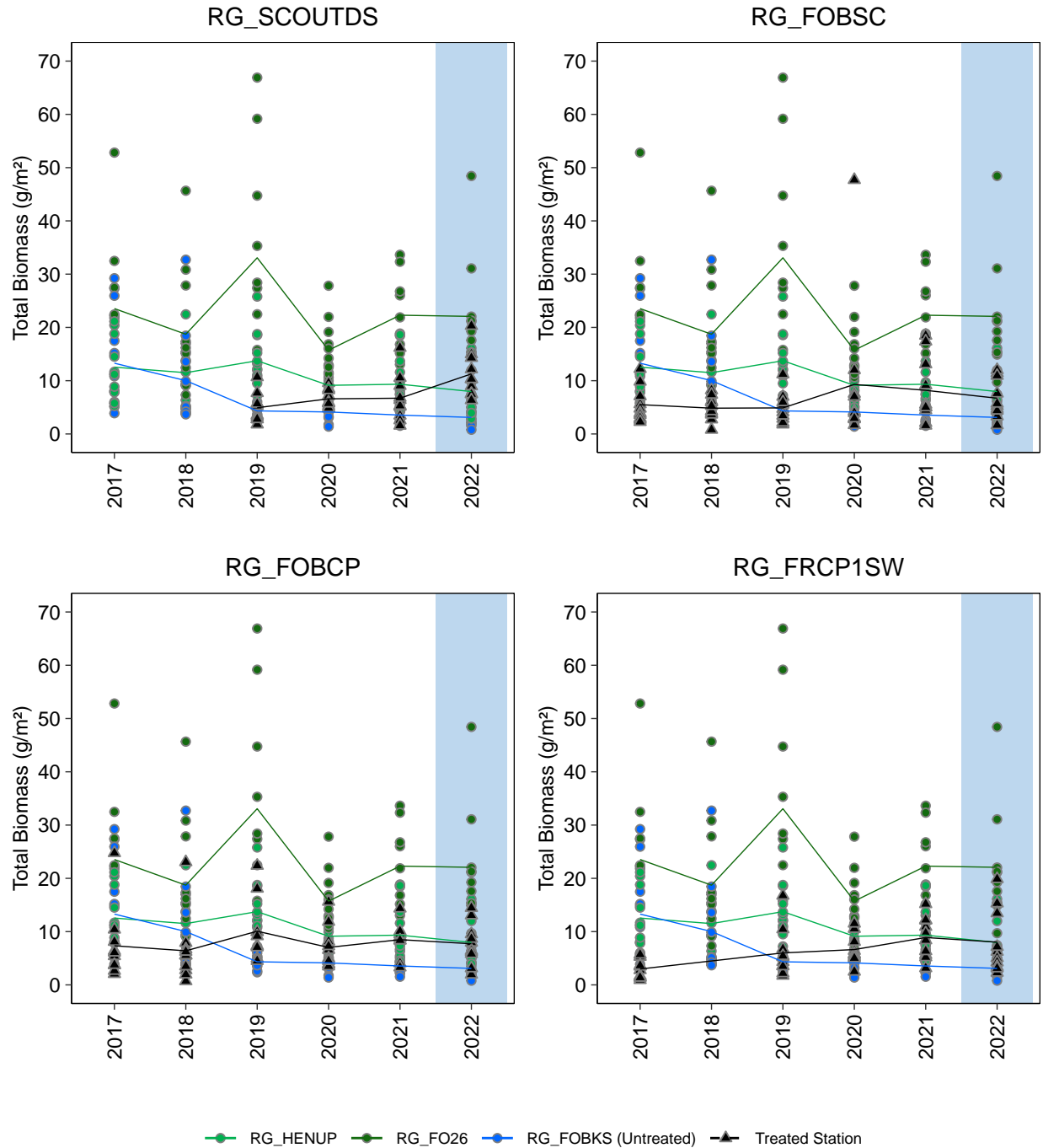


Figure G.53: Benthic Invertebrate Density and Biomass at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

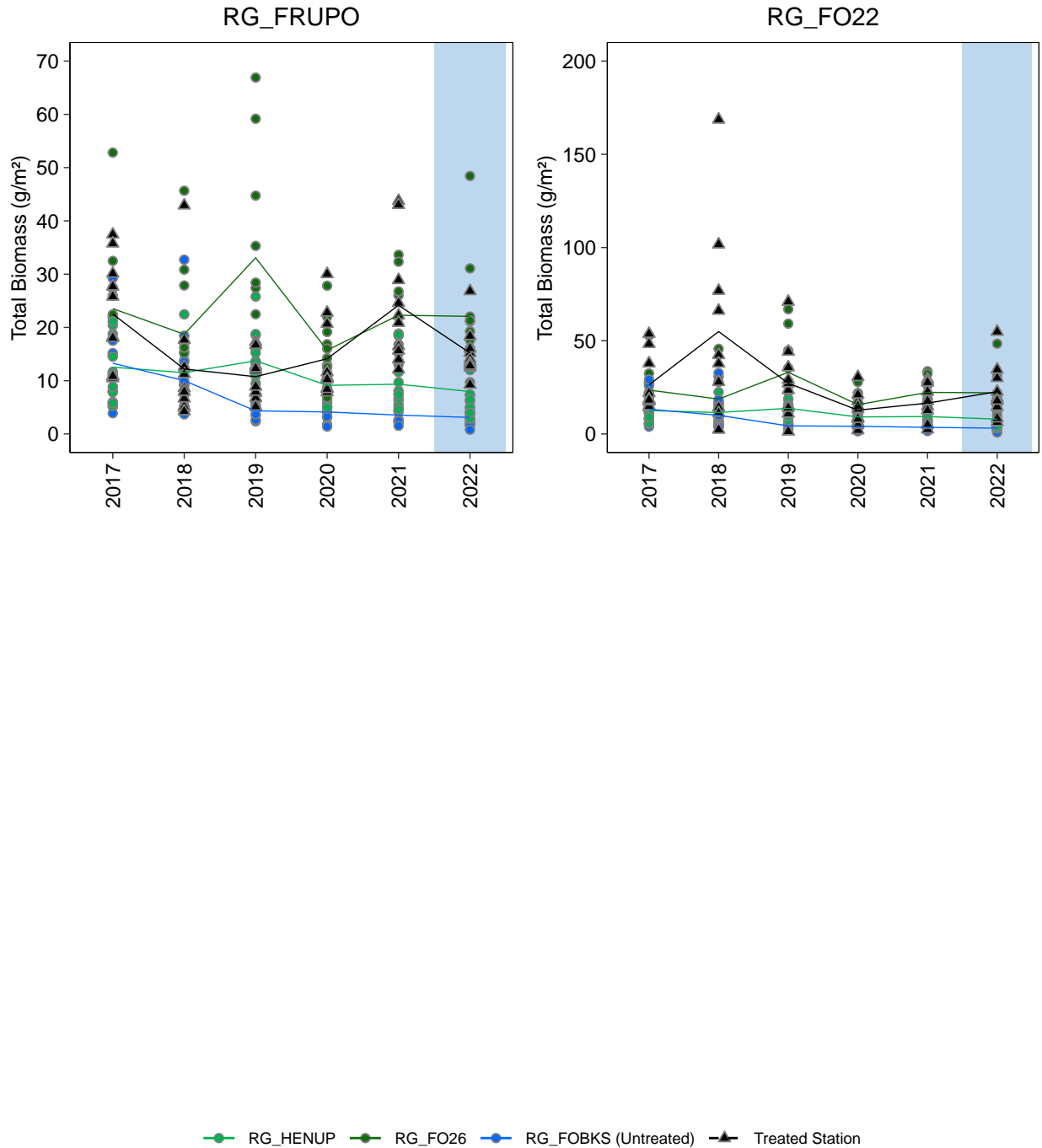


Figure G.53: Benthic Invertebrate Density and Biomass at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2012 to 2022

Notes: All data is shown, however only years with the treated station present were used in analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. Green represents reference areas. Blue shading represents FRO-S AWTF operation.

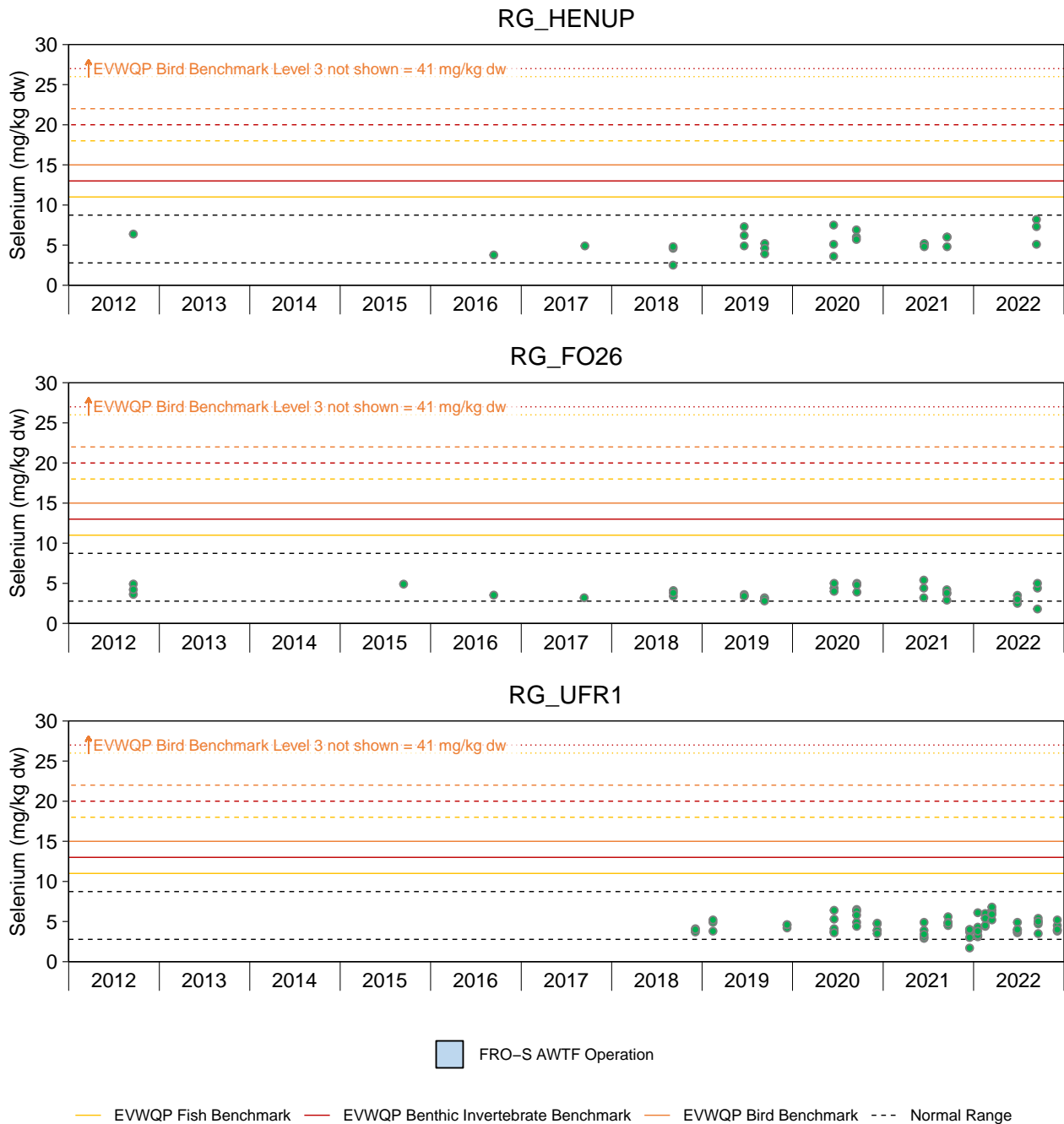


Figure G.54: Composite-taxa Benthic Invertebrate Tissue Selenium Concentrations, FRO LAEMP, 2012 to 2022

Notes: Dashed black lines represent the normal range defined as the 2.5th and 97.5th percentiles of the 2012 to 2019 reference area data from the Regional Aquatic Environmental Monitoring Program (RAEMP). Green represents reference stations and blue represents mine-exposed stations. Level 1 benchmarks are shown with a solid line, Level 2 benchmarks are shown with a dashed line, and Level 3 benchmarks are shown with a dotted line. Samples containing an Oligochaete in September 2022 and after are outlined in purple, samples prior to this date were not necessarily identified as having an Oligochaete. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

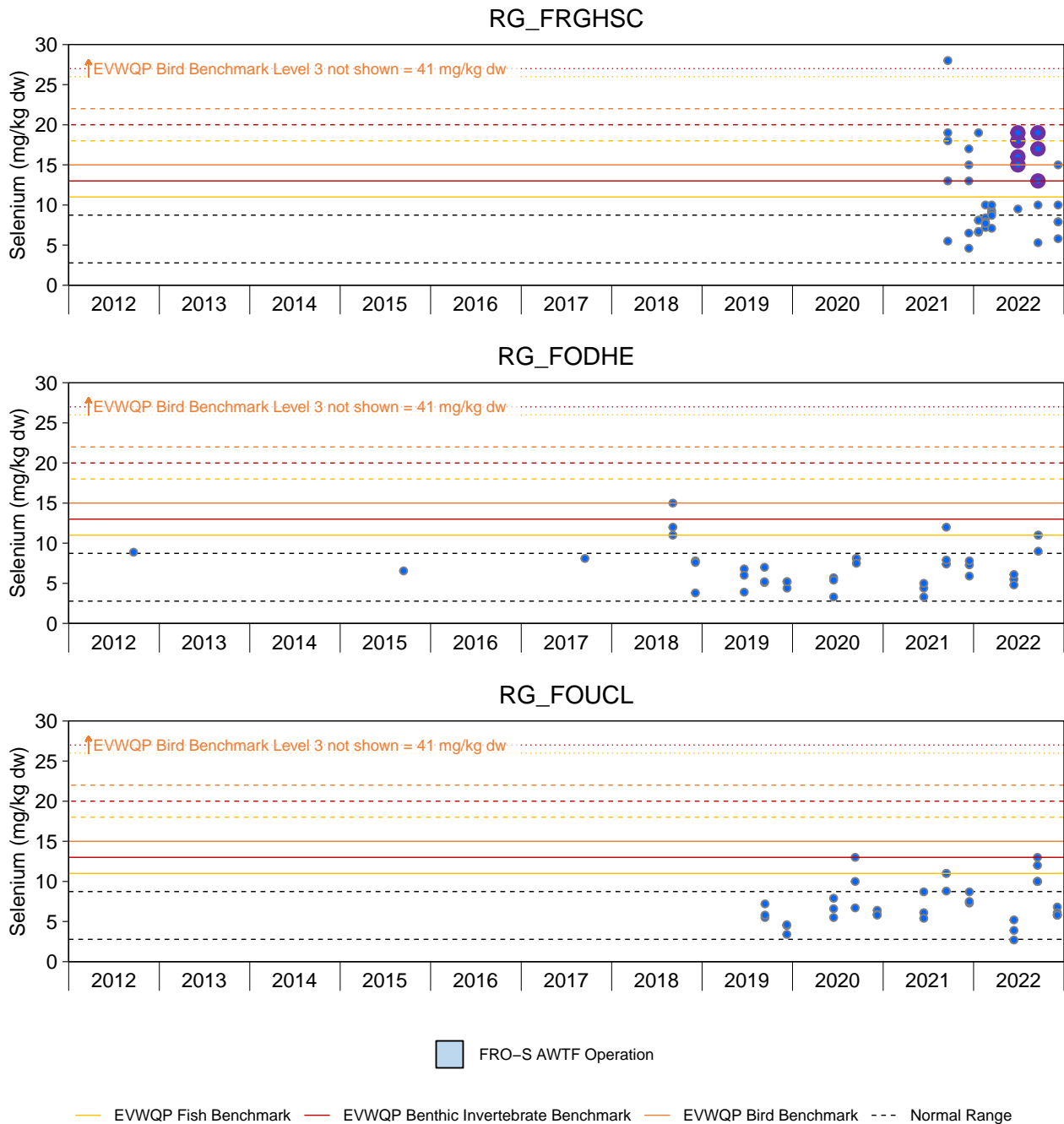


Figure G.54 Composite-taxa Benthic Invertebrate Tissue Selenium Concentrations, FRO LAEMP, 2012 to 2022

Notes: Dashed black lines represent the normal range defined as the 2.5th and 97.5th percentiles of the 2012 to 2019 reference area data from the Regional Aquatic Environmental Monitoring Program (RAEMP). Green represents reference stations and blue represents mine-exposed stations. Level 1 benchmarks are shown with a solid line, Level 2 benchmarks are shown with a dashed line, and Level 3 benchmarks are shown with a dotted line. Samples containing an Oligochaete in September 2022 and after are outlined in purple, samples prior to this date were not necessarily identified as having an Oligochaete. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

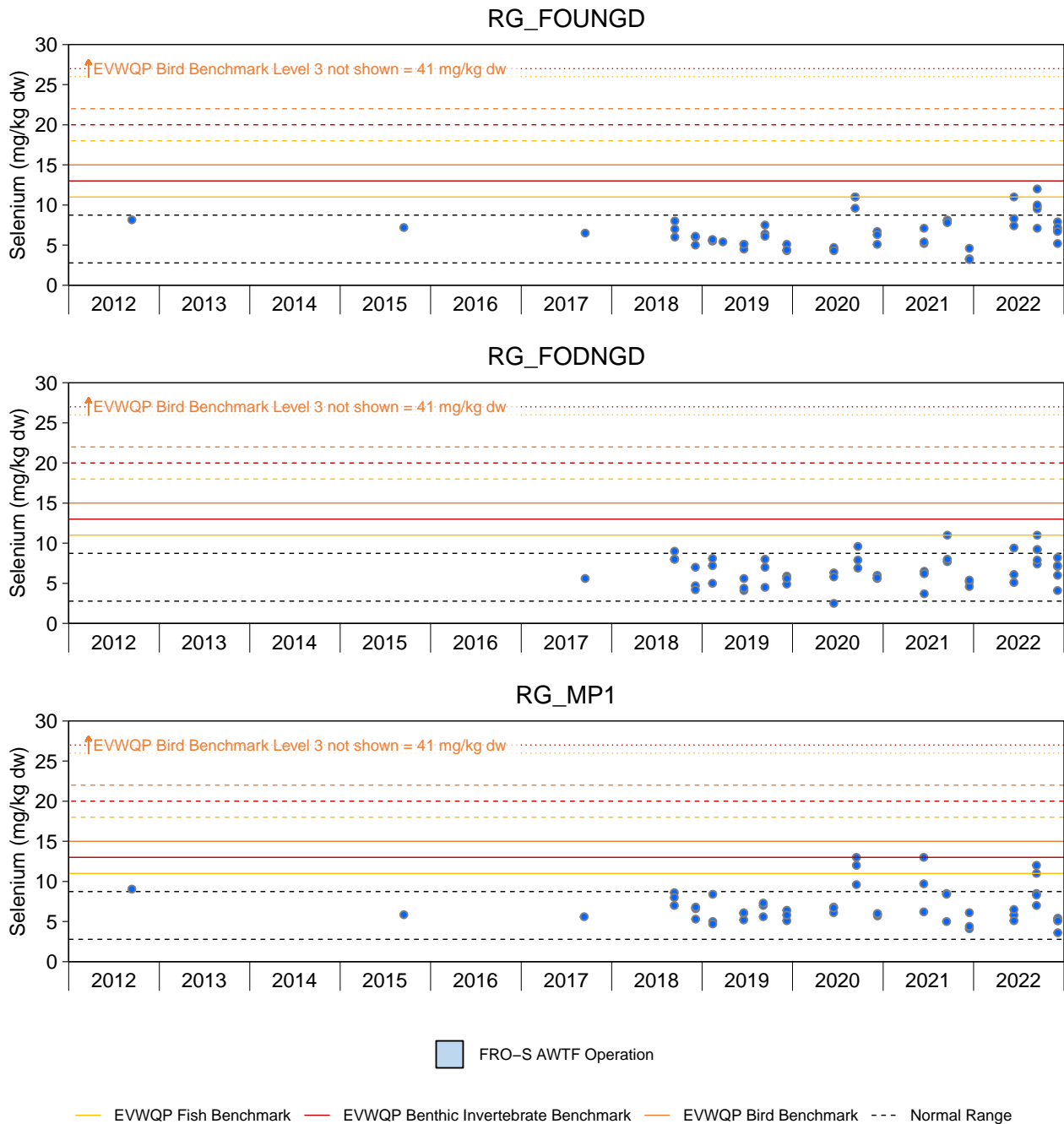


Figure G.54: Composite-taxa Benthic Invertebrate Tissue Selenium Concentrations, FRO LAEMP, 2012 to 2022

Notes: Dashed black lines represent the normal range defined as the 2.5th and 97.5th percentiles of the 2012 to 2019 reference area data from the Regional Aquatic Environmental Monitoring Program (RAEMP). Green represents reference stations and blue represents mine-exposed stations. Level 1 benchmarks are shown with a solid line, Level 2 benchmarks are shown with a dashed line, and Level 3 benchmarks are shown with a dotted line. Samples containing an Oligochaete in September 2022 and after are outlined in purple, samples prior to this date were not necessarily identified as having an Oligochaete. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

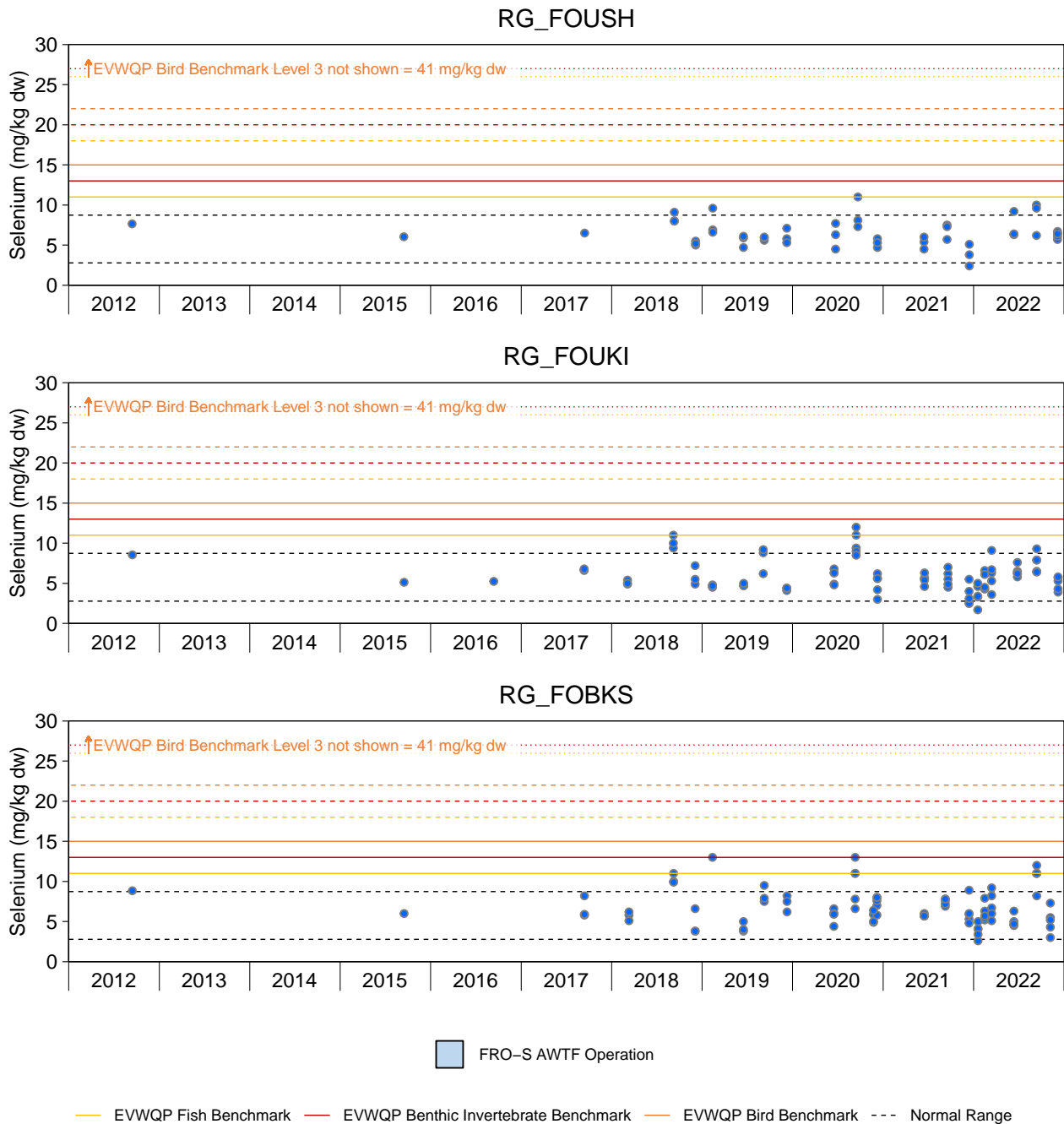


Figure G.54: Composite-taxa Benthic Invertebrate Tissue Selenium Concentrations, FRO LAEMP, 2012 to 2022

Notes: Dashed black lines represent the normal range defined as the 2.5th and 97.5th percentiles of the 2012 to 2019 reference area data from the Regional Aquatic Environmental Monitoring Program (RAEMP). Green represents reference stations and blue represents mine-exposed stations. Level 1 benchmarks are shown with a solid line, Level 2 benchmarks are shown with a dashed line, and Level 3 benchmarks are shown with a dotted line. Samples containing an Oligochaete in September 2022 and after are outlined in purple, samples prior to this date were not necessarily identified as having an Oligochaete. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

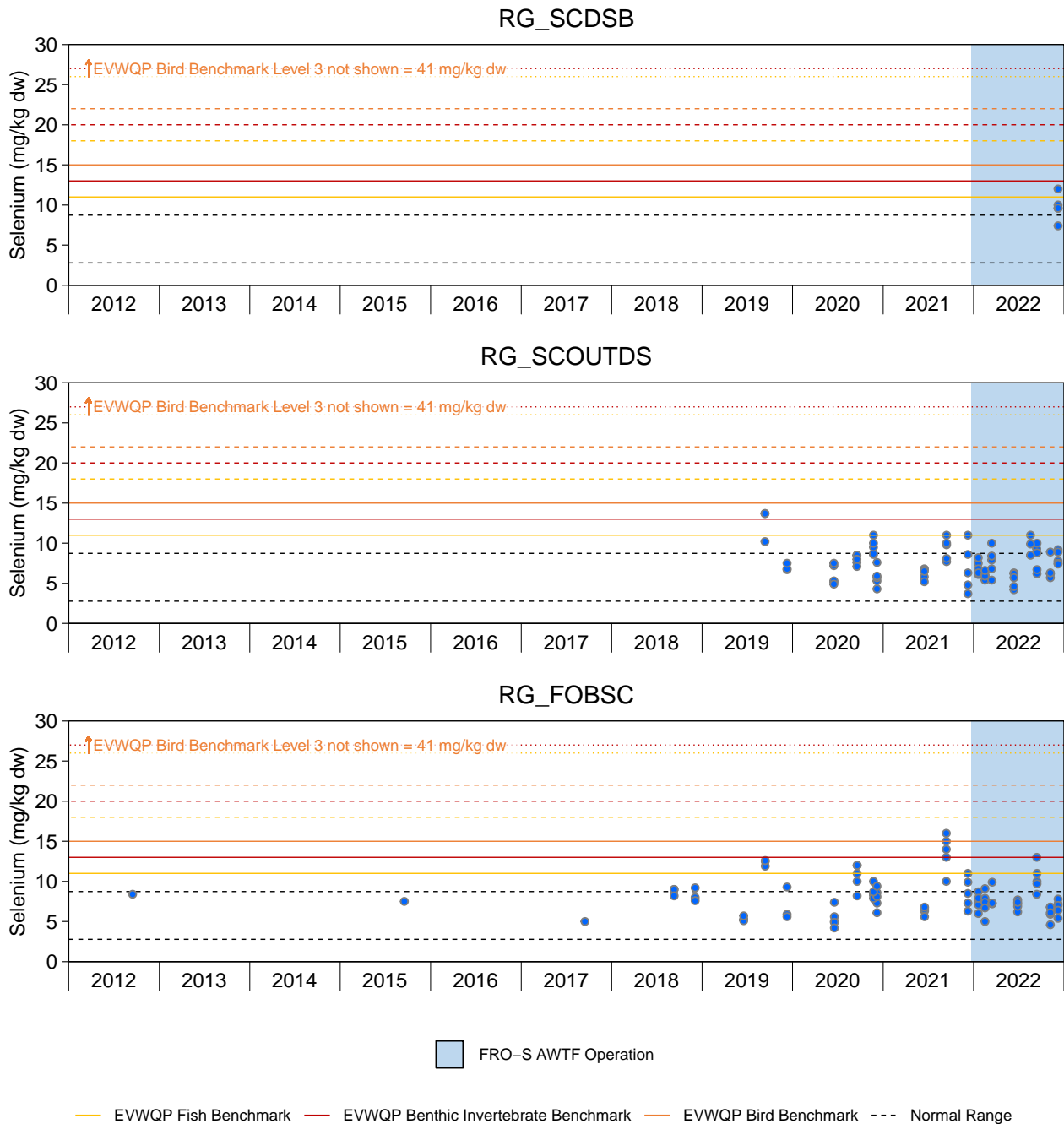


Figure G.54: Composite-taxa Benthic Invertebrate Tissue Selenium Concentrations, FRO LAEMP, 2012 to 2022

Notes: Dashed black lines represent the normal range defined as the 2.5th and 97.5th percentiles of the 2012 to 2019 reference area data from the Regional Aquatic Environmental Monitoring Program (RAEMP). Green represents reference stations and blue represents mine-exposed stations. Level 1 benchmarks are shown with a solid line, Level 2 benchmarks are shown with a dashed line, and Level 3 benchmarks are shown with a dotted line. Samples containing an Oligochaete in September 2022 and after are outlined in purple, samples prior to this date were not necessarily identified as having an Oligochaete. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

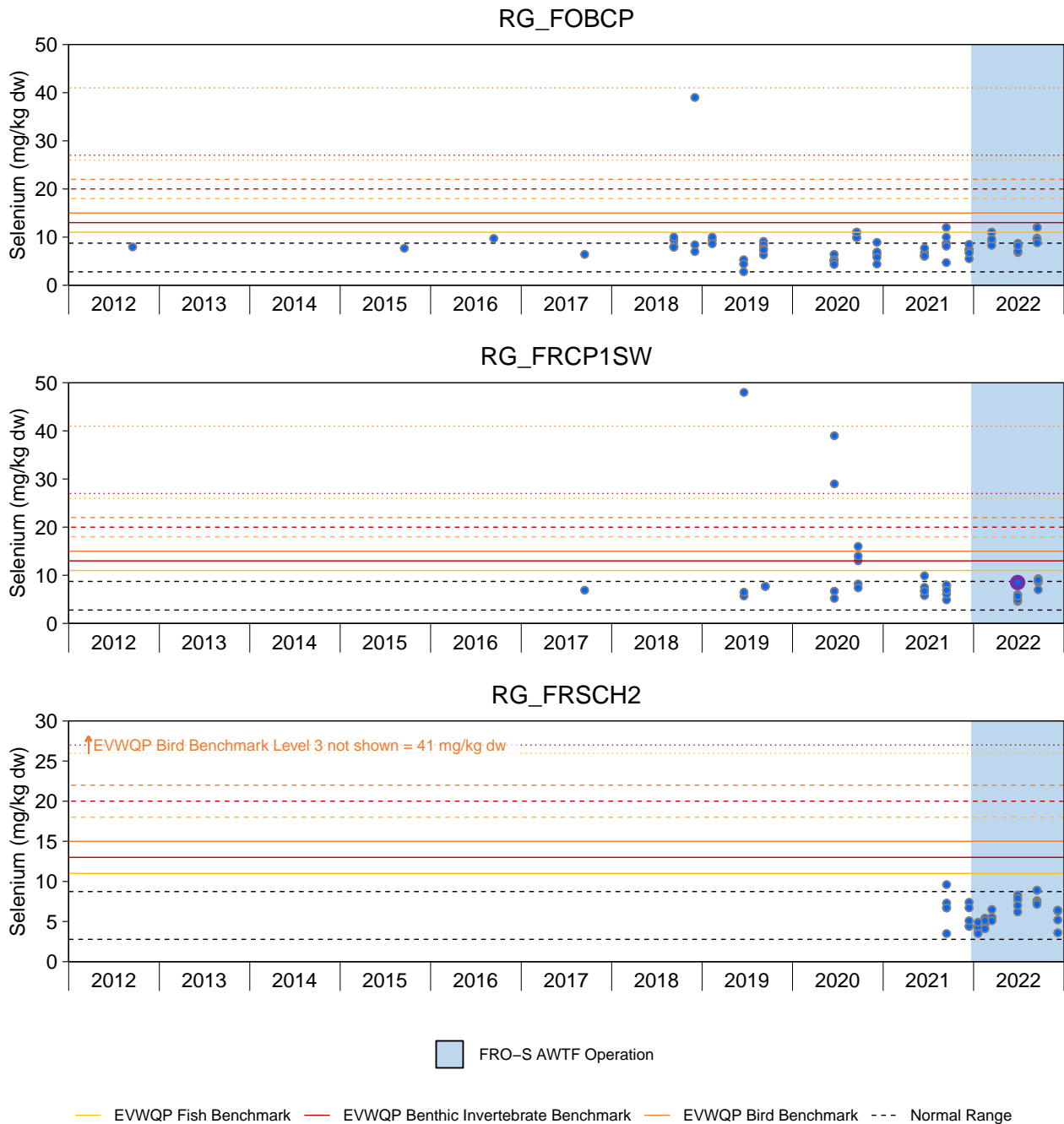


Figure G.54: Composite-taxa Benthic Invertebrate Tissue Selenium Concentrations, FRO LAEMP, 2012 to 2022

Notes: Dashed black lines represent the normal range defined as the 2.5th and 97.5th percentiles of the 2012 to 2019 reference area data from the Regional Aquatic Environmental Monitoring Program (RAEMP). Green represents reference stations and blue represents mine-exposed stations. Level 1 benchmarks are shown with a solid line, Level 2 benchmarks are shown with a dashed line, and Level 3 benchmarks are shown with a dotted line. Samples containing an Oligochaete in September 2022 and after are outlined in purple, samples prior to this date were not necessarily identified as having an Oligochaete. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

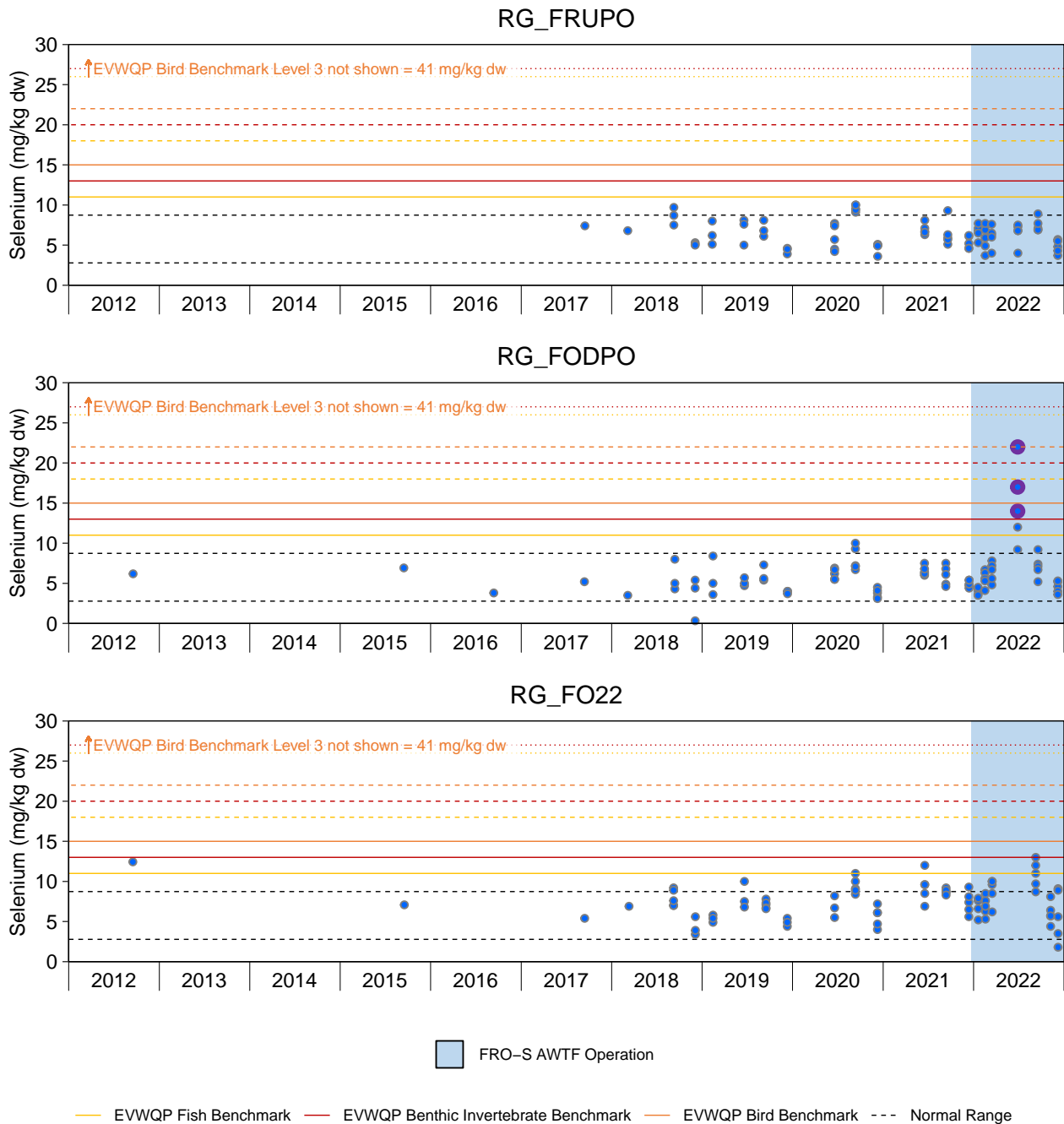


Figure G.54: Composite-taxa Benthic Invertebrate Tissue Selenium Concentrations, FRO LAEMP, 2012 to 2022

Notes: Dashed black lines represent the normal range defined as the 2.5th and 97.5th percentiles of the 2012 to 2019 reference area data from the Regional Aquatic Environmental Monitoring Program (RAEMP). Green represents reference stations and blue represents mine-exposed stations. Level 1 benchmarks are shown with a solid line, Level 2 benchmarks are shown with a dashed line, and Level 3 benchmarks are shown with a dotted line. Samples containing an Oligochaete in September 2022 and after are outlined in purple, samples prior to this date were not necessarily identified as having an Oligochaete. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

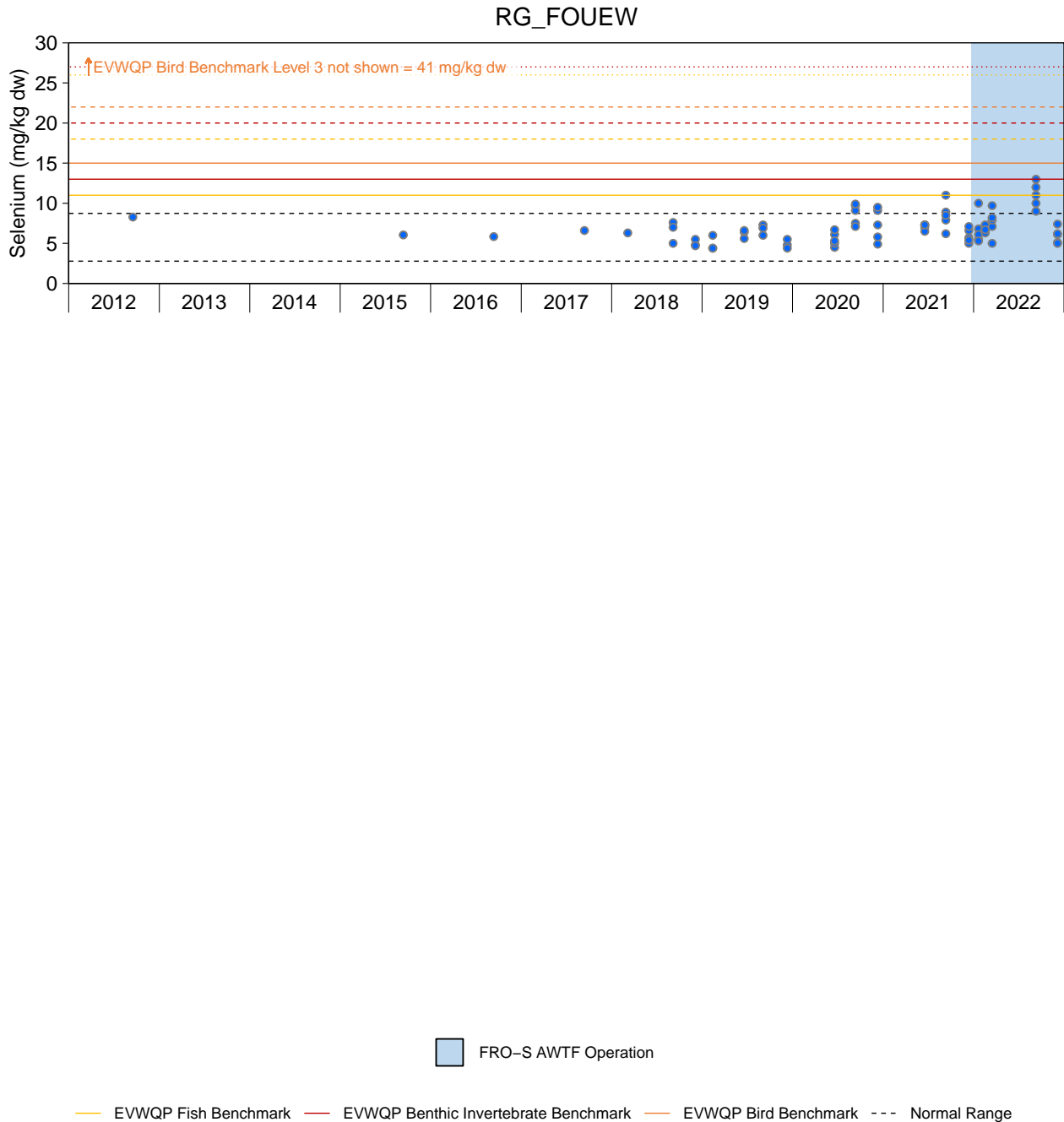


Figure G.54: Composite-taxa Benthic Invertebrate Tissue Selenium Concentrations, FRO LAEMP, 2012 to 2022

Notes: Dashed black lines represent the normal range defined as the 2.5th and 97.5th percentiles of the 2012 to 2019 reference area data from the Regional Aquatic Environmental Monitoring Program (RAEMP). Green represents reference stations and blue represents mine-exposed stations. Level 1 benchmarks are shown with a solid line, Level 2 benchmarks are shown with a dashed line, and Level 3 benchmarks are shown with a dotted line. Samples containing an Oligochaete in September 2022 and after are outlined in purple, samples prior to this date were not necessarily identified as having an Oligochaete. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

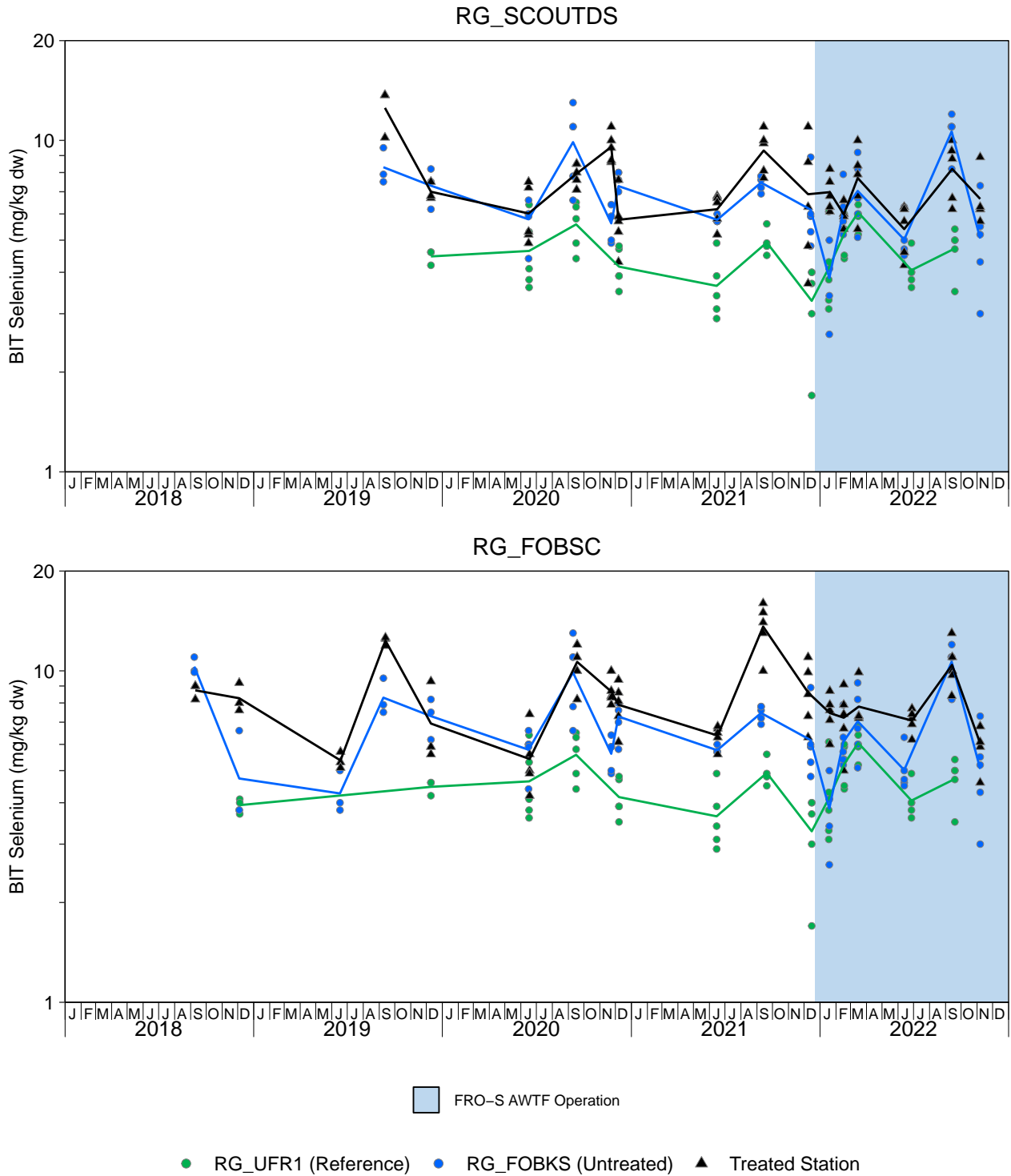
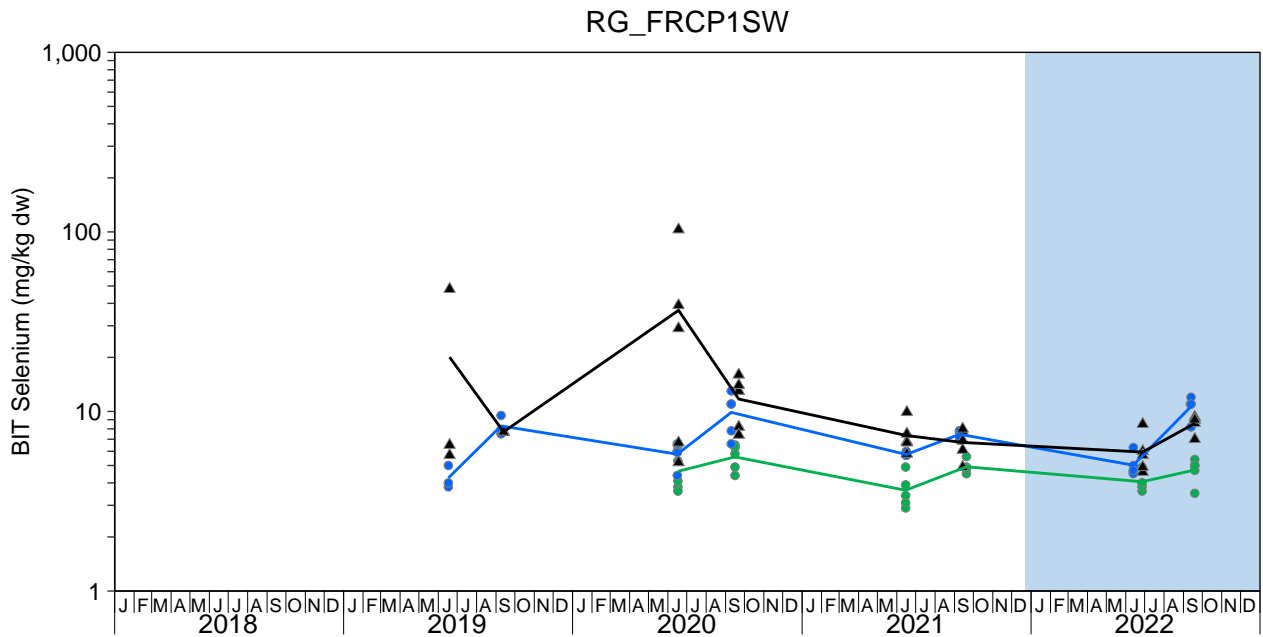
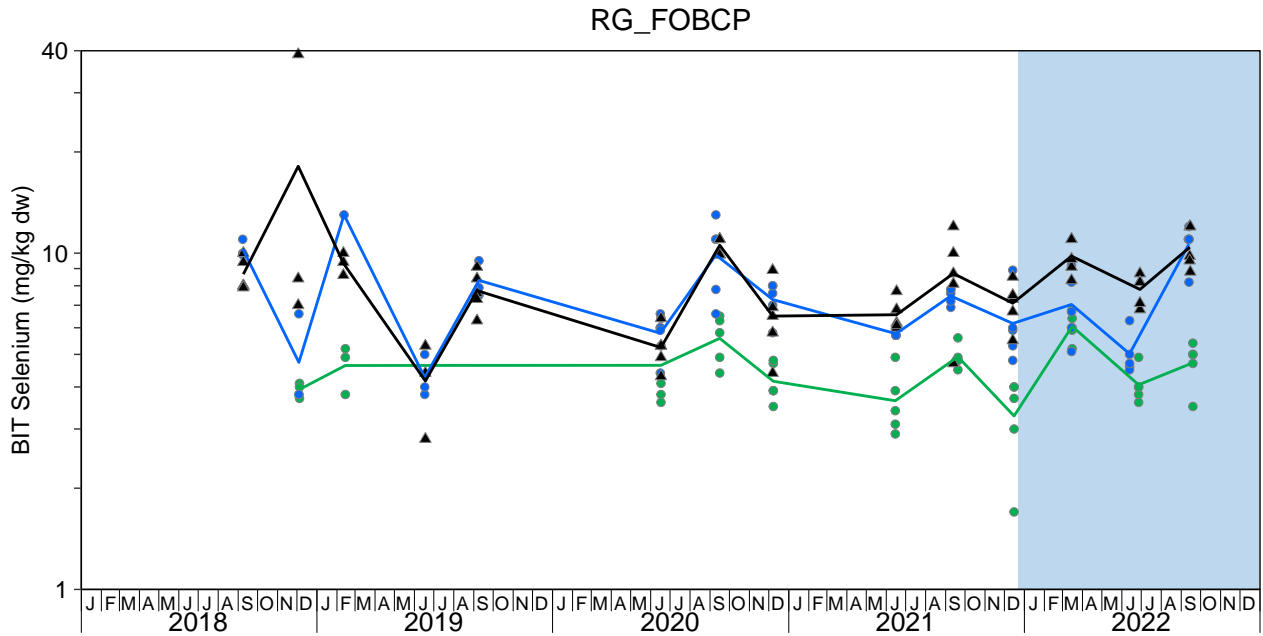


Figure G.55: Benthic Invertebrate Tissue Selenium Concentrations at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2018 to 2022

Notes: Plots are log transformed to match statistical analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.



■ FRO-S AWTF Operation

● RG_UFR1 (Reference) ● RG_FOBKS (Untreated) ▲ Treated Station

Figure G.55: Benthic Invertebrate Tissue Selenium Concentrations at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2018 to 2022

Notes: Plots are log transformed to match statistical analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

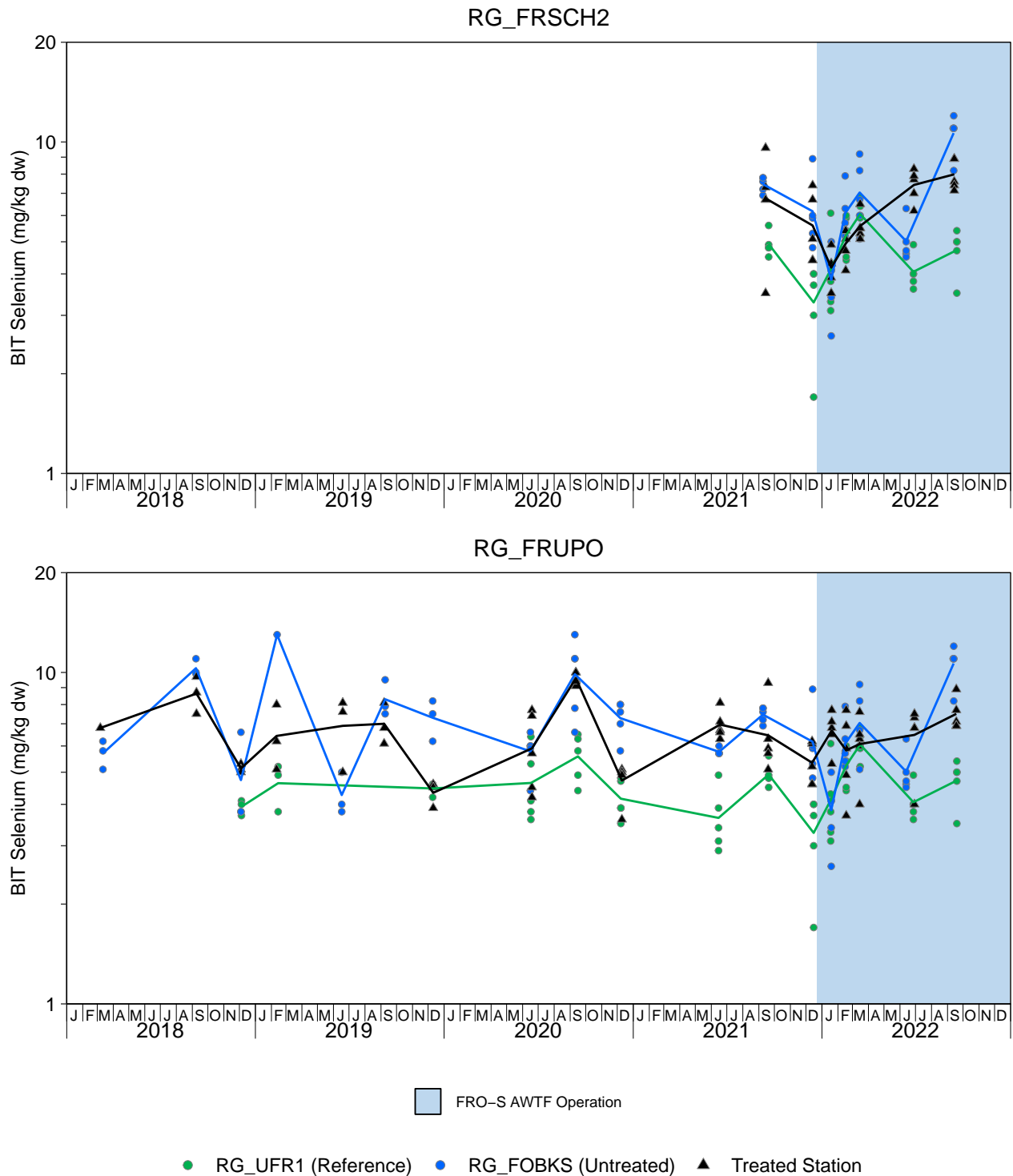


Figure G.55: Benthic Invertebrate Tissue Selenium Concentrations at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2018 to 2022

Notes: Plots are log transformed to match statistical analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

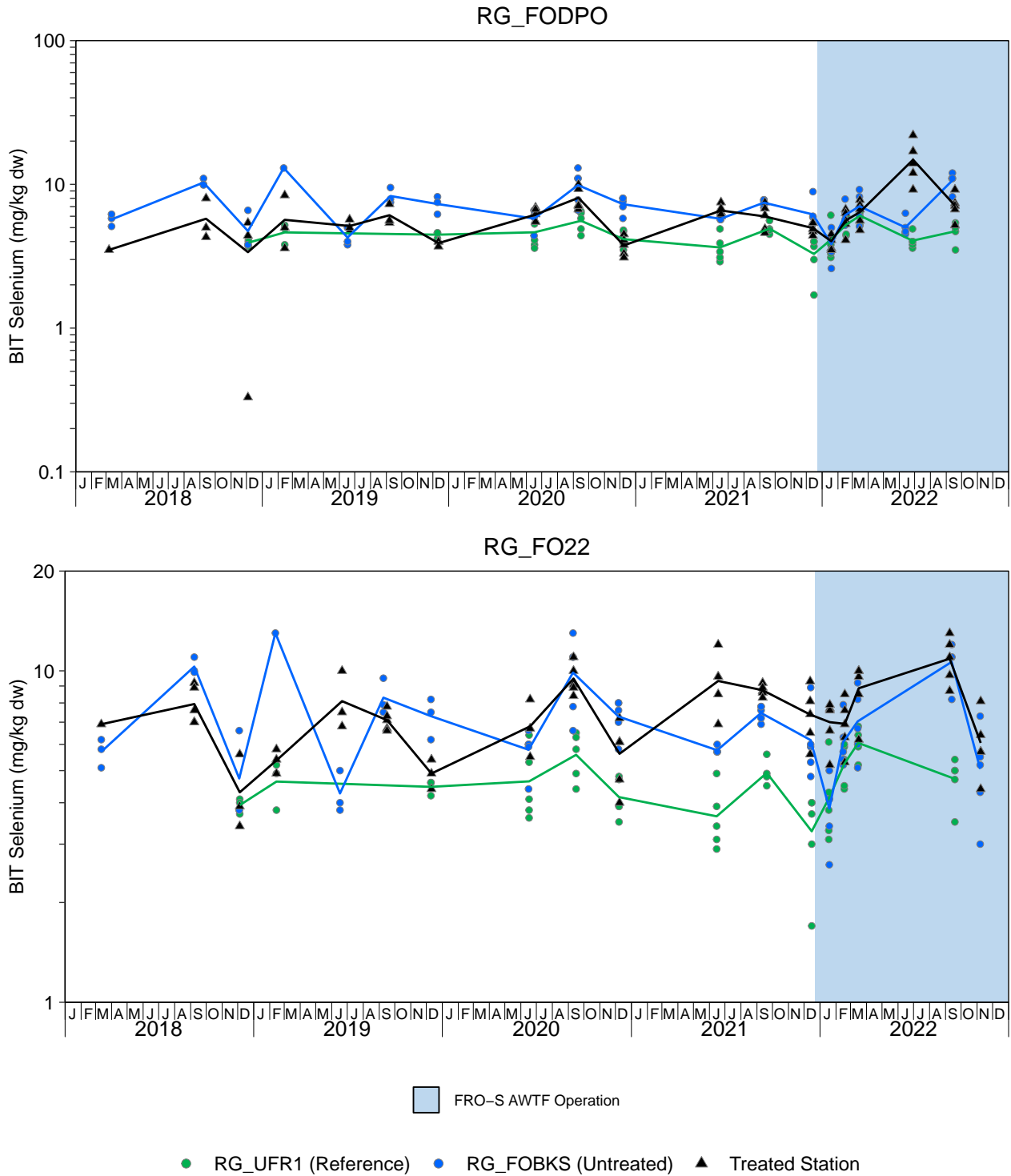
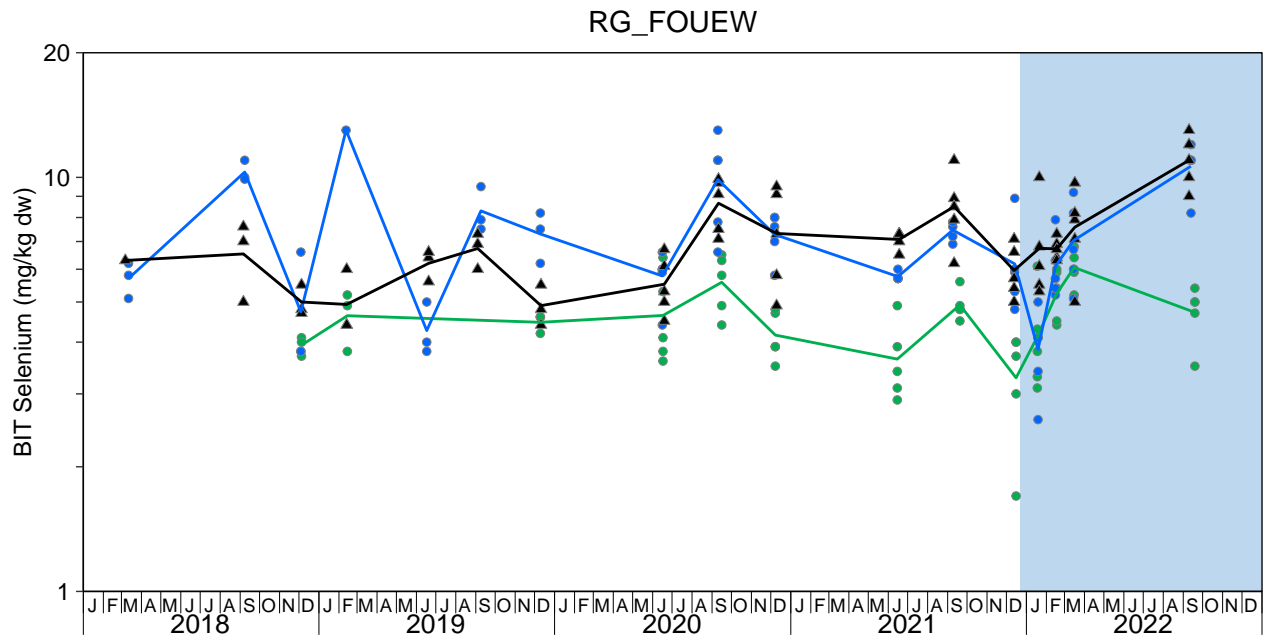


Figure G.55: Benthic Invertebrate Tissue Selenium Concentrations at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2018 to 2022

Notes: Plots are log transformed to match statistical analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.



■ FRO-S AWTF Operation

● RG_UFR1 (Reference) ● RG_FOBKS (Untreated) ▲ Treated Station

Figure G.55: Benthic Invertebrate Tissue Selenium Concentrations at Reference, Immediately Upstream of Treatment, and at Biological Monitoring Areas Downstream of Treatment, FRO LAEMP, 2018 to 2022

Notes: Plots are log transformed to match statistical analysis. RG_FOBKS was the biological monitoring area immediately upstream of the FRO-S AWTF outfall, while RG_SCOUTDS was immediately downstream of the outfall. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

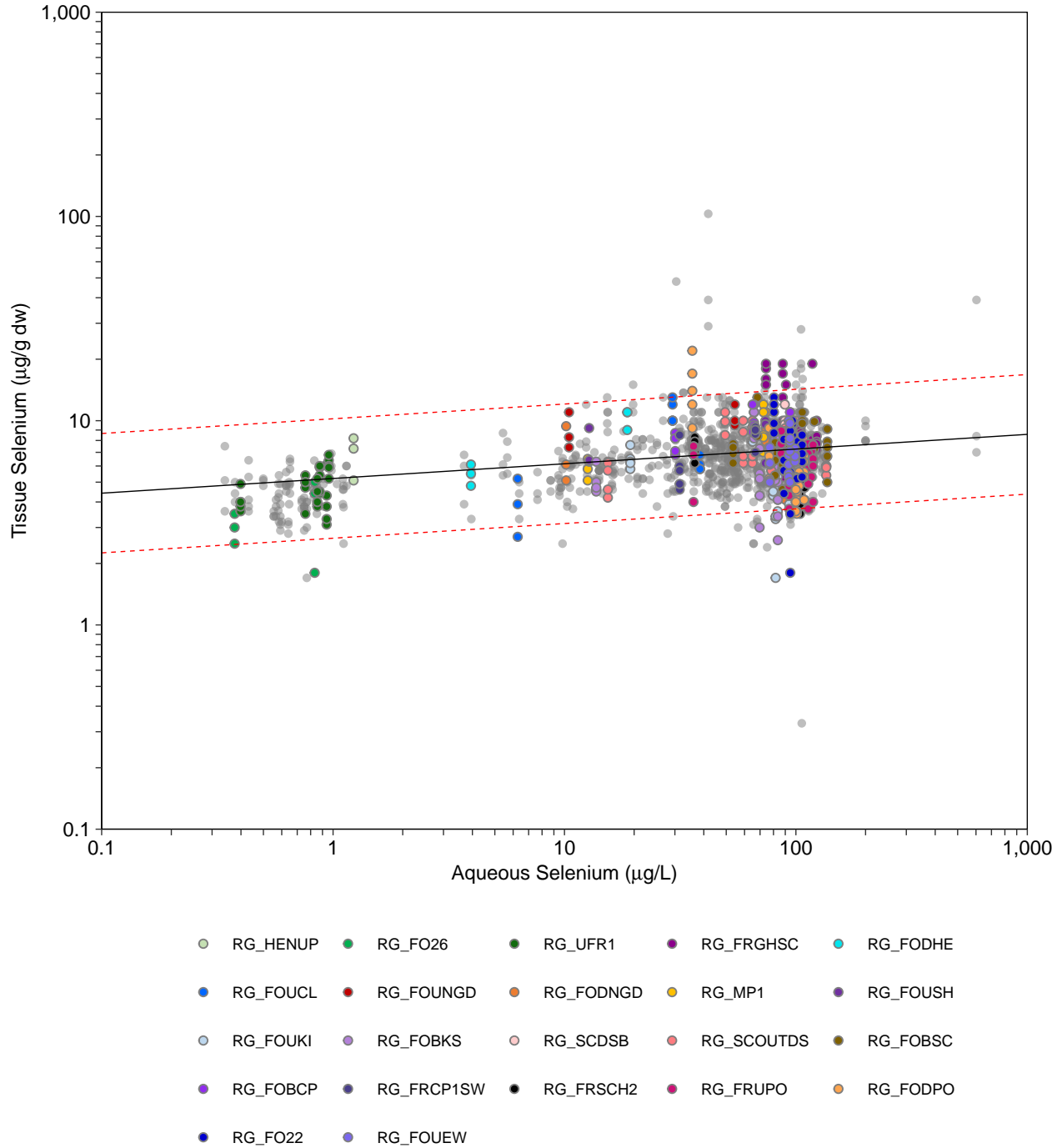


Figure G.56: Observed and Modelled Selenium Concentrations in Benthic Invertebrate Composite Samples Relative to Aqueous Selenium Concentrations at Stations Upstream and Downstream of Fording River Operations, FRO LAEMP, 2012 to 2022

Notes: Mean benthic invertebrate selenium concentrations (solid black line) were estimated using a one-step water to benthic invertebrate selenium accumulation model: $\log_{10}[\text{Se}]_{\text{benthic invertebrate}} = 0.717 + 0.072 \times \log_{10}[\text{Se}]_{\text{aq}}$ (Golder 2020). The 95% prediction limits for a single value from the one-step water to benthic invertebrate selenium accumulation model are plotted as dashed red lines. Grey filled symbols are pre-AWTF commissioning data. Coloured filled symbols are post-AWTF commissioning data, in which reference areas are shown in green. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.1: Statistical Comparison of Benthic Invertebrate Community Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2012 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Abundance (# of Individuals)	RG_SCOUTDS	0.004	0.001	0.954	0.007	0.388	2019	0.954	ns
							2020		
							2021		
	RG_FOBSC	<0.001	0.563	0.014	0.001	0.159	2012	0.014	2.6
							2015		
							2016		
							2017		
							2018		
							2019		
							2020		
							2021		
	RG_FOBCP	0.024	0.302	0.589	<0.001	0.117	2012	0.589	ns
							2015		
							2016		
							2017		
							2018		
							2019		
							2020		
							2021		
	RG_FRCP1SW	0.016	0.031	0.860	0.019	0.300	2017	0.860	ns
							2019		
							2020		
							2021		
	RG_FRUPO	0.091	<0.001	-	-	0.069	2017	0.099	-3.4
							2018	0.940	ns
							2019	0.984	ns
							2020	0.997	ns
							2021	0.736	ns
	RG_FODPO	0.931	<0.001	<0.001	<0.001	0.330	2012	<0.001	-3.2
							2015		
						2016			
						2017			
						2018			
						2019			
						2020			
						2021			
RG_FO22	0.128	<0.001	-	-	0.014	2012	0.963	ns	
						2015	0.040	-4.6	
						2017	0.003	-5.3	
						2018	0.933	ns	
						2019	0.827	ns	
						2020	0.610	ns	
						2021	0.966	ns	
RG_FOU EW	0.106	<0.001	-	-	0.073	2012	0.747	ns	
						2015	0.360	ns	
						2016	0.599	ns	
						2017	0.084	-3.8	
						2018	1.000	ns	
						2019	0.144	ns	
						2020	0.957	ns	
						2021	0.031	-3.6	

P-Value < 0.1.
 MOD < -2 SD.
 MOD > 2 SD.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = (MCTTreated After - MCTUntreated After) - (MCTTreated Before - MCTUntreated Before) / SD, where MCT = Measure of Central Tendency, and SD is the residual standard deviation of the model. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table G.1: Statistical Comparison of Benthic Invertebrate Community Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2012 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts										
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD								
Richness (# of Taxa)	RG_SCOUTDS	0.702	0.588	0.186	0.526	0.567	2019	0.186	ns								
							2020										
							2021										
	RG_FOBSC	0.017	0.467	0.026	0.017	0.615	2012	0.026	1.7								
							2015										
							2016										
							2017										
							2018										
							2019										
	RG_FOBSC	0.017	0.467	0.026	0.017	0.615	2020	0.026	1.7								
							2021										
							RG_FOBBCP			0.001	0.820	0.014	0.005	0.628	2012	0.014	1.8
															2015		
															2016		
															2017		
	2018																
	2019																
	RG_FRCP1SW	0.435	0.451	0.167	0.676	0.347	2020	0.167	ns								
							2021										
							RG_FRUPO			0.250	0.083	0.080	0.265	0.292	2017	0.080	1.7
															2018		
	2019																
	2020																
	RG_FODPO	0.216	<0.001	-	-	0.036	2021	0.036	ns								
2012																	
2015																	
2016																	
2017																	
RG_FODPO	0.216	<0.001	-	-	0.036	2018	0.036	ns									
						2019											
						2020											
						2021											
						2021											
RG_FO22	0.012	0.243	0.052	0.001	0.131	2012	0.052	1.2									
						2015											
						2017											
						2018											
						2019											
RG_FOU EW	0.894	<0.001	0.877	0.016	0.156	2020	0.877	ns									
						2021											
						RG_SCOUTDS			<0.001	0.688	0.085	0.009	0.547	2012	0.085	-1.7	
														2020			
														2021			
						% EPT			RG_FOBSC	<0.001	<0.001	0.677	0.001	0.640	2012	0.677	ns
2015																	
2016																	
2017																	
2018																	
2019																	
2020																	
						2021											

P-Value < 0.1.
 MOD < -2 SD.
 MOD > 2 SD.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = (MCTTreated After - MCTUntreated After)-(MCTTreated Before - MCTUntreated Before)/SD, where MCT = Measure of Central Tendency, and SD is the residual standard deviation of the model. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table G.1: Statistical Comparison of Benthic Invertebrate Community Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2012 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
% EPT	RG_FOBCP	<0.001	0.623	-	-	0.063	2012	0.945	ns
							2015	0.877	ns
							2016	1.000	ns
							2017	1.000	ns
							2018	0.807	ns
							2019	0.197	ns
							2020	0.824	ns
	2021	0.992	ns						
	RG_FRCP1SW	0.011	<0.001	-	-	0.069	2017	0.362	ns
							2019	0.933	ns
							2020	0.444	ns
							2021	0.954	ns
	RG_FRUPO	<0.001	<0.001	-	-	0.096	2017	0.123	ns
							2018	0.830	ns
							2019	0.984	ns
							2020	0.937	ns
	RG_FODPO	0.059	<0.001	-	-	<0.001	2012	0.030	5.1
							2015	0.945	ns
							2016	0.815	ns
							2017	0.011	5.1
							2018	1.000	ns
							2019	0.003	4.7
							2020	0.056	3.3
	2021	1.000	ns						
	RG_FO22	0.059	0.017	0.204	0.427	0.423	2012	0.204	ns
							2015		
							2017		
							2018		
2019									
2020									
2021									
RG_FOUEW	<0.001	0.865	-	-	0.007	2012	1.000	ns	
						2015	1.000	ns	
						2016	0.886	ns	
						2017	0.997	ns	
						2018	1.000	ns	
						2019	0.027	3.7	
						2020	0.862	ns	
2021	0.371	ns							
% Ephemeroptera	RG_SCOUTDS	0.005	0.077	0.902	0.144	0.189	2019	0.902	ns
							2020		
							2021		
	RG_FOBSC	<0.001	<0.001	0.974	<0.001	0.137	2012	0.974	ns
							2015		
							2016		
							2017		
							2018		
							2019		
	2020								
	2021								
	RG_FOBCP	0.006	<0.001	-	-	0.012	2012	0.703	ns
							2015	0.129	ns
							2016	0.721	ns
							2017	0.084	3.5
2018							0.979	ns	
2019							0.886	ns	
2020							0.993	ns	
2021	0.164	ns							

P-Value < 0.1.
 MOD < -2 SD.
 MOD > 2 SD.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = (MCTTreated After - MCTUntreated After)-(MCTTreated Before - MCTUntreated Before)/SD, where MCT = Measure of Central Tendency, and SD is the residual standard deviation of the model. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table G.1: Statistical Comparison of Benthic Invertebrate Community Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2012 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
% Ephemeroptera	RG_FRCP1SW	0.037	<0.001	0.287	0.184	0.135	2017	0.287	ns
							2019		
							2020		
							2021		
	RG_FRUPO	0.023	<0.001	-	-	0.007	2017	0.677	ns
							2018	0.967	ns
							2019	0.739	ns
							2020	0.812	ns
	RG_FODPO	0.010	<0.001	-	-	0.065	2021	0.013	3.9
							2012	1.000	ns
							2015	0.470	ns
							2016	0.998	ns
							2017	0.073	3.9
	RG_FO22	<0.001	<0.001	-	-	0.068	2018	0.448	ns
							2019	1.000	ns
							2020	0.994	ns
							2021	0.445	ns
							2012	0.905	ns
	RG_FOU EW	0.502	<0.001	0.001	<0.001	0.510	2015	0.811	ns
							2016	0.001	3.2
							2017	0.006	5.0
2018							0.285	ns	
2019							0.998	ns	
2020							0.360	ns	
% Plecoptera	RG_SCOU TDS	<0.001	0.003	-	-	0.058	2021	0.004	-4.4
							2019	0.497	ns
							2020	0.059	-2.9
	RG_FOBSC	0.004	0.008	0.281	<0.001	0.112	2012	0.281	ns
							2015		
							2016		
							2017		
							2018		
							2019		
							2020		
	RG_FOB CP	0.002	<0.001	-	-	0.002	2012	0.970	ns
							2015	0.155	ns
							2016	0.994	ns
							2017	0.363	ns
							2018	0.892	ns
							2019	0.508	ns
							2020	0.157	ns
	RG_FRCP1SW	0.412	<0.001	0.888	0.084	0.471	2021	0.888	ns
							2017		
							2019		
							2020		
RG_FRUPO	0.005	<0.001	-	-	0.001	2017	0.013	-4.7	
						2018	0.244	ns	
						2019	0.882	ns	
						2020	0.999	ns	
						2021	0.034	-3.4	
RG_FODPO	0.677	<0.001	-	-	<0.001	2012	0.875	ns	
						2015	0.999	ns	
						2016	0.057	4.6	
						2017	0.236	ns	
						2018	0.123	ns	
						2019	<0.001	5.7	
						2020	0.311	ns	
2021	0.322	ns							

P-Value < 0.1.
 MOD < -2 SD.
 MOD > 2 SD.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = (MCTTreated After - MCTUntreated After)-(MCTTreated Before - MCTUntreated Before)/SD, where MCT = Measure of Central Tendency, and SD is the residual standard deviation of the model. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table G.1: Statistical Comparison of Benthic Invertebrate Community Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2012 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
% Plecoptera	RG_FO22	0.709	<0.001	-	-	0.043	2012	1.000	ns
							2015	1.000	ns
							2017	1.000	ns
							2018	0.861	ns
							2019	0.081	2.7
							2020	0.931	ns
							2021	0.964	ns
	RG_FOUEW	<0.001	<0.001	-	-	<0.001	2012	0.360	ns
							2015	0.998	ns
							2016	1.000	ns
							2017	0.045	-4.2
							2018	0.039	-3.5
							2019	0.039	3.5
							2020	0.044	-3.4
2021	<0.001	-6.8							
% Trichoptera	RG_SCOUDDS	0.027	<0.001	0.970	0.004	0.582	2019	0.970	ns
							2020		
							2021		
	RG_FOBSC	0.010	0.161	-	-	0.042	2012	0.298	ns
							2015	0.973	ns
							2016	0.883	ns
							2017	0.622	ns
							2018	0.427	ns
							2019	0.770	ns
							2020	0.850	ns
	2021	1.000	ns						
	RG_FOBCP	<0.001	<0.001	-	-	0.005	2012	0.949	ns
							2015	0.972	ns
							2016	0.419	ns
							2017	0.996	ns
							2018	0.956	ns
							2019	0.080	2.7
							2020	0.026	3.2
	2021	0.995	ns						
	RG_FRCP1SW	0.865	0.041	0.247	0.003	0.892	2017	0.247	ns
							2019		
							2020		
							2021		
	RG_FRUPO	0.001	<0.001	-	-	0.015	2017	0.287	ns
							2018	0.922	ns
							2019	0.947	ns
							2020	0.034	3.4
							2021	1.000	ns
	RG_FODPO	0.006	0.025	-	-	0.001	2012	0.994	ns
							2015	0.055	-4.7
							2016	0.254	ns
							2017	0.996	ns
							2018	0.147	ns
							2019	1.000	ns
	2020	0.130	ns						
	2021	1.000	ns						
	RG_FO22	0.206	0.149	-	-	0.036	2012	1.000	ns
							2015	0.906	ns
							2017	0.998	ns
							2018	0.932	ns
							2019	0.154	ns
							2020	0.952	ns
2021	0.345	ns							
RG_FOUEW	0.189	0.109	-	-	0.071	2012	0.423	ns	
						2015	0.015	-5.6	
						2016	0.523	ns	
						2017	0.775	ns	
						2018	0.294	ns	
						2019	1.000	ns	
2020	0.892	ns							
2021	0.311	ns							

P-Value < 0.1.
 MOD < -2 SD.
 MOD > 2 SD.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = (MCTTreated After - MCTUntreated After) - (MCTTreated Before - MCTUntreated Before) / SD, where MCT = Measure of Central Tendency, and SD is the residual standard deviation of the model. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table G.1: Statistical Comparison of Benthic Invertebrate Community Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2012 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
% Chironomidae	RG_SCOUTDS	0.548	0.061	0.144	<0.001	0.392	2019	0.144	ns
							2020		
							2021		
	RG_FOBSC	0.187	0.044	0.054	<0.001	0.103	2012	0.054	1.5
							2015		
							2016		
							2017		
							2018		
							2019		
							2020		
	2021								
	RG_FOBCP	0.090	<0.001	-	-	0.032	2012	0.954	ns
							2015	0.994	ns
							2016	0.718	ns
							2017	1.000	ns
							2018	0.330	ns
							2019	0.341	ns
							2020	0.944	ns
	2021	0.637	ns						
	RG_FRCP1SW	0.566	0.098	-	-	0.008	2017	0.199	ns
							2019	0.393	ns
							2020	0.003	4.6
							2021	1.000	ns
	RG_FRUPO	0.261	<0.001	-	-	0.004	2017	<0.001	7.2
							2018	0.011	3.9
							2019	0.014	3.8
							2020	0.158	ns
							2021	0.809	ns
	RG_FODPO	0.124	<0.001	-	-	0.006	2012	0.919	ns
							2015	0.113	ns
							2016	0.004	6.6
							2017	1.000	ns
							2018	0.627	ns
							2019	0.928	ns
	2020	0.998	ns						
	2021	0.300	ns						
RG_FO22	0.061	0.002	-	-	0.003	2012	0.374	ns	
						2015	0.999	ns	
						2017	0.050	3.8	
						2018	0.024	3.2	
						2019	0.017	3.3	
						2020	0.797	ns	
2021	0.014	3.4							
RG_FOUEW	0.272	<0.001	-	-	0.044	2012	0.421	ns	
						2015	0.666	ns	
						2016	0.015	5.6	
						2017	<0.001	7.2	
						2018	0.052	3.3	
						2019	0.083	3.1	
						2020	0.430	ns	
2021	0.018	3.9							
EPT Abundance (# of Organisms / 3 min Kick)	RG_SCOUTDS	0.590	0.012	0.484	0.112	0.429	2019	0.484	ns
							2020		
							2021		
	RG_FOBSC	0.001	0.487	0.041	0.009	0.316	2012	0.041	2.1
							2015		
							2016		
							2017		
							2018		
							2019		
							2020		
	2021								
	RG_FOBCP	0.375	0.342	0.631	0.002	0.164	2012	0.631	ns
							2015		
							2016		
							2017		
2018									
2019									
2020									
2021									

P-Value < 0.1.
 MOD < -2 SD.
 MOD > 2 SD.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = (MCTTreated After - MCTUntreated After)-(MCTTreated Before - MCTUntreated Before)/SD, where MCT = Measure of Central Tendency, and SD is the residual standard deviation of the model. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table G.1: Statistical Comparison of Benthic Invertebrate Community Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2012 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
EPT Abundance (# of Organisms / 3 min Kick)	RG_FRCP1SW	0.101	0.006	0.741	0.032	0.290	2017	0.741	ns
							2019		
							2020		
							2021		
	RG_FRUPO	0.478	<0.001	-	-	0.072	2017	0.100	-0.69
							2018	0.971	ns
							2019	0.961	ns
							2020	1.000	ns
	RG_FODPO	0.496	<0.001	0.012	<0.001	0.141	2012	0.012	-2.2
							2015		
							2016		
							2017		
	RG_FODPO	0.496	<0.001	0.012	<0.001	0.141	2018	0.012	-2.2
							2019		
							2020		
							2021		
	RG_FO22	0.641	<0.001	-	-	0.073	2012	1.000	ns
							2015	0.151	ns
							2017	0.044	-3.9
							2018	0.992	ns
	RG_FO22	0.641	<0.001	-	-	0.073	2019	0.998	ns
							2020	0.987	ns
							2021	0.981	ns
							2021	0.981	ns
RG_FOUEW	0.880	0.002	-	-	0.080	2012	0.881	ns	
						2015	0.567	ns	
						2016	0.873	ns	
						2017	0.173	ns	
RG_FOUEW	0.880	0.002	-	-	0.080	2018	1.000	ns	
						2019	0.851	ns	
						2020	0.999	ns	
						2021	0.036	-3.5	
Ephemeroptera Abundance (# of Organisms / 3 min Kick)	RG_SCOUTDS	0.322	0.040	0.927	0.094	0.436	2019	0.927	ns
							2020		
							2021		
	RG_FOBSC	0.003	0.057	0.033	0.003	0.409	2012	0.033	2.3
							2015		
							2016		
							2017		
							2018		
							2019		
	RG_FOBSC	0.003	0.057	0.033	0.003	0.409	2020	0.033	2.3
							2021		
							2021		
							2021		
							2021		
							2021		
	RG_FOBBCP	0.315	0.008	>0.999	<0.001	0.109	2012	>0.999	ns
							2015		
							2016		
							2017		
							2018		
							2019		
	RG_FRCP1SW	0.083	0.006	0.543	0.002	0.142	2017	0.543	ns
							2019		
							2020		
2021									
RG_FRUPO	0.629	<0.001	0.955	0.006	0.139	2017	0.955	ns	
						2018			
						2019			
						2020			
RG_FRUPO	0.629	<0.001	0.955	0.006	0.139	2021	0.955	ns	
						2021			
						2021			
						2021			
RG_FODPO	0.060	0.020	0.005	<0.001	0.147	2012	0.005	-2.5	
						2015			
						2016			
						2017			
						2018			
						2019			
RG_FODPO	0.060	0.020	0.005	<0.001	0.147	2020	0.005	-2.5	
						2021			
						2021			
						2021			

P-Value < 0.1.
 MOD < -2 SD.
 MOD > 2 SD.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = (MCTTreated After - MCTUntreated After)-(MCTTreated Before - MCTUntreated Before)/SD, where MCT = Measure of Central Tendency, and SD is the residual standard deviation of the model. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table G.1: Statistical Comparison of Benthic Invertebrate Community Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2012 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Ephemeroptera Abundance (# of Organisms / 3 min Kick)	RG_FO22	0.580	<0.001	-	-	0.056	2012	0.590	ns
							2015	0.046	-4.5
							2017	0.580	ns
							2018	1.000	ns
							2019	0.612	ns
							2020	0.950	ns
							2021	0.962	ns
	RG_FOU EW	0.234	0.004	-	-	0.098	2012	0.950	ns
							2015	0.967	ns
							2016	1.000	ns
							2017	0.994	ns
							2018	0.573	ns
							2019	0.909	ns
							2020	0.301	ns
Plecoptera Abundance (# of Organisms / 3 min Kick)	RG_SCOUTDS	0.175	<0.001	0.067	0.462	0.141	2019	0.067	-1.9
							2020		
							2021		
	RG_FOBSC	0.009	0.067	-	-	0.046	2012	1.000	ns
							2015	0.516	ns
							2016	0.212	ns
							2017	0.882	ns
							2018	0.040	3.5
							2019	0.459	ns
							2020	1.000	ns
	2021	0.998	ns						
	RG_FOB CP	0.858	<0.001	-	-	0.035	2012	0.982	ns
							2015	0.936	ns
							2016	0.949	ns
2017							0.722	ns	
2018							0.939	ns	
2019							0.874	ns	
2020							0.464	ns	
2021	0.180	ns							
RG_FRCP1SW	0.150	<0.001	0.695	0.157	0.274	2017	0.695	ns	
						2019			
						2020			
						2021			
RG_FRUPO	0.541	<0.001	-	-	0.021	2017	0.084	-3.5	
						2018	1.000	ns	
						2019	0.717	ns	
						2020	1.000	ns	
						2021	0.421	ns	
RG_FODPO	0.768	<0.001	-	-	0.012	2012	0.301	ns	
						2015	0.970	ns	
						2016	1.000	ns	
						2017	0.563	ns	
						2018	0.009	-4.2	
						2019	0.988	ns	
2020	0.967	ns							
2021	0.071	-3.2							
RG_FO22	0.394	<0.001	-	-	0.030	2012	0.964	ns	
						2015	0.403	ns	
						2017	0.061	-3.7	
						2018	0.872	ns	
						2019	0.656	ns	
						2020	0.983	ns	
2021	0.922	ns							
RG_FOU EW	0.377	<0.001	-	-	0.009	2012	0.307	ns	
						2015	0.688	ns	
						2016	0.873	ns	
						2017	0.036	-4.3	
						2018	0.690	ns	
						2019	0.999	ns	
						2020	0.481	ns	
2021	<0.001	-5.3							

P-Value < 0.1.
 MOD < -2 SD.
 MOD > 2 SD.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = (MCT_{Treated After} - MCT_{Untreated After}) - (MCT_{Treated Before} - MCT_{Untreated Before}) / SD, where MCT = Measure of Central Tendency, and SD is the residual standard deviation of the model. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

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Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts			
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD	
Trichoptera Abundance (# of Organisms / 3 min Kick)	RG_SCOUTDS	0.001	0.280	0.910	<0.001	0.601	2019	0.910	ns	
							2020			
							2021			
		RG_FOBSC	<0.001	0.719	0.058	<0.001	0.240	2012	0.058	1.5
							2015			
							2016			
							2017			
							2018			
							2019			
							2020			
							2021			
		RG_FOBBCP	<0.001	0.063	0.516	<0.001	0.269	2012	0.516	ns
							2015			
							2016			
							2017			
							2018			
							2019			
							2020			
						2021				
	RG_FRCP1SW	0.011	0.321	0.545	0.001	0.135	2017	0.545	ns	
						2019				
						2020				
						2021				
	RG_FRUPO	0.005	0.343	0.811	0.026	0.158	2017	0.811	ns	
						2018				
						2019				
						2020				
						2021				
	RG_FODPO	0.019	<0.001	-	-	0.023	2012	0.617	ns	
							2015	0.038	-5.0	
							2016	0.136	ns	
							2017	0.274	ns	
							2018	0.959	ns	
							2019	0.403	ns	
							2020	0.941	ns	
							2021	0.192	ns	
	RG_FO22	0.087	<0.001	0.150	0.005	0.128	2012	0.150	ns	
							2015			
							2017			
							2018			
							2019			
							2020			
							2021			
	RG_FOU EW	0.056	0.001	0.016	<0.001	0.148	2012	0.016	-2.8	
							2015			
							2016			
							2017			
							2018			
							2019			
							2020			
							2021			
Baetidae Abundance (# of Organisms / 3 min Kick)	RG_SCOUTDS	<0.001	0.038	0.613	0.301	0.782	2019	0.613	ns	
							2020			
							2021			
		RG_FOBSC	<0.001	0.011	<0.001	0.005	0.289	2012	<0.001	4.1
								2015		
								2016		
								2017		
								2018		
								2019		
								2020		
								2021		
		RG_FOBBCP	0.261	<0.001	-	-	<0.001	2012	0.131	ns
							2015	0.254	ns	
							2016	0.500	ns	
							2017	0.082	3.6	
							2018	<0.001	7.3	
							2019	0.991	ns	
							2020	0.987	ns	
							2021	0.001	4.4	

P-Value < 0.1.
 MOD < -2 SD.
 MOD > 2 SD.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = (MCTTreated After - MCTUntreated After)-(MCTTreated Before - MCTUntreated Before)/SD, where MCT = Measure of Central Tendency, and SD is the residual standard deviation of the model. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

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Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Baetidae Abundance (# of Organisms / 3 min Kick)	RG_FRCP1SW	0.815	0.260	-	-	0.095	2017	0.007	5.1
							2019	0.424	ns
							2020	0.188	ns
							2021	0.017	3.7
	RG_FRUPO	<0.001	0.553	-	-	<0.001	2017	0.002	5.9
							2018	0.006	4.3
							2019	0.998	ns
							2020	0.940	ns
	RG_FODPO	<0.001	<0.001	-	-	<0.001	2021	0.042	3.2
							2012	0.257	ns
							2015	<0.001	20
							2016	0.235	ns
							2017	<0.001	7.5
							2018	0.010	4.2
	RG_FO22	<0.001	0.001	-	-	0.002	2019	0.838	ns
							2020	0.059	3.3
							2021	0.009	4.2
							2012	0.001	6.6
							2015	<0.001	9.4
							2017	<0.001	6.9
	RG_FOUEW	<0.001	0.038	-	-	0.001	2018	<0.001	7.7
							2019	0.003	4.0
							2020	0.004	3.9
							2021	<0.001	5.2
2012							0.317	ns	
2015							<0.001	8.3	
Ephemerillidae Abundance (# of Organisms / 3 min Kick)	RG_SCOUTDS	0.724	<0.001	0.499	0.144	0.467	2017	0.499	ns
							2019		
							2021		
	RG_FOBSC	0.018	0.651	-	-	0.022	2012	0.957	ns
							2015	0.689	ns
							2016	0.061	4.6
							2017	0.053	4.1
							2018	0.006	4.5
							2019	0.102	ns
							2020	0.500	ns
	RG_FOBCP	0.099	0.211	-	-	<0.001	2021	0.927	ns
							2012	0.024	-5.0
							2015	0.998	ns
							2016	0.424	ns
							2017	0.007	4.9
							2018	<0.001	5.3
							2019	0.304	ns
	RG_FRCP1SW	0.525	<0.001	0.739	0.028	0.108	2020	0.739	ns
							2017		
							2019		
							2021		
	RG_FRUPO	0.794	0.609	0.653	0.036	0.675	2017	0.653	ns
							2018		
							2019		
2020									
2021									
RG_FODPO	0.009	0.114	-	-	0.002	2012	<0.001	-9.0	
						2015	0.388	ns	
						2016	0.985	ns	
						2017	0.850	ns	
						2018	0.469	ns	
						2019	0.628	ns	
						2020	0.130	ns	
2021	0.318	ns							

P-Value < 0.1.
 MOD < -2 SD.
 MOD > 2 SD.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = (MCTTreated After - MCTUntreated After)-(MCTTreated Before - MCTUntreated Before)/SD, where MCT = Measure of Central Tendency, and SD is the residual standard deviation of the model. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

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Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts				
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD		
Ephemeroptera Abundance (# of Organisms / 3 min Kick)	RG_FO22	0.002	0.468	-	-	<0.001	2012	0.003	-6.2		
							2015	<0.001	-7.1		
							2017	0.105	ns		
							2018	1.000	ns		
							2019	0.051	-2.9		
							2020	0.781	ns		
	RG_FOUEW	0.242	0.313	-	-	0.008	2021	0.815	ns		
							2012	0.181	ns		
							2015	0.150	ns		
							2016	0.762	ns		
							2017	0.615	ns		
							2018	0.836	ns		
	Heptageniidae Abundance (# of Organisms / 3 min Kick)	RG_SCOUTDS	0.156	0.256	0.819	0.237	0.249	2019	0.819	ns	
		RG_FOBSC	<0.001	0.044	0.091	<0.001	0.129	2020			0.091
2021											
2012											
2015											
2016											
2017											
RG_FOBCP		0.085	0.005	0.695	<0.001	0.303	2018	0.695	ns		
							2019				
							2020				
							2021				
							2012				
RG_FRCP1SW		0.027	0.006	0.847	<0.001	0.266	2017	0.847	ns		
							2019				
	2020										
	2021										
RG_FRUPO	0.059	<0.001	-	-	0.001	2017	0.115	ns			
						2018	1.000	ns			
						2019	0.590	ns			
						2020	0.998	ns			
						2021	0.034	3.4			
RG_FODPO	0.107	<0.001	0.005	0.039	0.930	2012	0.005	-2.6			
						2015					
						2016					
						2017					
						2018					
						2019					
RG_FO22	0.377	<0.001	-	-	0.008	2020	0.986	-4.1			
						2021					
						2012					
						2015					
						2017					
						2018					
RG_FOUEW	0.024	0.002	-	-	0.044	2019	0.978	ns			
						2020					
						2012					
						2015					
						2016					
						2017					
2018											
2019	0.885	ns									
2020	0.132	ns									
2021	0.999	ns									

P-Value < 0.1.
 MOD < -2 SD.
 MOD > 2 SD.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = (MCTTreated After - MCTUntreated After) - (MCTTreated Before - MCTUntreated Before) / SD, where MCT = Measure of Central Tendency, and SD is the residual standard deviation of the model. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table G.1: Statistical Comparison of Benthic Invertebrate Community Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2012 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Chironomidae Abundance (# of Organisms / 3 min Kick)	RG_SCOUTDS	0.403	0.032	0.169	0.001	0.681	2019	0.169	ns
							2020		
							2021		
	RG_FOBSC	0.038	0.349	0.004	<0.001	0.139	2012	0.004	2.6
							2015		
							2016		
							2017		
							2018		
							2019		
							2020		
							2021		
	RG_FOBCP	0.807	<0.001	0.375	<0.001	0.261	2012	0.375	ns
							2015		
							2016		
							2017		
							2018		
							2019		
							2020		
							2021		
	RG_FRCP1SW	0.153	0.028	-	-	0.002	2017	0.076	3.5
							2019	0.352	ns
							2020	0.002	4.9
							2021	0.980	ns
	RG_FRUPO	0.316	<0.001	-	-	0.062	2017	0.386	ns
							2018	0.155	ns
							2019	0.077	2.9
							2020	0.515	ns
							2021	0.971	ns
RG_FODPO	0.247	<0.001	0.716	0.003	0.109	2012	0.716	ns	
						2015			
						2016			
						2017			
						2018			
						2019			
						2020			
						2021			
RG_FO22	0.070	<0.001	-	-	0.025	2012	0.439	ns	
						2015	0.942	ns	
						2017	0.980	ns	
						2018	0.316	ns	
						2019	0.247	ns	
						2020	0.973	ns	
						2021	0.078	2.7	
RG_FOU EW	0.469	<0.001	0.105	0.002	0.369	2012	0.105	ns	
						2015			
						2016			
						2017			
						2018			
						2019			
						2020			
						2021			

P-Value < 0.1.
 MOD < -2 SD.
 MOD > 2 SD.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = (MCTTreated After - MCTUntreated After) - (MCTTreated Before - MCTUntreated Before) / SD, where MCT = Measure of Central Tendency, and SD is the residual standard deviation of the model. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table G.2: Statistical Comparison of Benthic Invertebrate Productivity Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2012 to 2022

Parameter	Station	ANOVA MODEL					Post-Hoc Contrasts		
		BA	Treated	BA x Treated	BA (Year)	BA (Year) x Treated	Before Year	P-Value	MOD
Total Density (org/m ²)	RG_SCOUTDS	<0.001	<0.001	<0.001	0.036	0.117	2019	<0.001	2.4
							2020		
							2021		
	RG_FOBSC	0.002	0.022	-	-	0.048	2017	0.001	2.4
							2018	0.003	2.2
							2019	0.215	ns
							2020	0.242	ns
							2021	0.538	ns
	RG_FOBBCP	0.176	<0.001	-	-	<0.001	2017	0.021	1.8
							2018	0.017	1.9
							2019	0.679	ns
							2020	0.999	ns
							2021	0.372	ns
	RG_FRCP1SW	0.052	0.004	-	-	<0.001	2017	0.006	2.1
							2019	0.066	1.5
							2020	0.978	ns
							2021	0.124	ns
	RG_FRUPO	0.111	<0.001	-	-	<0.001	2017	0.742	ns
							2018	0.002	2.3
							2019	0.057	1.6
							2020	0.79	ns
RG_FO22	0.250	<0.001	0.246	<0.001	0.292	2012	0.246	ns	
						2015			
						2017			
						2018			
						2019			
						2020			
Total Biomass (g/m ²)	RG_SCOUTDS	0.086	<0.001	<0.001	0.563	0.186	2019	<0.001	2.2
							2020		
							2021		
	RG_FOBSC	0.114	0.567	-	-	0.001	2017	<0.001	2.5
							2018	0.009	2.0
							2019	0.311	ns
							2020	0.827	ns
							2021	0.996	ns
	RG_FOBBCP	0.039	0.005	-	-	<0.001	2017	<0.001	2.6
							2018	0.003	2.2
							2019	0.991	ns
							2020	0.731	ns
							2021	1	ns
	RG_FRCP1SW	0.224	0.084	-	-	<0.001	2017	<0.001	4.1
							2019	0.195	ns
							2020	0.684	ns
							2021	0.992	ns
	RG_FRUPO	0.028	<0.001	-	-	<0.001	2017	0.019	1.8
							2018	<0.001	2.6
							2019	0.099	1.4
							2020	0.544	ns
RG_FO22	0.119	<0.001	0.079	<0.001	0.338	2012	0.079	0.87	
						2015			
						2017			
						2018			
						2019			
						2020			
2021									

P-Value < 0.1.
 MOD < -2 SD.
 MOD > 2 SD.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = (MCT_{Treated After} - MCT_{Untreated After}) - (MCT_{Treated Before} - MCT_{Untreated Before}) / SD, where MCT = Measure of Central Tendency, and SD is the residual standard deviation of the model. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table G.3: Selenium Concentration in Composite-taxa Benthic Invertebrate Tissue, FRO LAEMP, 2022

Biological Monitoring Area		Composite-taxa Tissue Selenium (µg/g dw)																			
		January					February					March					June				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Reference	RG_HENUP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RG_FO26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.50	3.50	3.00	-	-
	RG_UFR1 ^a	4.30	3.10	6.10	3.30	3.80	4.40	5.90	6.00	4.50	5.40	6.40	6.00	6.80	5.20	5.90	4.00	3.60	3.80	4.90	4.00
	RG_FRGHSC	6.60	19.0	8.10	8.10	6.70	8.40	10.0	7.90	7.20	7.70	7.10	9.30	9.00	8.70	10.0	18.0	16.0	19.0	9.50	15.0
	RG_FODHE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.50	6.10	4.80	-	-
	RG_FOUCL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.20	3.90	2.70	-	-
	RG_FOUNGD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.0	7.40	8.30	-	-
	RG_FODNGD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.10	9.40	6.10	-	-
	RG_MP1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.80	6.50	5.10	-	-
	RG_FOUSH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.20	6.30	6.40	-	-
	RG_FOUKI	3.30	3.40	4.60	1.70	5.00	4.30	6.60	4.30	4.50	6.10	6.30	9.10	3.60	5.30	6.70	6.50	6.30	5.80	7.60	6.20
	RG_FOBKS	2.60	4.10	4.10	3.40	5.00	7.90	5.20	6.30	5.40	5.70	6.70	6.00	5.10	9.20	8.20	5.00	6.30	4.60	4.50	4.70
	RG_SCOUTDS	7.50	8.20	6.80	6.10	6.30	6.00	6.00	5.40	5.90	6.60	6.80	5.40	10.0	7.90	8.40	6.30	6.20	5.70	4.20	4.60
	RG_FOBSC	6.00	7.60	7.10	8.70	7.90	5.00	7.90	7.40	6.70	9.10	7.20	7.30	9.90	7.30	7.30	6.20	7.20	6.90	7.70	7.40
	RG_FOBCP	-	-	-	-	-	-	-	-	-	-	9.10	8.30	9.60	11.0	11.0	8.20	8.70	6.80	7.10	8.20
	RG_FRCP1SW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.60	8.50	6.00	4.90	5.70
	RG_FRSCH2	3.90	4.30	4.30	3.50	4.90	5.40	4.70	5.40	4.10	5.10	5.50	6.50	5.30	5.50	5.10	7.70	6.20	8.30	7.00	7.90
	RG_FRUPO	6.80	7.10	6.50	5.30	7.70	5.90	3.70	6.90	4.90	7.70	7.60	6.30	6.50	6.00	4.00	7.30	7.50	6.80	4.00	6.80
	RG_FODPO	3.60	4.40	4.10	4.50	3.50	6.70	6.30	4.10	5.60	5.30	7.80	7.20	4.80	5.60	6.70	9.20	12.0	14.0	17.0	22.0
	RG_FO22	7.70	7.60	7.90	5.20	6.60	7.60	6.30	6.90	5.30	8.50	10.0	6.20	9.60	8.50	10.0	-	-	-	-	-
	RG_FOUJEW	6.80	5.50	10.0	6.10	5.30	6.40	6.90	6.30	7.30	6.70	7.10	5.00	9.70	7.90	8.20	-	-	-	-	-

- Value > EVWQP Level 1 benchmark of 11 mg/kg dw for dietary effects to juvenile fish (Teck 2014).
- Value > EVWQP Level 2 benchmark of 18 mg/kg dw for dietary effects to juvenile fish (Teck 2014).
- Value > EVWQP Level 3 benchmark of 26 mg/kg dw for dietary effects to juvenile fish (Teck 2014).
- Value > EVWQP Level 1 benchmark of 13 mg/kg dw for effects to benthic invertebrates (Teck 2014).
- Value > EVWQP Level 2 benchmark of 20 mg/kg dw for effects to benthic invertebrates (Teck 2014).
- Value > EVWQP Level 3 benchmark of 27 mg/kg dw for effects to benthic invertebrates (Teck 2014).
- Value > EVWQP Level 1 benchmark of 15 mg/kg dw for dietary effects to juvenile birds (Teck 2014).
- Value > EVWQP Level 2 benchmark of 22 mg/kg dw for dietary effects to juvenile birds (Teck 2014).
- Value > EVWQP Level 3 benchmark of 41 mg/kg dw for dietary effects to juvenile birds (Teck 2014).
- Value > upper limit of normal range of (8.74 mg/kg dw; Minnow 2020).

Note: '-' indicates sample that was not taken because it was not a part of the sampling design and/or because of drying and/or ice conditions. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO. Annelids were contained in composite samples collected from RG_FRGHSC (replicates 1, 2, 3, and 5), RG_FRCP1SW (replicate 2), and RG_FODPO (replicates 3, 4, and 5) in June, and RG_FRGHSC (replicates 1, 2, and 4) in September.

^a RG_UFR1 was used as a reference location in December when there was no access to RG_FO26 or RG_HENUP.

Table G.3: Selenium Concentration in Composite-taxa Benthic Invertebrate Tissue, FRO LAEMP, 2022

Biological Monitoring Area		Composite-taxa Tissue Selenium (µg/g dw)																	
		August			September					November					December				
		1	2	3	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Reference	RG_HENUP	-	-	-	8.20	7.30	5.10	-	-	-	-	-	-	-	-	-	-	-	-
	RG_FO26	-	-	-	4.40	5.00	1.80	-	-	-	-	-	-	-	-	-	-	-	-
	RG_UFR1 ^a	-	-	-	5.40	5.00	4.70	3.50	5.00	-	-	-	-	-	4.50	3.90	3.80	5.20	4.00
	RG_FRGHSC	-	-	-	19.0	13.0	5.30	17.0	10.0	-	-	-	-	-	15.0	7.90	7.90	5.80	10.0
	RG_FODHE	-	-	-	9.00	11.0	11.0	-	-	-	-	-	-	-	-	-	-	-	-
	RG_FOUCL	-	-	-	10.0	12.0	13.0	10.0	10.0	-	-	-	-	-	5.80	6.81	6.10	5.80	5.80
	RG_FOUNGD	-	-	-	7.10	9.80	9.50	10.0	12.0	-	-	-	-	-	7.90	7.00	5.20	7.20	6.70
	RG_FODNGD	-	-	-	9.20	7.40	11.0	9.20	7.90	-	-	-	-	-	4.10	8.20	7.10	7.20	6.00
	RG_MP1	-	-	-	7.00	8.50	12.0	11.0	8.30	-	-	-	-	-	3.60	5.40	5.40	5.10	5.10
	RG_FOUSH	-	-	-	10.0	9.60	6.20	-	-	-	-	-	-	-	5.70	6.10	6.50	6.70	6.40
	RG_FOUKI	-	-	-	7.90	6.50	9.30	6.40	7.90	-	-	-	-	-	5.70	3.90	5.30	4.30	5.80
	RG_FOBKS	-	-	-	11.0	11.0	12.0	8.20	11.0	5.50	3.00	5.20	4.30	7.30	-	-	-	-	-
	RG_SCOUTDS	11.0	9.90	8.50	9.30	10.0	6.20	8.80	6.70	6.20	6.20	5.70	8.90	6.30	7.80	9.20	7.50	7.40	8.90
	RG_FOBSC	-	-	-	13.0	8.40	11.0	10.0	9.70	5.90	6.80	4.60	6.80	6.10	5.40	7.20	7.80	7.00	6.40
	RG_FOBSP	-	-	-	9.80	12.0	9.50	8.80	12.0	-	-	-	-	-	-	-	-	-	-
	RG_FRCP1SW	-	-	-	7.00	9.30	9.00	8.60	9.00	-	-	-	-	-	-	-	-	-	-
	RG_FRSCH2	-	-	-	8.90	7.60	7.40	8.90	7.14	-	-	-	-	-	3.60	6.30	5.20	6.40	6.40
	RG_FRUPO	-	-	-	7.10	6.90	6.90	7.70	8.90	-	-	-	-	-	5.70	4.80	3.70	5.50	4.30
	RG_FODPO	-	-	-	7.40	9.20	5.20	7.10	6.70	-	-	-	-	-	5.20	4.60	5.30	4.00	3.60
	RG_FO22	-	-	-	13.0	8.70	11.0	12.0	9.70	5.70	8.10	6.40	5.70	4.40	9.10	8.90	5.60	1.80	3.50
	RG_FOUJEW	-	-	-	13.0	12.0	9.00	10.0	11.0	-	-	-	-	-	5.10	6.10	6.20	5.00	7.40

- Value > EVWQP Level 1 benchmark of 11 mg/kg dw for dietary effects to juvenile fish (Teck 2014).
- Value > EVWQP Level 2 benchmark of 18 mg/kg dw for dietary effects to juvenile fish (Teck 2014).
- Value > EVWQP Level 3 benchmark of 26 mg/kg dw for dietary effects to juvenile fish (Teck 2014).
- Value > EVWQP Level 1 benchmark of 13 mg/kg dw for effects to benthic invertebrates (Teck 2014).
- Value > EVWQP Level 2 benchmark of 20 mg/kg dw for effects to benthic invertebrates (Teck 2014).
- Value > EVWQP Level 3 benchmark of 27 mg/kg dw for effects to benthic invertebrates (Teck 2014).
- Value > EVWQP Level 1 benchmark of 15 mg/kg dw for dietary effects to juvenile birds (Teck 2014).
- Value > EVWQP Level 2 benchmark of 22 mg/kg dw for dietary effects to juvenile birds (Teck 2014).
- Value > EVWQP Level 3 benchmark of 41 mg/kg dw for dietary effects to juvenile birds (Teck 2014).
- Value > upper limit of normal range of (8.74 mg/kg dw; Minnow 2020).

Note: '-' indicates sample that was not taken because it was not a part of the sampling design and/or because of drying and/or ice conditions. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO. Annelids were contained in composite samples collected from RG_FRGHSC (replicates 1, 2, 3, and 5), RG_FRCP1SW (replicate 2), and RG_FODPO (replicates 3, 4, and 5) in June, and RG_FRGHSC (replicates 1, 2, and 4) in September.

^a RG_UFR1 was used as a reference location in December when there was no access to RG_FO26 or RG_HENUP.

Table G.4: Statistical Comparison of Benthic Invertebrate Tissue Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Treated Station	ANOVA MODEL					Post-Hoc Comparisons				
	BA	Treated	BA x Treated	BA (Time Group)	BA (Time Group) x Treated	Total number of before versus after comparisons	Number of significant comparisons	Period 1	Period 2	Magnitude of Difference
RG_SCOUTDS	<0.001	0.001	0.459	<0.001	<0.001	54	7	2019_09	2022_01	NS
									2022_02	NS
									2022_03	NS
									2022_06	NS
									2022_09	-49
								2022_11	NS	
								2019_12	2022_01	92
									2022_02	NS
									2022_03	NS
									2022_06	NS
									2022_09	NS
								2020_06	2022_01	79
									2022_02	NS
									2022_03	NS
									2022_06	NS
									2022_09	NS
								2020_09	2022_01	124
									2022_02	NS
									2022_03	NS
									2022_06	NS
									2022_09	NS
								2020_11	2022_01	NS
									2022_02	NS
									2022_03	NS
									2022_06	NS
									2022_09	-55
								2020_12	2022_01	136
									2022_02	NS
									2022_03	NS
									2022_06	NS
									2022_09	NS
								2021_06	2022_01	NS
									2022_02	NS
									2022_03	NS
									2022_06	NS
									2022_09	NS
								2021_09	2022_01	NS
									2022_02	NS
									2022_03	NS
									2022_06	NS
									2022_09	NS
								2021_12	2022_01	75
2022_02	NS									
2022_03	NS									
2022_06	NS									
2022_09	NS									
2022_11	NS									

- P-Value for relevant BACI term < 0.1.
- Increase in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25 %.
- Decrease in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table G.4: Statistical Comparison of Benthic Invertebrate Tissue Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Treated Station	ANOVA MODEL					Post-Hoc Comparisons										
	BA	Treated	BA x Treated	BA (Time Group)	BA (Time Group) x Treated	Total number of before versus after comparisons	Number of significant comparisons	Period 1	Period 2	Magnitude of Difference						
RG_FOBSC	<0.001	<0.001	0.558	<0.001	<0.001	72	8	2018_09	2022_01	133						
									2022_02	NS						
									2022_03	NS						
									2022_06	NS						
									2022_09	NS						
								2018_12	2022_01	NS						
									2022_02	NS						
									2022_03	NS						
									2022_06	NS						
									2022_09	-46						
								2019_06	2022_01	NS						
									2022_02	NS						
									2022_03	NS						
									2022_06	NS						
									2022_09	NS						
								2019_09	2022_01	NS						
									2022_02	NS						
									2022_03	NS						
									2022_06	NS						
									2022_09	NS						
								2019_12	2022_01	112						
									2022_02	NS						
									2022_03	NS						
									2022_06	NS						
									2022_09	NS						
								2020_06	2022_01	112						
									2022_02	NS						
									2022_03	NS						
									2022_06	NS						
									2022_09	NS						
								2020_09	2022_01	80						
									2022_02	NS						
									2022_03	NS						
									2022_06	NS						
									2022_09	NS						
								2020_11	2022_01	NS						
					2022_02				NS							
					2022_03				NS							
					2022_06				NS							
					2022_09				NS							
					2020_12			2022_01	83							
								2022_02	NS							
								2022_03	NS							
								2022_06	NS							
								2022_09	NS							
					2021_06			2022_01	79							
								2022_02	NS							
								2022_03	NS							
								2022_06	NS							
								2022_09	NS							
					2021_09			2022_01	NS							
								2022_02	NS							
								2022_03	NS							
								2022_06	NS							
								2022_09	-46							
					2021_12			2022_01	NS							
								2022_02	NS							
								2022_03	NS							
								2022_06	NS							
								2022_09	NS							
											<0.001				2022_11	NS

- P-Value for relevant BACI term < 0.1.
- Increase in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25 %.
- Decrease in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table G.4: Statistical Comparison of Benthic Invertebrate Tissue Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Treated Station	ANOVA MODEL					Post-Hoc Comparisons				
	BA	Treated	BA x Treated	BA (Time Group)	BA (Time Group) x Treated	Total number of before versus after comparisons	Number of significant comparisons	Period 1	Period 2	Magnitude of Difference
RG_FOBKP	0.003	0.004	0.064	<0.001	<0.001	30	1	2018_09	2022_03	NS
									2022_06	NS
									2022_09	NS
								2018_12	2022_03	NS
									2022_06	NS
									2022_09	-66
								2019_06	2022_03	NS
									2022_06	NS
									2022_09	NS
								2019_09	2022_03	NS
									2022_06	NS
									2022_09	NS
								2020_06	2022_03	NS
									2022_06	NS
									2022_09	NS
								2020_09	2022_03	NS
									2022_06	NS
									2022_09	NS
								2020_12	2022_03	NS
									2022_06	NS
									2022_09	NS
								2021_06	2022_03	NS
									2022_06	NS
									2022_09	NS
2021_09	2022_03	NS								
	2022_06	NS								
	2022_09	NS								
2021_12	2022_03	NS								
	2022_06	NS								
	2022_09	NS								
RG_FRCP1SW	0.218	0.007	0.061	0.006	0.005	12	2	2019_06	2022_06	NS
									2022_09	NS
								2019_09	2022_06	NS
									2022_09	NS
								2020_06	2022_06	-68
									2022_09	-78
								2020_09	2022_06	NS
									2022_09	NS
								2021_06	2022_06	NS
									2022_09	NS
								2021_09	2022_06	NS
									2022_09	NS
2021_12	2022_06	NS								
	2022_09	NS								
RG_FRSCH2	0.234	0.159	0.418	<0.001	0.001	10	2	2021_09	2022_01	NS
									2022_02	NS
									2022_03	NS
									2022_06	72
								2021_12	2022_09	NS
									2022_01	NS
									2022_02	NS
									2022_03	NS
									2022_06	64
									2022_09	NS

- P-Value for relevant BACI term < 0.1.
- Increase in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.
- Decrease in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated, Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table G.4: Statistical Comparison of Benthic Invertebrate Tissue Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Treated Station	ANOVA MODEL					Post-Hoc Comparisons				
	BA	Treated	BA x Treated	BA (Time Group)	BA (Time Group) x Treated	Total number of before versus after comparisons	Number of significant comparisons	Period 1	Period 2	Magnitude of Difference
RG_FRUPO	0.209	0.287	0.050	<0.001	<0.001	55	11	2018_09	2022_01	112
									2022_02	NS
									2022_03	NS
									2022_06	NS
								2018_12	2022_09	NS
									2022_01	NS
									2022_02	NS
									2022_03	NS
								2019_06	2022_06	NS
									2022_09	NS
									2022_01	NS
									2022_02	NS
								2019_09	2022_03	NS
									2022_06	NS
									2022_09	NS
									2022_01	NS
								2019_12	2022_02	NS
									2022_03	NS
									2022_06	197
									2022_09	113
								2020_06	2022_01	77
									2022_02	NS
									2022_03	NS
									2022_06	NS
								2020_09	2022_09	NS
									2022_01	77
									2022_02	NS
									2022_03	NS
								2020_12	2022_06	NS
									2022_09	NS
									2022_01	173
									2022_02	NS
								2021_06	2022_03	NS
									2022_06	96
									2022_09	NS
									2022_01	NS
								2021_09	2022_02	NS
									2022_03	NS
									2022_06	NS
									2022_09	NS
								2021_12	2022_01	108
									2022_02	NS
									2022_03	NS
									2022_06	NS
								2022_09	2022_09	NS
									2022_01	101
									2022_02	NS
									2022_03	NS
RG_FODPO	0.105	0.005	<0.001	<0.001	<0.001	55	10	2018_09	2022_01	NS
									2022_02	NS
									2022_03	NS
									2022_06	428
								2018_12	2022_09	NS
									2022_01	NS
									2022_02	NS
									2022_03	NS
								2019_06	2022_06	556
									2022_09	NS
									2022_01	NS
									2022_02	NS
2019_09	2022_03	NS								
	2022_06	NS								
	2022_09	NS								
	2022_01	NS								
2019_12	2022_02	NS								
	2022_03	NS								
	2022_06	290								
	2022_09	NS								
2022_09	2022_01	NS								
	2022_02	NS								
	2022_03	NS								
	2022_06	431								
2022_09	NS									

- P-Value for relevant BACI term < 0.1.
- Increase in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.
- Decrease in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated, Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table G.4: Statistical Comparison of Benthic Invertebrate Tissue Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Treated Station	ANOVA MODEL					Post-Hoc Comparisons				
	BA	Treated	BA x Treated	BA (Time Group)	BA (Time Group) x Treated	Total number of before versus after comparisons	Number of significant comparisons	Period 1	Period 2	Magnitude of Difference
RG_FODPO	0.105	0.005	<0.001	<0.001	<0.001	55	10	2020_06	2022_01	NS
									2022_02	NS
									2022_03	NS
									2022_06	166
								2020_09	2022_01	NS
									2022_02	NS
									2022_03	NS
									2022_06	244
								2020_12	2022_01	NS
									2022_02	NS
									2022_03	NS
									2022_06	453
								2021_06	2022_01	NS
									2022_02	NS
									2022_03	NS
									2022_06	150
								2021_09	2022_01	NS
									2022_02	NS
									2022_03	NS
									2022_06	262
								2021_12	2022_01	NS
									2022_02	NS
									2022_03	NS
									2022_06	248
RG_FO22	0.483	<0.001	0.004	<0.001	<0.001	55	7	2018_09	2022_01	141
									2022_02	NS
									2022_03	NS
									2022_09	NS
								2018_12	2022_01	100
									2022_02	NS
									2022_03	NS
									2022_09	NS
								2019_06	2022_01	NS
									2022_02	NS
									2022_03	NS
									2022_09	NS
								2019_09	2022_01	115
									2022_02	NS
									2022_03	NS
									2022_09	NS
								2019_12	2022_01	174
									2022_02	NS
									2022_03	88
									2022_09	NS
								2020_06	2022_01	NS
									2022_02	NS
									2022_03	NS
									2022_09	NS
2020_09	2022_01	87								
	2022_02	NS								
	2022_03	NS								
	2022_09	NS								
2020_12	2022_01	142								
	2022_02	NS								
	2022_03	NS								
	2022_09	NS								
2021_06	2022_01	NS								
	2022_02	NS								
	2022_03	NS								
	2022_09	NS								
2021_09	2022_01	NS								
	2022_02	NS								
	2022_03	NS								
	2022_09	NS								
2021_12	2022_01	NS								
	2022_02	NS								
	2022_03	NS								
	2022_09	NS								

- P-Value for relevant BACI term < 0.1.
- Increase in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25 %.
- Decrease in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated, Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table G.4: Statistical Comparison of Benthic Invertebrate Tissue Chemistry Upstream (RG_FOBKS) and Downstream of the Active Water Treatment Plant, FRO LAEMP 2018 to 2022

Treated Station	ANOVA MODEL					Post-Hoc Comparisons											
	BA	Treated	BA x Treated	BA (Time Group)	BA (Time Group) x Treated	Total number of before versus after comparisons	Number of significant comparisons	Period 1	Period 2	Magnitude of Difference							
RG_FOU EW	0.126	0.202	0.002	<0.001	<0.001	44	7	2018_09	2022_01	179							
									2022_02	NS							
									2022_03	NS							
								2018_12	2022_09	NS							
									2022_01	NS							
									2022_02	NS							
								2019_06	2022_03	NS							
									2022_09	NS							
									2022_01	NS							
								2019_09	2022_02	NS							
									2022_03	NS							
									2022_09	NS							
								2019_12	2022_01	160							
									2022_02	NS							
									2022_03	NS							
								2020_06	2022_09	NS							
									2022_01	83							
									2022_02	NS							
								2020_09	2022_03	NS							
									2022_09	NS							
									2022_01	95							
								2020_12	2022_02	NS							
									2022_03	NS							
									2022_09	NS							
								2021_06	2022_01	78							
									2022_02	NS							
									2022_03	NS							
								2021_09	2022_09	NS							
									2022_01	NS							
									2022_02	NS							
								2021_12	2022_03	NS							
									2022_09	NS							
									2022_01	78							

- P-Value for relevant BACI term < 0.1.
- Increase in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25 %.
- Decrease in After Treatment Concentration for Downstream Area Relative to Upstream Area of > 25%.

Notes: "-" = P-Value not relevant, ns = non-significant. MOD = $(MCT_{Treated, after} - MCT_{Predicted, after}) / MCT_{Predicted, after} * 100\%$, where $MCT_{Predicted, After} = MCT_{Untreated, after} + (MCT_{Treated, Before} - MCT_{Untreated Before})$ and MCT = Measure of Central Tendency. Measure of Central Tendency estimated as marginal means from the full interaction model. MODs represent the difference between the observed upstream vs downstream post-treatment (i.e., 2022) contrasts and expected upstream vs. downstream post-treatment contrasts. If the nested BA (Year) x Treatment term is significant, contrasts were calculated separately for each before year, otherwise the average of all before treatment years was used.

Table G.5: Paired Benthic Invertebrate Tissue and Water Selenium Concentrations for the FRO LAEMP, 2012 to 2022

Watershed	Exposure Status	Minnow Biological Monitoring Area	Associated Teck Water Monitoring Station Code	Year	Total Selenium in Water		Selenium in Tissue	
					Sample Date	µg/L	Sample Date	mg/kg dw
Fording River	Reference	RG_HENUP	FR_HC3	2012	18-Sep-12	0.830	18-Sep-12	6.38
				2016	12-Sep-16	1.11	12-Sep-16	3.77
				2017	15-Sep-17	1.04	15-Sep-17	4.90
				2018	06-Sep-18	1.11	06-Sep-18	2.50
				2018	06-Sep-18	1.11	06-Sep-18	4.60
				2018	06-Sep-18	1.11	06-Sep-18	4.80
				2019	-	-	20-Jun-19	4.90
				2019	-	-	20-Jun-19	7.30
				2019	-	-	20-Jun-19	6.20
				2019	11-Sep-19	1.11	11-Sep-19	5.20
				2019	11-Sep-19	1.11	11-Sep-19	4.60
				2019	11-Sep-19	1.11	11-Sep-19	3.90
				2020	15-Jun-20	0.342	15-Jun-20	5.10
				2020	15-Jun-20	0.342	15-Jun-20	7.50
				2020	15-Jun-20	0.342	15-Jun-20	3.60
				2020	15-Sep-20	1.03	15-Sep-20	6.00
				2020	15-Sep-20	1.03	15-Sep-20	6.90
				2020	15-Sep-20	1.03	15-Sep-20	5.70
				2021	16-Jun-21	0.403	16-Jun-21	5.10
				2021	16-Jun-21	0.403	16-Jun-21	5.20
				2021	16-Jun-21	0.403	16-Jun-21	4.80
				2021	16-Sep-21	1.16	16-Sep-21	4.80
				2021	16-Sep-21	1.16	16-Sep-21	6.00
				2021	16-Sep-21	1.16	16-Sep-21	6.00
				2022	12-Sep-22	1.23	12-Sep-22	8.20
		2022	12-Sep-22	1.23	12-Sep-22	7.30		
		2022	12-Sep-22	1.23	12-Sep-22	5.10		
		2012	18-Sep-12	0.580	18-Sep-12	4.91		
		2012	18-Sep-12	0.580	18-Sep-12	3.62		
		2012	18-Sep-12	0.580	18-Sep-12	4.21		
		2015	14-Sep-15	0.790	14-Sep-15	4.90		
		2016	12-Sep-16	0.685	12-Sep-16	3.53		
		2017	12-Sep-17	0.600	12-Sep-17	3.20		
		2018	07-Sep-18	0.567	07-Sep-18	3.40		
		2018	07-Sep-18	0.567	07-Sep-18	4.10		
		2018	07-Sep-18	0.567	07-Sep-18	3.80		
		2019	20-Jun-19	0.603	20-Jun-19	3.60		
		2019	20-Jun-19	0.603	20-Jun-19	3.40		
		2019	20-Jun-19	0.603	20-Jun-19	3.40		
		2019	10-Sep-19	0.610	10-Sep-19	3.20		
		2019	10-Sep-19	0.610	10-Sep-19	3.10		
		2019	10-Sep-19	0.610	10-Sep-19	2.80		
		2020	17-Jun-20	0.384	17-Jun-20	4.40		
		2020	17-Jun-20	0.384	17-Jun-20	4.00		
		2020	17-Jun-20	0.384	17-Jun-20	5.00		
		2020	17-Sep-20	0.646	17-Sep-20	3.90		
		2020	17-Sep-20	0.646	17-Sep-20	5.00		
		2020	17-Sep-20	0.646	17-Sep-20	4.80		
		2021	14-Jun-21	0.449	14-Jun-21	5.40		
		2021	14-Jun-21	0.449	14-Jun-21	3.20		
2021	14-Jun-21	0.449	14-Jun-21	4.40				
2021	15-Sep-21	0.799	15-Sep-21	4.20				
2021	15-Sep-21	0.799	15-Sep-21	3.70				
2021	15-Sep-21	0.799	15-Sep-21	3.80				
2021	15-Sep-21	0.799	15-Sep-21	2.90				
2021	15-Sep-21	0.799	15-Sep-21	3.80				
2022	27-Jun-22	0.376	27-Jun-22	2.50				
2022	27-Jun-22	0.376	27-Jun-22	3.50				
2022	27-Jun-22	0.376	27-Jun-22	3.00				
2022	16-Sep-22	0.833	16-Sep-22	4.40				
2022	16-Sep-22	0.833	16-Sep-22	5.00				
2022	16-Sep-22	0.833	16-Sep-22	1.80				
2018	05-Dec-18	0.732	05-Dec-18	4.10				
2018	05-Dec-18	0.732	05-Dec-18	3.70				
2018	05-Dec-18	0.732	05-Dec-18	4.00				
2019	14-Feb-19	1.02	14-Feb-19	4.90				
2019	14-Feb-19	1.02	14-Feb-19	3.80				
2019	14-Feb-19	1.02	14-Feb-19	5.20				
2019	10-Dec-19	0.823	10-Dec-19	4.20				
2019	10-Dec-19	0.823	10-Dec-19	4.60				
2019	10-Dec-19	0.823	10-Dec-19	4.60				

Notes: No concurrent water selenium data were available for 2016 tissue samples, so concentrations from the closest sample date from each associated Teck WQ monitoring station was used. No selenium water data was available for MP1 in 2012, so the corresponding data from FR_MULTIPATE was used for that data point only in 2012. "-" indicates stations where benthic tissue samples were not taken because of frozen conditions. June 2019 water quality data were not available for RG_HENUP and RG_FOUUEW. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.5: Paired Benthic Invertebrate Tissue and Water Selenium Concentrations for the FRO LAEMP, 2012 to 2022

Watershed	Exposure Status	Minnow Biological Monitoring Area	Associated Teck Water Monitoring Station Code	Year	Total Selenium in Water		Selenium in Tissue	
					Sample Date	µg/L	Sample Date	mg/kg dw
Fording River	Reference	RG_UFR1	FR_UFR1	2020	17-Jun-20	0.445	17-Jun-20	3.80
				2020	17-Jun-20	0.445	17-Jun-20	6.40
				2020	17-Jun-20	0.445	17-Jun-20	5.30
				2020	17-Jun-20	0.445	17-Jun-20	4.10
				2020	17-Jun-20	0.445	17-Jun-20	3.60
				2020	16-Sep-20	0.706	16-Sep-20	6.50
				2020	16-Sep-20	0.706	16-Sep-20	4.90
				2020	16-Sep-20	0.706	16-Sep-20	6.30
				2020	16-Sep-20	0.706	16-Sep-20	5.80
				2020	16-Sep-20	0.706	16-Sep-20	4.40
				2020	08-Dec-20	0.875	08-Dec-20	4.70
				2020	08-Dec-20	0.875	08-Dec-20	3.90
				2020	08-Dec-20	0.875	08-Dec-20	3.90
				2020	08-Dec-20	0.875	08-Dec-20	3.50
				2020	08-Dec-20	0.875	08-Dec-20	4.80
				2021	15-Jun-21	0.488	15-Jun-21	3.90
				2021	15-Jun-21	0.488	15-Jun-21	2.90
				2021	15-Jun-21	0.488	15-Jun-21	4.90
				2021	15-Jun-21	0.488	15-Jun-21	3.10
				2021	15-Jun-21	0.488	15-Jun-21	3.40
				2021	20-Sep-21	0.640	20-Sep-21	4.80
				2021	20-Sep-21	0.640	20-Sep-21	5.60
				2021	20-Sep-21	0.640	20-Sep-21	4.50
				2021	20-Sep-21	0.640	20-Sep-21	4.90
				2021	20-Sep-21	0.640	20-Sep-21	4.80
				2021	16-Dec-21	0.720	16-Dec-21	3.70
				2021	16-Dec-21	0.720	16-Dec-21	4.00
				2021	16-Dec-21	0.720	16-Dec-21	1.70
				2021	16-Dec-21	0.720	16-Dec-21	3.00
				2021	16-Dec-21	0.720	16-Dec-21	4.00
				2022	18-Jan-22	0.938	18-Jan-22	4.30
				2022	18-Jan-22	0.938	18-Jan-22	3.10
				2022	18-Jan-22	0.938	18-Jan-22	6.10
				2022	18-Jan-22	0.938	18-Jan-22	3.30
				2022	18-Jan-22	0.938	18-Jan-22	3.80
				2022	17-Feb-22	0.876	17-Feb-22	4.40
				2022	17-Feb-22	0.876	17-Feb-22	5.90
				2022	17-Feb-22	0.876	17-Feb-22	6.00
				2022	17-Feb-22	0.876	17-Feb-22	4.50
				2022	17-Feb-22	0.876	17-Feb-22	5.40
2022	16-Mar-22	0.959	16-Mar-22	6.40				
2022	16-Mar-22	0.959	16-Mar-22	6.00				
2022	16-Mar-22	0.959	16-Mar-22	6.80				
2022	16-Mar-22	0.959	16-Mar-22	5.20				
2022	16-Mar-22	0.959	16-Mar-22	5.90				
2022	27-Jun-22	0.398	27-Jun-22	4.00				
2022	27-Jun-22	0.398	27-Jun-22	3.60				
2022	27-Jun-22	0.398	27-Jun-22	3.80				
2022	27-Jun-22	0.398	27-Jun-22	4.90				
2022	27-Jun-22	0.398	27-Jun-22	4.00				
2022	19-Sep-22	0.759	19-Sep-22	5.40				
2022	19-Sep-22	0.759	19-Sep-22	5.00				
2022	19-Sep-22	0.759	19-Sep-22	4.70				
2022	19-Sep-22	0.759	19-Sep-22	3.50				
2022	19-Sep-22	0.759	19-Sep-22	5.00				
2022	05-Dec-22	0.861	05-Dec-22	4.50				
2022	05-Dec-22	0.861	05-Dec-22	3.90				
2022	05-Dec-22	0.861	05-Dec-22	3.80				
2022	05-Dec-22	0.861	05-Dec-22	5.20				
2022	05-Dec-22	0.861	05-Dec-22	4.00				

Notes: No concurrent water selenium data were available for 2016 tissue samples, so concentrations from the closest sample date from each associated Teck WQ monitoring station was used. No selenium water data was available for MP1 in 2012, so the corresponding data from FR_MULTIPLATE was used for that data point only in 2012. "-" indicates stations where benthic tissue samples were not taken because of frozen conditions. June 2019 water quality data were not available for RG_HENUP and RG_FOUUEW. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.5: Paired Benthic Invertebrate Tissue and Water Selenium Concentrations for the FRO LAEMP, 2012 to 2022

Watershed	Exposure Status	Minnow Biological Monitoring Area	Associated Teck Water Monitoring Station Code	Year	Total Selenium in Water		Selenium in Tissue		
					Sample Date	µg/L	Sample Date	mg/kg dw	
Fording River	Reference	RG_FRGHSC	-	2021	19-Sep-21	107	19-Sep-21	19.0	
				2021	19-Sep-21	107	19-Sep-21	5.50	
				2021	19-Sep-21	107	19-Sep-21	13.0	
				2021	19-Sep-21	107	19-Sep-21	18.0	
				2021	19-Sep-21	107	19-Sep-21	28.0	
				2021	13-Dec-21	103	13-Dec-21	13.0	
				2021	13-Dec-21	103	13-Dec-21	17.0	
				2021	13-Dec-21	103	13-Dec-21	15.0	
				2021	13-Dec-21	103	13-Dec-21	6.50	
				2021	13-Dec-21	103	13-Dec-21	4.60	
				2022	21-Jan-22	118	21-Jan-22	6.60	
				2022	21-Jan-22	118	21-Jan-22	19.0	
				2022	21-Jan-22	118	21-Jan-22	8.10	
				2022	21-Jan-22	118	21-Jan-22	8.10	
				2022	21-Jan-22	118	21-Jan-22	6.70	
				2022	18-Feb-22	123	18-Feb-22	8.40	
				2022	18-Feb-22	123	18-Feb-22	10.0	
				2022	18-Feb-22	123	18-Feb-22	7.90	
				2022	18-Feb-22	123	18-Feb-22	7.20	
				2022	18-Feb-22	123	18-Feb-22	7.70	
				2022	15-Mar-22	105	15-Mar-22	7.10	
				2022	15-Mar-22	105	15-Mar-22	9.30	
				2022	15-Mar-22	105	15-Mar-22	9.00	
				2022	15-Mar-22	105	15-Mar-22	8.70	
				2022	15-Mar-22	105	15-Mar-22	10.0	
				2022	29-Jun-22	74.3	29-Jun-22	18.0	
				2022	29-Jun-22	74.3	29-Jun-22	16.0	
				2022	29-Jun-22	74.3	29-Jun-22	19.0	
				2022	29-Jun-22	74.3	29-Jun-22	9.50	
				2022	29-Jun-22	74.3	29-Jun-22	15.0	
				2022	18-Sep-22	87.8	18-Sep-22	19.0	
				2022	18-Sep-22	87.8	18-Sep-22	13.0	
				2022	18-Sep-22	87.8	18-Sep-22	5.30	
				2022	18-Sep-22	87.8	18-Sep-22	17.0	
	2022	18-Sep-22	87.8	18-Sep-22	10.0				
	2022	08-Dec-22	90.7	08-Dec-22	15.0				
	2022	08-Dec-22	90.7	08-Dec-22	7.90				
	2022	08-Dec-22	90.7	08-Dec-22	7.90				
	2022	08-Dec-22	90.7	08-Dec-22	5.80				
	2022	08-Dec-22	90.7	08-Dec-22	10.0				
					2012	19-Sep-12	18.0	19-Sep-12	8.88
					2015	14-Sep-15	9.82	14-Sep-15	6.55
					2017	15-Sep-17	20.4	15-Sep-17	8.10
					2018	05-Sep-18	19.8	05-Sep-18	11.0
					2018	05-Sep-18	19.8	05-Sep-18	12.0
					2018	05-Sep-18	19.8	05-Sep-18	15.0
				2018	05-Dec-18	25.1	05-Dec-18	7.80	
				2018	05-Dec-18	25.1	05-Dec-18	7.60	
				2018	05-Dec-18	25.1	05-Dec-18	3.80	
				2019	20-Jun-19	4.28	20-Jun-19	6.80	
				2019	20-Jun-19	4.28	20-Jun-19	6.00	
				2019	20-Jun-19	4.28	20-Jun-19	3.90	
	Mine-Exposed	RG_FODHE	FR_FR1	2019	10-Sep-19	13.5	10-Sep-19	5.10	
2019				10-Sep-19	13.5	10-Sep-19	5.20		
2019				10-Sep-19	13.5	10-Sep-19	7.00		
2019				10-Dec-19	21.8	10-Dec-19	4.40		
2019				10-Dec-19	21.8	10-Dec-19	5.20		
2019				10-Dec-19	21.8	10-Dec-19	5.20		
2020				15-Jun-20	3.90	15-Jun-20	5.70		
2020				15-Jun-20	3.90	15-Jun-20	5.40		
2020				15-Jun-20	3.90	15-Jun-20	3.30		
2020				15-Sep-20	22.7	15-Sep-20	8.10		
2020				15-Sep-20	22.7	15-Sep-20	8.10		
2020				15-Sep-20	22.7	15-Sep-20	7.50		
2021				14-Jun-21	7.36	14-Jun-21	4.40		
2021				14-Jun-21	7.36	14-Jun-21	3.30		
2021				14-Jun-21	7.36	14-Jun-21	5.00		
2021				13-Sep-21	12.4	13-Sep-21	7.40		
2021				13-Sep-21	12.4	13-Sep-21	7.90		
2021				13-Sep-21	12.4	13-Sep-21	12.0		
2021				15-Dec-21	40.1	15-Dec-21	7.30		
2021				15-Dec-21	40.1	15-Dec-21	7.80		
2021				15-Dec-21	40.1	15-Dec-21	5.90		
2022				13-Jun-22	3.94	13-Jun-22	5.50		
2022	13-Jun-22	3.94	13-Jun-22	6.10					
2022	13-Jun-22	3.94	13-Jun-22	4.80					
2022	19-Sep-22	18.7	19-Sep-22	9.00					
2022	19-Sep-22	18.7	19-Sep-22	11.0					
2022	19-Sep-22	18.7	19-Sep-22	11.0					

Notes: No concurrent water selenium data were available for 2016 tissue samples, so concentrations from the closest sample date from each associated Teck WQ monitoring station was used. No selenium water data was available for MP1 in 2012, so the corresponding data from FR_MULTIPLATE was used for that data point only in 2012. "-" indicates stations where benthic tissue samples were not taken because of frozen conditions. June 2019 water quality data were not available for RG_HENUP and RG_FOUW. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.5: Paired Benthic Invertebrate Tissue and Water Selenium Concentrations for the FRO LAEMP, 2012 to 2022

Watershed	Exposure Status	Minnow Biological Monitoring Area	Associated Teck Water Monitoring Station Code	Year	Total Selenium in Water		Selenium in Tissue			
					Sample Date	µg/L	Sample Date	mg/kg dw		
Fording River	Mine-Exposed	RG_FOUCL	RG_FOUCL	2019	12-Sep-19	16.5	12-Sep-19	7.20		
				2019	12-Sep-19	16.5	12-Sep-19	5.50		
				2019	12-Sep-19	16.5	12-Sep-19	5.80		
				2019	09-Dec-19	30.0	09-Dec-19	4.50		
				2019	09-Dec-19	30.0	09-Dec-19	4.60		
				2019	09-Dec-19	30.0	09-Dec-19	3.40		
				2020	15-Jun-20	5.54	15-Jun-20	7.90		
				2020	15-Jun-20	5.54	15-Jun-20	5.50		
				2020	15-Jun-20	5.54	15-Jun-20	6.60		
				2020	10-Sep-20	27.3	10-Sep-20	13.0		
				2020	10-Sep-20	27.3	10-Sep-20	10.0		
				2020	10-Sep-20	27.3	10-Sep-20	6.70		
				2020	08-Dec-20	32.4	08-Dec-20	6.40		
				2020	08-Dec-20	32.4	08-Dec-20	5.90		
				2020	08-Dec-20	32.4	08-Dec-20	5.80		
				2021	14-Jun-21	4.99	14-Jun-21	6.10		
				2021	14-Jun-21	4.99	14-Jun-21	5.40		
				2021	14-Jun-21	4.99	14-Jun-21	8.70		
				2021	13-Sep-21	15.3	13-Sep-21	11.0		
				2021	13-Sep-21	15.3	13-Sep-21	8.80		
				2021	13-Sep-21	15.3	13-Sep-21	11.0		
				2021	15-Dec-21	37.3	15-Dec-21	7.30		
				2021	15-Dec-21	37.3	15-Dec-21	7.50		
				2021	15-Dec-21	37.3	15-Dec-21	8.70		
				2022	13-Jun-22	6.28	13-Jun-22	5.20		
				2022	13-Jun-22	6.28	13-Jun-22	3.90		
				2022	13-Jun-22	6.28	13-Jun-22	2.70		
				2022	16-Sep-22	29.3	16-Sep-22	10.0		
				2022	16-Sep-22	29.3	16-Sep-22	12.0		
				2022	16-Sep-22	29.3	16-Sep-22	13.0		
		2022	16-Sep-22	29.3	16-Sep-22	10.0				
		2022	16-Sep-22	29.3	16-Sep-22	10.0				
		2022	05-Dec-22	38.5	05-Dec-22	5.80				
		2022	05-Dec-22	38.5	05-Dec-22	6.81				
		2022	05-Dec-22	38.5	05-Dec-22	6.10				
		2022	05-Dec-22	38.5	05-Dec-22	5.80				
		2022	05-Dec-22	38.5	05-Dec-22	5.80				
				RG_FOUNGD	-	2012	12-Sep-12	23.5	12-Sep-12	8.15
						2015	15-Sep-15	24.0	15-Sep-15	7.19
						2017	16-Sep-17	53.0	16-Sep-17	6.50
		2018	13-Sep-18			37.9	13-Sep-18	6.00		
		2018	13-Sep-18			37.9	13-Sep-18	7.00		
		2018	13-Sep-18			37.9	13-Sep-18	8.00		
		2018	05-Dec-18			52.2	05-Dec-18	6.00		
		2018	05-Dec-18			52.2	05-Dec-18	6.10		
		2018	05-Dec-18			52.2	05-Dec-18	5.00		
		2019	12-Feb-19			48.4	12-Feb-19	5.60		
		2019	12-Feb-19			48.4	12-Feb-19	5.50		
		2019	12-Feb-19			48.4	12-Feb-19	5.70		
		2019	26-Mar-19			29.9	26-Mar-19	5.40		
		2019	19-Jun-19	8.86	19-Jun-19	5.10				
		2019	19-Jun-19	8.86	19-Jun-19	4.50				
		2019	19-Jun-19	8.86	19-Jun-19	5.10				
		2019	12-Sep-19	27.7	12-Sep-19	7.50				

Notes: No concurrent water selenium data were available for 2016 tissue samples, so concentrations from the closest sample date from each associated Teck WQ monitoring station was used. No selenium water data was available for MP1 in 2012, so the corresponding data from FR_MULTIPLE was used for that data point only in 2012. "-" indicates stations where benthic tissue samples were not taken because of frozen conditions. June 2019 water quality data were not available for RG_HENUP and RG_FOUUEW. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.5: Paired Benthic Invertebrate Tissue and Water Selenium Concentrations for the FRO LAEMP, 2012 to 2022

Watershed	Exposure Status	Minnow Biological Monitoring Area	Associated Teck Water Monitoring Station Code	Year	Total Selenium in Water		Selenium in Tissue	
					Sample Date	µg/L	Sample Date	mg/kg dw
Fording River	Mine-Exposed	RG_FOUNGD	-	2019	12-Sep-19	27.7	12-Sep-19	6.40
				2019	12-Sep-19	27.7	12-Sep-19	6.10
				2019	09-Dec-19	53.8	09-Dec-19	5.10
				2019	09-Dec-19	53.8	09-Dec-19	4.30
				2019	09-Dec-19	53.8	09-Dec-19	4.40
				2020	06-Jun-20	9.33	16-Jun-20	4.50
				2020	06-Jun-20	9.33	16-Jun-20	4.70
				2020	06-Jun-20	9.33	16-Jun-20	4.30
				2020	10-Sep-20	39.9	10-Sep-20	11.0
				2020	10-Sep-20	39.9	10-Sep-20	11.0
				2020	10-Sep-20	39.9	10-Sep-20	9.60
				2020	08-Dec-20	58.6	08-Dec-20	5.10
				2020	08-Dec-20	58.6	08-Dec-20	6.70
				2020	08-Dec-20	58.6	08-Dec-20	6.30
				2021	15-Jun-21	9.36	15-Jun-21	7.10
				2021	15-Jun-21	9.36	15-Jun-21	5.20
				2021	15-Jun-21	9.36	15-Jun-21	5.40
				2021	16-Sep-21	36.5	17-Sep-21	8.10
				2021	16-Sep-21	36.5	17-Sep-21	8.10
				2021	16-Sep-21	36.5	17-Sep-21	7.80
				2021	15-Dec-21	72.0	15-Dec-21	4.60
				2021	15-Dec-21	72.0	15-Dec-21	3.30
				2021	15-Dec-21	72.0	15-Dec-21	3.20
				2022	13-Jun-22	10.5	13-Jun-22	11.0
				2022	13-Jun-22	10.5	13-Jun-22	7.40
				2022	13-Jun-22	10.5	13-Jun-22	8.30
				2022	15-Sep-22	54.4	15-Sep-22	7.10
				2022	15-Sep-22	54.4	15-Sep-22	9.80
				2022	15-Sep-22	54.4	15-Sep-22	9.50
				2022	15-Sep-22	54.4	15-Sep-22	10.0
				2022	15-Sep-22	54.4	15-Sep-22	12.0
				2022	06-Dec-22	77.4	06-Dec-22	7.90
				2022	06-Dec-22	77.4	06-Dec-22	7.00
		2022	06-Dec-22	77.4	06-Dec-22	5.20		
		2022	06-Dec-22	77.4	06-Dec-22	7.20		
		2022	06-Dec-22	77.4	06-Dec-22	6.70		
		2017	16-Sep-17	54.3	16-Sep-17	5.60		
		2018	12-Sep-18	42.0	12-Sep-18	9.00		
		2018	12-Sep-18	42.0	12-Sep-18	8.00		
		2018	12-Sep-18	42.0	12-Sep-18	8.00		
		2018	05-Dec-18	51.8	05-Dec-18	4.70		
		2018	05-Dec-18	51.8	05-Dec-18	4.20		
		2018	05-Dec-18	51.8	05-Dec-18	7.00		
		2019	12-Feb-19	54.4	12-Feb-19	7.20		
		2019	12-Feb-19	54.4	12-Feb-19	5.00		
		2019	12-Feb-19	54.4	12-Feb-19	8.10		
		2019	19-Jun-19	8.59	19-Jun-19	4.10		
		2019	19-Jun-19	8.59	19-Jun-19	5.60		
		2019	19-Jun-19	8.59	19-Jun-19	4.40		
		2019	12-Sep-19	30.2	12-Sep-19	8.00		
2019	12-Sep-19	30.2	12-Sep-19	4.50				
2019	12-Sep-19	30.2	12-Sep-19	7.00				
2019	09-Dec-19	55.4	09-Dec-19	4.90				
2019	09-Dec-19	55.4	09-Dec-19	5.90				
2019	09-Dec-19	55.4	09-Dec-19	5.60				
2020	16-Jun-20	9.86	16-Jun-20	6.30				
2020	16-Jun-20	9.86	16-Jun-20	5.80				
2020	16-Jun-20	9.86	16-Jun-20	2.50				
2020	21-Sep-20	49.0	21-Sep-20	6.90				
2020	21-Sep-20	49.0	21-Sep-20	7.90				
2020	21-Sep-20	49.0	21-Sep-20	9.60				
2020	08-Dec-20	68.8	08-Dec-20	6.00				
2020	08-Dec-20	68.8	08-Dec-20	5.60				
2020	08-Dec-20	68.8	08-Dec-20	5.70				
2021	16-Jun-21	10.9	16-Jun-21	6.50				
2021	16-Jun-21	10.9	16-Jun-21	3.70				
2021	16-Jun-21	10.9	16-Jun-21	6.20				
2021	16-Sep-21	41.0	17-Sep-21	7.70				
2021	16-Sep-21	41.0	17-Sep-21	8.00				
2021	16-Sep-21	41.0	17-Sep-21	11.0				
2021	15-Dec-21	87.0	15-Dec-21	5.20				
2021	15-Dec-21	87.0	15-Dec-21	4.60				
2021	15-Dec-21	87.0	15-Dec-21	5.40				
2022	13-Jun-22	10.2	13-Jun-22	5.10				
2022	13-Jun-22	10.2	13-Jun-22	9.40				
2022	13-Jun-22	10.2	13-Jun-22	6.10				
2022	15-Sep-22	74.2	15-Sep-22	9.20				
2022	15-Sep-22	74.2	15-Sep-22	7.40				
2022	15-Sep-22	74.2	15-Sep-22	11.0				
2022	15-Sep-22	74.2	15-Sep-22	9.20				
2022	15-Sep-22	74.2	15-Sep-22	7.90				
2022	06-Dec-22	90.2	06-Dec-22	4.10				
2022	06-Dec-22	90.2	06-Dec-22	8.20				
2022	06-Dec-22	90.2	06-Dec-22	7.10				
2022	06-Dec-22	90.2	06-Dec-22	7.20				
2022	06-Dec-22	90.2	06-Dec-22	6.00				
2012	12-Sep-12	36.1	12-Sep-12	9.04				
2015	15-Sep-15	23.2	15-Sep-15	5.85				
		RG_MP1	FR_MULTIPLATE					

Notes: No concurrent water selenium data were available for 2016 tissue samples, so concentrations from the closest sample date from each associated Teck WQ monitoring station was used. No selenium water data was available for MP1 in 2012, so the corresponding data from FR_MULTIPLATE was used for that data point only in 2012. "-" indicates stations where benthic tissue samples were not taken because of frozen conditions. June 2019 water quality data were not available for RG_HENUP and RG_FOUUEW. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.5: Paired Benthic Invertebrate Tissue and Water Selenium Concentrations for the FRO LAEMP, 2012 to 2022

Watershed	Exposure Status	Minnow Biological Monitoring Area	Associated Teck Water Monitoring Station Code	Year	Total Selenium in Water		Selenium in Tissue	
					Sample Date	µg/L	Sample Date	mg/kg dw
Fording River	Mine-Exposed	RG_MP1	FR_MULTIPLATE	2017	12-Sep-17	52.2	12-Sep-17	5.60
				2018	11-Sep-18	44.3	11-Sep-18	7.00
				2018	11-Sep-18	44.3	11-Sep-18	8.60
				2018	11-Sep-18	44.3	11-Sep-18	8.00
				2018	06-Dec-18	57.0	06-Dec-18	6.60
				2018	06-Dec-18	57.0	06-Dec-18	6.80
				2018	06-Dec-18	57.0	06-Dec-18	5.30
				2019	13-Feb-19	62.5	13-Feb-19	5.00
				2019	13-Feb-19	62.5	13-Feb-19	4.70
				2019	13-Feb-19	62.5	13-Feb-19	8.40
				2019	18-Jun-19	10.8	18-Jun-19	5.20
				2019	18-Jun-19	10.8	18-Jun-19	6.00
				2019	18-Jun-19	10.8	18-Jun-19	6.10
				2019	05-Sep-19	34.4	05-Sep-19	5.60
				2019	05-Sep-19	34.4	05-Sep-19	7.00
				2019	05-Sep-19	34.4	05-Sep-19	7.30
				2019	09-Dec-19	57.0	09-Dec-19	5.10
				2019	09-Dec-19	57.0	09-Dec-19	6.40
				2019	09-Dec-19	57.0	09-Dec-19	5.80
				2020	15-Jun-20	11.2	15-Jun-20	6.10
				2020	15-Jun-20	11.2	15-Jun-20	6.80
				2020	15-Jun-20	11.2	15-Jun-20	6.70
				2020	15-Sep-20	49.5	15-Sep-20	13.0
				2020	15-Sep-20	49.5	15-Sep-20	12.0
				2020	15-Sep-20	49.5	15-Sep-20	9.60
				2020	09-Dec-20	68.1	09-Dec-20	5.70
				2020	09-Dec-20	68.1	09-Dec-20	5.90
				2020	09-Dec-20	68.1	09-Dec-20	6.00
				2021	14-Jun-21	15.5	14-Jun-21	6.20
				2021	14-Jun-21	15.5	14-Jun-21	9.70
		2021	14-Jun-21	15.5	14-Jun-21	13.0		
		2021	15-Sep-21	54.6	14-Sep-21	5.00		
		2021	15-Sep-21	54.6	14-Sep-21	8.50		
		2021	15-Sep-21	54.6	14-Sep-21	8.40		
		2021	15-Dec-21	81.9	15-Dec-21	6.10		
		2021	15-Dec-21	81.9	15-Dec-21	4.10		
		2021	15-Dec-21	81.9	15-Dec-21	4.40		
		2022	13-Jun-22	12.6	13-Jun-22	5.80		
		2022	13-Jun-22	12.6	13-Jun-22	6.50		
		2022	13-Jun-22	12.6	13-Jun-22	5.10		
		2022	12-Sep-22	72.4	12-Sep-22	7.00		
		2022	12-Sep-22	72.4	12-Sep-22	8.50		
		2022	12-Sep-22	72.4	12-Sep-22	12.0		
		2022	12-Sep-22	72.4	12-Sep-22	11.0		
		2022	12-Sep-22	72.4	12-Sep-22	8.30		
		2022	07-Dec-22	101	07-Dec-22	3.60		
		2022	07-Dec-22	101	07-Dec-22	5.40		
		2022	07-Dec-22	101	07-Dec-22	5.40		
		2022	07-Dec-22	101	07-Dec-22	5.10		
		2022	07-Dec-22	101	07-Dec-22	5.10		
		RG_FOUSH	FR_FRNTP	2012	13-Sep-12	36.0	13-Sep-12	7.65
				2015	15-Sep-15	25.5	15-Sep-15	6.04
				2017	14-Sep-17	47.9	14-Sep-17	6.50
				2018	11-Sep-18	43.2	11-Sep-18	8.00
				2018	11-Sep-18	43.2	11-Sep-18	8.00
				2018	11-Sep-18	43.2	11-Sep-18	9.10
				2018	06-Dec-18	57.1	06-Dec-18	5.50
				2018	06-Dec-18	57.1	06-Dec-18	5.00
				2018	06-Dec-18	57.1	06-Dec-18	5.20
				2019	13-Feb-19	61.2	13-Feb-19	9.60
				2019	13-Feb-19	61.2	13-Feb-19	6.90
				2019	13-Feb-19	61.2	13-Feb-19	6.60
				2019	17-Jun-19	10.7	17-Jun-19	5.90
				2019	17-Jun-19	10.7	17-Jun-19	6.10
				2019	17-Jun-19	10.7	17-Jun-19	4.70
				2019	09-Sep-19	36.3	09-Sep-19	5.60
				2019	09-Sep-19	36.3	09-Sep-19	5.90
				2019	09-Sep-19	36.3	09-Sep-19	6.00
		2019	09-Dec-19	56.1	09-Dec-19	5.80		
		2019	09-Dec-19	56.1	09-Dec-19	7.10		
		2019	09-Dec-19	56.1	09-Dec-19	5.30		
		2020	23-Jun-20	11.9	23-Jun-20	6.30		
		2020	23-Jun-20	11.9	23-Jun-20	4.50		
		2020	23-Jun-20	11.9	23-Jun-20	7.70		
		2020	21-Sep-20	52.4	21-Sep-20	8.10		

Notes: No concurrent water selenium data were available for 2016 tissue samples, so concentrations from the closest sample date from each associated Teck WQ monitoring station was used. No selenium water data was available for MP1 in 2012, so the corresponding data from FR_MULTIPLATE was used for that data point only in 2012. "-" indicates stations where benthic tissue samples were not taken because of frozen conditions. June 2019 water quality data were not available for RG_HENUP and RG_FOUUEW. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.5: Paired Benthic Invertebrate Tissue and Water Selenium Concentrations for the FRO LAEMP, 2012 to 2022

Watershed	Exposure Status	Minnow Biological Monitoring Area	Associated Teck Water Monitoring Station Code	Year	Total Selenium in Water		Selenium in Tissue			
					Sample Date	µg/L	Sample Date	mg/kg dw		
Fording River	Mine-Exposed	RG_FOUSH	FR_FRNTP	2020	21-Sep-20	52.4	21-Sep-20	7.30		
				2020	21-Sep-20	52.4	21-Sep-20	11.0		
				2020	09-Dec-20	61.3	09-Dec-20	5.80		
				2020	09-Dec-20	61.3	09-Dec-20	4.70		
				2020	09-Dec-20	61.3	09-Dec-20	5.30		
				2021	15-Jun-21	12.9	15-Jun-21	5.40		
				2021	15-Jun-21	12.9	15-Jun-21	4.50		
				2021	15-Jun-21	12.9	15-Jun-21	6.00		
				2021	16-Sep-21	47.6	16-Sep-21	7.50		
				2021	16-Sep-21	47.6	16-Sep-21	7.30		
				2021	16-Sep-21	47.6	16-Sep-21	5.70		
				2021	15-Dec-21	79.2	15-Dec-21	5.10		
				2021	15-Dec-21	79.2	15-Dec-21	2.40		
				2021	15-Dec-21	79.2	15-Dec-21	3.80		
				2022	13-Jun-22	12.8	13-Jun-22	9.20		
				2022	13-Jun-22	12.8	13-Jun-22	6.30		
				2022	13-Jun-22	12.8	13-Jun-22	6.40		
				2022	12-Sep-22	73.8	12-Sep-22	10.0		
				2022	12-Sep-22	73.8	12-Sep-22	9.60		
				2022	12-Sep-22	73.8	12-Sep-22	6.20		
		2022	06-Dec-22	95.4	06-Dec-22	5.70				
		2022	06-Dec-22	95.4	06-Dec-22	6.10				
		2022	06-Dec-22	95.4	06-Dec-22	6.50				
		2022	06-Dec-22	95.4	06-Dec-22	6.70				
		2022	06-Dec-22	95.4	06-Dec-22	6.40				
		2022	06-Dec-22	95.4	06-Dec-22	6.40				
		2012	14-Sep-12	RG_FOUKI	FR_FR2	2012	14-Sep-12	33.6	14-Sep-12	8.55
		2015	16-Sep-15			23.3	16-Sep-15	5.13		
		2016	12-Sep-16			28.9	12-Sep-16	5.24		
		2017	12-Sep-17			44.5	12-Sep-17	6.70		
		2017	12-Sep-17			44.5	12-Sep-17	6.60		
		2017	12-Sep-17			44.5	12-Sep-17	6.80		
		2018	06-Mar-18			54.9	06-Mar-18	4.90		
		2018	06-Mar-18			54.9	06-Mar-18	5.40		
		2018	06-Mar-18			54.9	06-Mar-18	5.00		
		2018	07-Sep-18			38.0	07-Sep-18	9.40		
		2018	07-Sep-18			38.0	07-Sep-18	10.0		
		2018	07-Sep-18			38.0	07-Sep-18	11.0		
		2018	04-Dec-18			47.4	04-Dec-18	4.90		
		2018	04-Dec-18			47.4	04-Dec-18	5.50		
		2018	04-Dec-18			47.4	04-Dec-18	7.20		
		2019	12-Feb-19			46.8	12-Feb-19	4.50		
		2019	12-Feb-19			46.8	12-Feb-19	4.80		
		2019	12-Feb-19			46.8	12-Feb-19	4.70		
		2019	18-Jun-19			9.68	18-Jun-19	4.70		
		2019	18-Jun-19			9.68	18-Jun-19	4.70		
2019	18-Jun-19	9.68	18-Jun-19			5.00				
2019	05-Sep-19	31.2	05-Sep-19			6.20				
2019	05-Sep-19	31.2	05-Sep-19			8.80				
2019	05-Sep-19	31.2	05-Sep-19			9.20				
2019	09-Dec-19	52.2	09-Dec-19			4.10				
2019	09-Dec-19	52.2	09-Dec-19			4.40				
2019	09-Dec-19	52.2	09-Dec-19			4.40				
2020	17-Jun-20	16.1	17-Jun-20			6.30				
2020	17-Jun-20	16.1	17-Jun-20			6.80				
2020	17-Jun-20	16.1	17-Jun-20			6.30				
2020	17-Jun-20	16.1	17-Jun-20			4.90				
2020	17-Jun-20	16.1	17-Jun-20			4.80				
2020	14-Sep-20	57.2	14-Sep-20			9.40				
2020	14-Sep-20	57.2	14-Sep-20			9.00				
2020	14-Sep-20	57.2	14-Sep-20			8.50				
2020	14-Sep-20	57.2	14-Sep-20			12.0				
2020	14-Sep-20	57.2	14-Sep-20			11.0				
2020	09-Dec-20	56.2	09-Dec-20			5.60				
2020	09-Dec-20	56.2	09-Dec-20			6.20				
2020	09-Dec-20	56.2	09-Dec-20			4.20				
2020	09-Dec-20	56.2	09-Dec-20			5.60				
2020	09-Dec-20	56.2	09-Dec-20			3.00				
2021	17-Jun-21	16.2	17-Jun-21			5.60				
2021	17-Jun-21	16.2	17-Jun-21			5.70				
2021	17-Jun-21	16.2	17-Jun-21			5.40				
2021	17-Jun-21	16.2	17-Jun-21			4.60				
2021	17-Jun-21	16.2	17-Jun-21	6.30						
2021	20-Sep-21	43.3	20-Sep-21	6.20						

Notes: No concurrent water selenium data were available for 2016 tissue samples, so concentrations from the closest sample date from each associated Teck WQ monitoring station was used. No selenium water data was available for MP1 in 2012, so the corresponding data from FR_MULTIPATE was used for that data point only in 2012. "-" indicates stations where benthic tissue samples were not taken because of frozen conditions. June 2019 water quality data were not available for RG_HENUP and RG_FOUUEW. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.5: Paired Benthic Invertebrate Tissue and Water Selenium Concentrations for the FRO LAEMP, 2012 to 2022

Watershed	Exposure Status	Minnow Biological Monitoring Area	Associated Teck Water Monitoring Station Code	Year	Total Selenium in Water		Selenium in Tissue	
					Sample Date	µg/L	Sample Date	mg/kg dw
Fording River	Mine-Exposed	RG_FOUKI	FR_FR2	2021	20-Sep-21	43.3	20-Sep-21	5.50
				2021	20-Sep-21	43.3	20-Sep-21	7.00
				2021	20-Sep-21	43.3	20-Sep-21	4.50
				2021	20-Sep-21	43.3	20-Sep-21	4.90
				2021	14-Dec-21	67.9	14-Dec-21	2.50
				2021	14-Dec-21	67.9	14-Dec-21	4.00
				2021	14-Dec-21	67.9	14-Dec-21	2.50
				2021	14-Dec-21	67.9	14-Dec-21	5.50
				2021	14-Dec-21	67.9	14-Dec-21	3.10
				2022	18-Jan-22	81.7	18-Jan-22	3.30
				2022	18-Jan-22	81.7	18-Jan-22	3.40
				2022	18-Jan-22	81.7	18-Jan-22	4.60
				2022	18-Jan-22	81.7	18-Jan-22	1.70
				2022	18-Jan-22	81.7	18-Jan-22	5.00
				2022	15-Feb-22	79.8	15-Feb-22	4.30
				2022	15-Feb-22	79.8	15-Feb-22	6.60
				2022	15-Feb-22	79.8	15-Feb-22	4.30
				2022	15-Feb-22	79.8	15-Feb-22	4.50
				2022	15-Feb-22	79.8	15-Feb-22	6.10
				2022	15-Mar-22	83.5	15-Mar-22	6.30
				2022	15-Mar-22	83.5	15-Mar-22	9.10
				2022	15-Mar-22	83.5	15-Mar-22	3.60
				2022	15-Mar-22	83.5	15-Mar-22	5.30
				2022	15-Mar-22	83.5	15-Mar-22	6.70
				2022	27-Jun-22	19.2	27-Jun-22	6.50
				2022	27-Jun-22	19.2	27-Jun-22	6.30
				2022	27-Jun-22	19.2	27-Jun-22	5.80
				2022	27-Jun-22	19.2	27-Jun-22	7.60
				2022	27-Jun-22	19.2	27-Jun-22	6.20
				2022	13-Sep-22	65.0	13-Sep-22	7.90
		2022	13-Sep-22	65.0	13-Sep-22	6.50		
		2022	13-Sep-22	65.0	13-Sep-22	9.30		
		2022	13-Sep-22	65.0	13-Sep-22	6.40		
		2022	13-Sep-22	65.0	13-Sep-22	7.90		
		2022	08-Dec-22	95.2	08-Dec-22	5.70		
		2022	08-Dec-22	95.2	08-Dec-22	3.90		
		2022	08-Dec-22	95.2	08-Dec-22	5.30		
		2022	08-Dec-22	95.2	08-Dec-22	4.30		
		2022	08-Dec-22	95.2	08-Dec-22	5.80		
		2022	08-Dec-22	95.2	08-Dec-22	5.80		
		2012	14-Sep-12	31.9	14-Sep-12	8.84		
		2015	16-Sep-15	23.9	16-Sep-15	6.00		
		2017	13-Sep-17	44.9	13-Sep-17	5.80		
		2017	13-Sep-17	44.9	13-Sep-17	8.20		
		2017	13-Sep-17	44.9	13-Sep-17	5.90		
		2018	12-Mar-18	52.9	12-Mar-18	5.80		
		2018	12-Mar-18	52.9	12-Mar-18	5.10		
		2018	12-Mar-18	52.9	12-Mar-18	6.20		
		2018	08-Sep-18	36.2	08-Sep-18	11.0		
		2018	08-Sep-18	36.2	08-Sep-18	10.0		
2018	08-Sep-18	36.2	08-Sep-18	9.90				
2018	05-Dec-18	49.4	04-Dec-18	3.80				
2018	05-Dec-18	49.4	04-Dec-18	3.80				
2018	05-Dec-18	49.4	04-Dec-18	6.60				
2019	12-Feb-19	47.1	12-Feb-19	13.0				
2019	17-Jun-19	10.2	17-Jun-19	5.00				
2019	17-Jun-19	10.2	17-Jun-19	3.80				
2019	17-Jun-19	10.2	17-Jun-19	4.00				
2019	09-Sep-19	34.8	09-Sep-19	7.50				
2019	09-Sep-19	34.8	09-Sep-19	7.90				
2019	09-Sep-19	34.8	09-Sep-19	9.50				
2019	10-Dec-19	53.0	10-Dec-19	8.20				
2019	10-Dec-19	53.0	10-Dec-19	7.50				
2019	10-Dec-19	53.0	10-Dec-19	6.20				
2020	16-Jun-20	14.6	16-Jun-20	6.00				
2020	16-Jun-20	14.6	16-Jun-20	4.40				
2020	16-Jun-20	14.6	16-Jun-20	6.60				
2020	16-Jun-20	14.6	16-Jun-20	6.00				
2020	16-Jun-20	14.6	16-Jun-20	5.90				
2020	10-Sep-20	47.2	10-Sep-20	6.60				
2020	10-Sep-20	47.2	10-Sep-20	13.0				
2020	10-Sep-20	47.2	10-Sep-20	11.0				
2020	10-Sep-20	47.2	10-Sep-20	11.0				
2020	10-Sep-20	47.2	10-Sep-20	7.80				
2020	23-Nov-20	49.6	23-Nov-20	5.90				
2020	23-Nov-20	49.6	23-Nov-20	4.90				
2020	23-Nov-20	49.6	23-Nov-20	5.90				
2020	23-Nov-20	49.6	23-Nov-20	6.40				
2020	23-Nov-20	49.6	23-Nov-20	5.00				
2020	07-Dec-20	63.4	07-Dec-20	7.00				
2020	07-Dec-20	63.4	07-Dec-20	8.00				
2020	07-Dec-20	63.4	07-Dec-20	5.80				
2020	07-Dec-20	63.4	07-Dec-20	7.60				
2020	07-Dec-20	63.4	07-Dec-20	8.00				
2021	16-Jun-21	14.2	16-Jun-21	5.70				
2021	16-Jun-21	14.2	16-Jun-21	5.70				
2021	16-Jun-21	14.2	16-Jun-21	5.70				
2021	16-Jun-21	14.2	16-Jun-21	6.00				
2021	16-Jun-21	14.2	16-Jun-21	5.70				
2021	09-Sep-21	45.5	09-Sep-21	6.90				
2021	09-Sep-21	45.5	09-Sep-21	7.80				
2021	09-Sep-21	45.5	09-Sep-21	7.60				
2021	09-Sep-21	45.5	09-Sep-21	7.20				
2021	09-Sep-21	45.5	09-Sep-21	7.20				

Notes: No concurrent water selenium data were available for 2016 tissue samples, so concentrations from the closest sample date from each associated Teck WQ monitoring station was used. No selenium water data was available for MP1 in 2012, so the corresponding data from FR_MULTIPATE was used for that data point only in 2012. "-" indicates stations where benthic tissue samples were not taken because of frozen conditions. June 2019 water quality data were not available for RG_HENUP and RG_FOUFW. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.5: Paired Benthic Invertebrate Tissue and Water Selenium Concentrations for the FRO LAEMP, 2012 to 2022

Watershed	Exposure Status	Minnow Biological Monitoring Area	Associated Teck Water Monitoring Station Code	Year	Total Selenium in Water		Selenium in Tissue	
					Sample Date	µg/L	Sample Date	mg/kg dw
Fording River	Mine-Exposed	RG_FOBKS	FR_FR3	2021	09-Sep-21	45.5	09-Sep-21	7.80
				2021	14-Dec-21	71.8	14-Dec-21	8.90
				2021	14-Dec-21	71.8	14-Dec-21	5.30
				2021	14-Dec-21	71.8	14-Dec-21	5.90
				2021	14-Dec-21	71.8	14-Dec-21	6.00
				2021	14-Dec-21	71.8	14-Dec-21	4.80
				2022	19-Jan-22	83.5	19-Jan-22	2.60
				2022	19-Jan-22	83.5	19-Jan-22	4.10
				2022	19-Jan-22	83.5	19-Jan-22	4.10
				2022	19-Jan-22	83.5	19-Jan-22	3.40
				2022	19-Jan-22	83.5	19-Jan-22	5.00
				2022	15-Feb-22	80.0	15-Feb-22	7.90
				2022	15-Feb-22	80.0	15-Feb-22	5.20
				2022	15-Feb-22	80.0	15-Feb-22	6.30
				2022	15-Feb-22	80.0	15-Feb-22	5.40
				2022	15-Feb-22	80.0	15-Feb-22	5.70
				2022	15-Mar-22	81.3	15-Mar-22	6.70
				2022	15-Mar-22	81.3	15-Mar-22	6.00
				2022	15-Mar-22	81.3	15-Mar-22	5.10
				2022	15-Mar-22	81.3	15-Mar-22	9.20
				2022	15-Mar-22	81.3	15-Mar-22	8.20
				2022	13-Jun-22	13.7	13-Jun-22	5.00
				2022	13-Jun-22	13.7	13-Jun-22	6.30
				2022	13-Jun-22	13.7	13-Jun-22	4.60
				2022	13-Jun-22	13.7	13-Jun-22	4.50
				2022	13-Jun-22	13.7	13-Jun-22	4.70
				2022	13-Sep-22	65.9	12-Sep-22	11.0
				2022	13-Sep-22	65.9	13-Sep-22	11.0
				2022	13-Sep-22	65.9	13-Sep-22	12.0
				2022	13-Sep-22	65.9	13-Sep-22	8.20
2022	13-Sep-22	65.9	13-Sep-22	11.0				
2022	07-Nov-22	69.7	07-Nov-22	5.50				
2022	07-Nov-22	69.7	07-Nov-22	3.00				
2022	07-Nov-22	69.7	07-Nov-22	5.20				
2022	07-Nov-22	69.7	07-Nov-22	4.30				
2022	07-Nov-22	69.7	07-Nov-22	7.30				

Notes: No concurrent water selenium data were available for 2016 tissue samples, so concentrations from the closest sample date from each associated Teck WQ monitoring station was used. No selenium water data was available for MP1 in 2012, so the corresponding data from FR_MULTIPATE was used for that data point only in 2012. "-" indicates stations where benthic tissue samples were not taken because of frozen conditions. June 2019 water quality data were not available for RG_HENUP and RG_FOUW. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.5: Paired Benthic Invertebrate Tissue and Water Selenium Concentrations for the FRO LAEMP, 2012 to 2022

Watershed	Exposure Status	Minnow Biological Monitoring Area	Associated Teck Water Monitoring Station Code	Year	Total Selenium in Water		Selenium in Tissue	
					Sample Date	µg/L	Sample Date	mg/kg dw
Fording River	Mine-Exposed	RG_SCOUTDS	FR_SCOUTDS	2019	12-Sep-19	32.9	12-Sep-19	13.7
				2019	12-Sep-19	32.9	12-Sep-19	13.7
				2019	12-Sep-19	32.9	12-Sep-19	10.2
				2019	10-Dec-19	129	10-Dec-19	6.70
				2019	10-Dec-19	129	10-Dec-19	6.80
				2019	10-Dec-19	129	10-Dec-19	7.50
				2020	16-Jun-20	20.8	16-Jun-20	5.20
				2020	16-Jun-20	20.8	16-Jun-20	5.30
				2020	16-Jun-20	20.8	16-Jun-20	4.90
				2020	16-Jun-20	20.8	16-Jun-20	7.20
				2020	16-Jun-20	20.8	16-Jun-20	7.50
				2020	17-Sep-20	123	17-Sep-20	8.50
				2020	17-Sep-20	123	17-Sep-20	8.50
				2020	17-Sep-20	123	17-Sep-20	7.60
				2020	17-Sep-20	123	17-Sep-20	7.10
				2020	17-Sep-20	123	17-Sep-20	8.00
				2020	23-Nov-20	106	23-Nov-20	8.60
				2020	23-Nov-20	106	23-Nov-20	8.70
				2020	23-Nov-20	106	23-Nov-20	9.50
				2020	23-Nov-20	106	23-Nov-20	11.0
				2020	23-Nov-20	106	23-Nov-20	10.0
				2020	07-Dec-20	119	07-Dec-20	4.30
				2020	07-Dec-20	119	07-Dec-20	7.60
				2020	07-Dec-20	119	07-Dec-20	5.30
				2020	07-Dec-20	119	07-Dec-20	5.70
				2020	07-Dec-20	119	07-Dec-20	5.90
				2021	16-Jun-21	18.7	16-Jun-21	6.80
				2021	16-Jun-21	18.7	16-Jun-21	5.80
				2021	16-Jun-21	18.7	16-Jun-21	5.20
				2021	16-Jun-21	18.7	16-Jun-21	6.70
				2021	16-Jun-21	18.7	16-Jun-21	6.50
				2021	14-Sep-21	77.8	14-Sep-21	9.80
				2021	14-Sep-21	77.8	14-Sep-21	10.0
				2021	14-Sep-21	77.8	14-Sep-21	7.70
				2021	14-Sep-21	77.8	14-Sep-21	8.10
				2021	14-Sep-21	77.8	14-Sep-21	11.0
				2021	09-Dec-21	107	09-Dec-21	6.30
				2021	09-Dec-21	107	09-Dec-21	11.0
				2021	09-Dec-21	107	09-Dec-21	8.60
				2021	09-Dec-21	107	09-Dec-21	4.80
				2021	09-Dec-21	107	09-Dec-21	3.70
				2022	20-Jan-22	108	20-Jan-22	7.50
				2022	20-Jan-22	108	20-Jan-22	8.20
				2022	20-Jan-22	108	20-Jan-22	6.80
				2022	20-Jan-22	108	20-Jan-22	6.10
				2022	20-Jan-22	108	20-Jan-22	6.30
				2022	16-Feb-22	135	16-Feb-22	6.00
				2022	16-Feb-22	135	16-Feb-22	6.00
				2022	16-Feb-22	135	16-Feb-22	5.40
				2022	16-Feb-22	135	16-Feb-22	5.90
2022	16-Feb-22	135	16-Feb-22	6.60				
2022	15-Mar-22	99.6	15-Mar-22	6.80				
2022	15-Mar-22	99.6	15-Mar-22	5.40				
2022	15-Mar-22	99.6	15-Mar-22	10.0				
2022	15-Mar-22	99.6	15-Mar-22	7.90				
2022	15-Mar-22	99.6	15-Mar-22	8.40				
2022	13-Jun-22	15.4	13-Jun-22	6.30				
2022	13-Jun-22	15.4	13-Jun-22	6.20				
2022	13-Jun-22	15.4	13-Jun-22	5.70				
2022	13-Jun-22	15.4	13-Jun-22	4.20				
2022	13-Jun-22	15.4	13-Jun-22	4.60				
2022	18-Aug-22	49.5	19-Aug-22	11.0				
2022	18-Aug-22	49.5	19-Aug-22	9.90				
2022	18-Aug-22	49.5	19-Aug-22	8.50				
2022	13-Sep-22	64.9	13-Sep-22	9.30				
2022	13-Sep-22	64.9	14-Sep-22	10.0				
2022	13-Sep-22	64.9	14-Sep-22	6.20				
2022	13-Sep-22	64.9	14-Sep-22	8.80				
2022	13-Sep-22	64.9	14-Sep-22	6.70				
2022	15-Sep-22	59.2	14-Sep-22	10.0				
2022	15-Sep-22	59.2	14-Sep-22	6.20				
2022	15-Sep-22	59.2	14-Sep-22	8.80				
2022	15-Sep-22	59.2	14-Sep-22	6.70				
2022	07-Nov-22	78.3	07-Nov-22	6.20				
2022	07-Nov-22	78.3	07-Nov-22	6.20				
2022	07-Nov-22	78.3	07-Nov-22	5.70				
2022	07-Nov-22	78.3	07-Nov-22	8.90				
2022	07-Nov-22	78.3	07-Nov-22	6.30				
2022	08-Dec-22	90.0	08-Dec-22	7.80				
2022	08-Dec-22	90.0	08-Dec-22	9.20				
2022	08-Dec-22	90.0	08-Dec-22	7.50				
2022	08-Dec-22	90.0	08-Dec-22	7.40				
2022	08-Dec-22	90.0	08-Dec-22	8.90				

Notes: No concurrent water selenium data were available for 2016 tissue samples, so concentrations from the closest sample date from each associated Teck WQ monitoring station was used. No selenium water data was available for MP1 in 2012, so the corresponding data from FR_MULTIPLATE was used for that data point only in 2012. "-" indicates stations where benthic tissue samples were not taken because of frozen conditions. June 2019 water quality data were not available for RG_HENUP and RG_FOUFW. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.5: Paired Benthic Invertebrate Tissue and Water Selenium Concentrations for the FRO LAEMP, 2012 to 2022

Watershed	Exposure Status	Minnow Biological Monitoring Area	Associated Teck Water Monitoring Station Code	Year	Total Selenium in Water		Selenium in Tissue	
					Sample Date	µg/L	Sample Date	mg/kg dw
Fording River	Mine-Exposed	RG_FOBSC	FR_FR4	2012	15-Sep-12	53.8	15-Sep-12	8.40
				2015	17-Sep-15	33.9	17-Sep-15	7.51
				2017	15-Sep-17	72.9	15-Sep-17	5.00
				2018	10-Sep-18	61.3	10-Sep-18	9.00
				2018	10-Sep-18	61.3	10-Sep-18	9.00
				2018	10-Sep-18	61.3	10-Sep-18	8.20
				2018	04-Dec-18	49.1	04-Dec-18	8.00
				2018	04-Dec-18	49.1	04-Dec-18	9.20
				2018	04-Dec-18	49.1	04-Dec-18	7.60
				2019	18-Jun-19	14.2	18-Jun-19	5.30
				2019	18-Jun-19	14.2	18-Jun-19	5.10
				2019	18-Jun-19	14.2	18-Jun-19	5.70
				2019	13-Sep-19	51.8	13-Sep-19	12.5
				2019	13-Sep-19	51.8	13-Sep-19	11.9
				2019	13-Sep-19	51.8	13-Sep-19	12.6
				2019	10-Dec-19	135	10-Dec-19	9.30
				2019	10-Dec-19	135	10-Dec-19	5.90
				2019	10-Dec-19	135	10-Dec-19	5.60
				2020	18-Jun-20	70.7	18-Jun-20	5.00
				2020	18-Jun-20	70.7	18-Jun-20	5.60
		2020	18-Jun-20	70.7	18-Jun-20	4.90		
		2020	18-Jun-20	70.7	18-Jun-20	7.40		
		2020	18-Jun-20	70.7	18-Jun-20	4.20		
		2020	18-Sep-20	107	18-Sep-20	10.0		
		2020	18-Sep-20	107	18-Sep-20	12.0		
		2020	18-Sep-20	107	18-Sep-20	8.20		
		2020	18-Sep-20	107	18-Sep-20	11.0		
		2020	18-Sep-20	107	18-Sep-20	12.0		
		2020	23-Nov-20	113	23-Nov-20	8.40		
		2020	23-Nov-20	113	23-Nov-20	10.0		
		2020	23-Nov-20	113	23-Nov-20	8.30		
		2020	23-Nov-20	113	23-Nov-20	7.90		
		2020	23-Nov-20	113	23-Nov-20	8.70		
		2020	07-Dec-20	115	07-Dec-20	7.30		
		2020	07-Dec-20	115	07-Dec-20	8.60		
		2020	07-Dec-20	115	07-Dec-20	6.10		
		2020	07-Dec-20	115	07-Dec-20	8.10		
		2020	07-Dec-20	115	07-Dec-20	9.40		
		2021	17-Jun-21	52.2	17-Jun-21	6.70		
		2021	17-Jun-21	52.2	17-Jun-21	6.30		
		2021	17-Jun-21	52.2	17-Jun-21	6.50		
		2021	17-Jun-21	52.2	17-Jun-21	5.60		
		2021	17-Jun-21	52.2	17-Jun-21	6.80		
		2021	13-Sep-21	74.4	13-Sep-21	15.0		
		2021	13-Sep-21	74.4	13-Sep-21	16.0		
		2021	13-Sep-21	74.4	13-Sep-21	14.0		
		2021	13-Sep-21	74.4	13-Sep-21	13.0		
		2021	13-Sep-21	74.4	13-Sep-21	10.0		
		2021	09-Dec-21	102	09-Dec-21	6.30		
		2021	09-Dec-21	102	09-Dec-21	7.30		
2021	09-Dec-21	102	09-Dec-21	8.50				
2021	09-Dec-21	102	09-Dec-21	9.90				
2021	09-Dec-21	102	09-Dec-21	11.0				
2022	20-Jan-22	93.2	20-Jan-22	6.00				
2022	20-Jan-22	93.2	20-Jan-22	7.60				
2022	20-Jan-22	93.2	20-Jan-22	7.10				
2022	20-Jan-22	93.2	20-Jan-22	8.70				
2022	20-Jan-22	93.2	20-Jan-22	7.90				
2022	16-Feb-22	137	16-Feb-22	5.00				
2022	16-Feb-22	137	16-Feb-22	7.90				
2022	16-Feb-22	137	16-Feb-22	7.40				
2022	16-Feb-22	137	16-Feb-22	6.70				
2022	16-Feb-22	137	16-Feb-22	9.10				
2022	17-Mar-22	120	17-Mar-22	7.20				
2022	17-Mar-22	120	17-Mar-22	7.30				
2022	17-Mar-22	120	17-Mar-22	9.90				
2022	17-Mar-22	120	17-Mar-22	7.30				
2022	17-Mar-22	120	17-Mar-22	7.30				
2022	28-Jun-22	53.5	28-Jun-22	6.20				
2022	28-Jun-22	53.5	28-Jun-22	7.20				
2022	28-Jun-22	53.5	28-Jun-22	6.90				
2022	28-Jun-22	53.5	28-Jun-22	7.70				
2022	28-Jun-22	53.5	28-Jun-22	7.40				
2022	13-Sep-22	68.2	13-Sep-22	13.0				
2022	13-Sep-22	68.2	13-Sep-22	8.40				
2022	14-Sep-22	107	14-Sep-22	11.0				
2022	14-Sep-22	107	14-Sep-22	10.0				
2022	14-Sep-22	107	14-Sep-22	9.70				
2022	07-Nov-22	87.5	07-Nov-22	5.90				
2022	07-Nov-22	87.5	07-Nov-22	6.80				
2022	07-Nov-22	87.5	07-Nov-22	4.60				
2022	07-Nov-22	87.5	07-Nov-22	6.80				
2022	07-Nov-22	87.5	07-Nov-22	6.10				
2022	08-Dec-22	82.9	08-Dec-22	5.40				
2022	08-Dec-22	82.9	08-Dec-22	7.20				
2022	08-Dec-22	82.9	08-Dec-22	7.80				
2022	08-Dec-22	82.9	08-Dec-22	7.00				
2022	08-Dec-22	82.9	08-Dec-22	6.40				

Notes: No concurrent water selenium data were available for 2016 tissue samples, so concentrations from the closest sample date from each associated Teck WQ monitoring station was used. No selenium water data was available for MP1 in 2012, so the corresponding data from FR_MULTIPLATE was used for that data point only in 2012. "-" indicates stations where benthic tissue samples were not taken because of frozen conditions. June 2019 water quality data were not available for RG_HENUP and RG_FOUWE. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.5: Paired Benthic Invertebrate Tissue and Water Selenium Concentrations for the FRO LAEMP, 2012 to 2022

Watershed	Exposure Status	Minnow Biological Monitoring Area	Associated Teck Water Monitoring Station Code	Year	Total Selenium in Water		Selenium in Tissue	
					Sample Date	µg/L	Sample Date	mg/kg dw
Fording River	Mine-Exposed	RG_FOBCP	FR_FRCP1	2012	15-Sep-12	117	15-Sep-12	7.95
				2015	17-Sep-15	63.8	17-Sep-15	7.68
				2016	12-Sep-16	73.2	12-Sep-16	9.72
				2017	14-Sep-17	128	14-Sep-17	6.40
				2018	09-Sep-18	200	09-Sep-18	9.40
				2018	09-Sep-18	200	09-Sep-18	8.00
				2018	09-Sep-18	200	09-Sep-18	10.0
				2018	09-Sep-18	200	09-Sep-18	8.00
				2018	09-Sep-18	200	09-Sep-18	7.90
				2018	03-Dec-18	603	03-Dec-18	39.0
				2018	03-Dec-18	603	03-Dec-18	8.40
				2018	03-Dec-18	603	03-Dec-18	7.00
				2019	-	-	11-Feb-19	9.40
				2019	-	-	11-Feb-19	10.0
				2019	-	-	11-Feb-19	8.60
				2019	18-Jun-19	28.3	18-Jun-19	2.80
				2019	18-Jun-19	28.3	18-Jun-19	5.30
				2019	18-Jun-19	28.3	18-Jun-19	4.40
				2019	06-Sep-19	57.5	06-Sep-19	9.10
				2019	06-Sep-19	57.5	06-Sep-19	8.40
		2019	06-Sep-19	57.5	06-Sep-19	6.30		
		2019	06-Sep-19	57.5	06-Sep-19	7.60		
		2019	06-Sep-19	57.5	06-Sep-19	7.30		
		2020	17-Jun-20	43.9	17-Jun-20	5.30		
		2020	17-Jun-20	43.9	17-Jun-20	6.40		
		2020	17-Jun-20	43.9	17-Jun-20	5.30		
		2020	17-Jun-20	43.9	17-Jun-20	4.90		
		2020	16-Sep-20	116	16-Sep-20	11.0		
		2020	16-Sep-20	116	16-Sep-20	9.90		
		2020	16-Sep-20	116	16-Sep-20	9.90		
		2020	16-Sep-20	116	16-Sep-20	11.0		
		2020	16-Sep-20	116	16-Sep-20	11.0		
		2020	07-Dec-20	127	07-Dec-20	8.90		
		2020	07-Dec-20	127	07-Dec-20	6.50		
		2020	07-Dec-20	127	07-Dec-20	6.90		
		2020	07-Dec-20	127	07-Dec-20	5.80		
		2020	07-Dec-20	127	07-Dec-20	4.40		
		2021	17-Jun-21	38.4	17-Jun-21	6.00		
		2021	17-Jun-21	38.4	17-Jun-21	6.20		
		2021	17-Jun-21	38.4	17-Jun-21	6.80		
		2021	17-Jun-21	38.4	17-Jun-21	6.10		
		2021	17-Jun-21	38.4	17-Jun-21	7.70		
		2021	13-Sep-21	75.4	13-Sep-21	4.70		
		2021	13-Sep-21	75.4	13-Sep-21	8.70		
		2021	13-Sep-21	75.4	13-Sep-21	12.0		
		2021	13-Sep-21	75.4	13-Sep-21	8.10		
		2021	13-Sep-21	75.4	13-Sep-21	10.0		
2021	14-Dec-21	109	14-Dec-21	7.30				
2021	14-Dec-21	109	14-Dec-21	7.50				
2021	14-Dec-21	109	14-Dec-21	8.50				
2021	14-Dec-21	109	14-Dec-21	5.50				
2021	14-Dec-21	109	14-Dec-21	6.70				
2022	15-Mar-22	94.4	15-Mar-22	9.10				
2022	15-Mar-22	94.4	15-Mar-22	8.30				
2022	15-Mar-22	94.4	15-Mar-22	9.60				
2022	15-Mar-22	94.4	15-Mar-22	11.0				
2022	15-Mar-22	94.4	15-Mar-22	11.0				
2022	29-Jun-22	30.1	29-Jun-22	8.20				
2022	29-Jun-22	30.1	29-Jun-22	8.70				
2022	29-Jun-22	30.1	29-Jun-22	6.80				
2022	29-Jun-22	30.1	29-Jun-22	7.10				
2022	29-Jun-22	30.1	29-Jun-22	8.20				
2022	14-Sep-22	65.9	14-Sep-22	9.80				
2022	14-Sep-22	65.9	14-Sep-22	12.0				
2022	14-Sep-22	65.9	14-Sep-22	9.50				
2022	15-Sep-22	65.0	15-Sep-22	8.80				
2022	15-Sep-22	65.0	15-Sep-22	12.0				

Notes: No concurrent water selenium data were available for 2016 tissue samples, so concentrations from the closest sample date from each associated Teck WQ monitoring station was used. No selenium water data was available for MP1 in 2012, so the corresponding data from FR_MULTIPLATE was used for that data point only in 2012. "-" indicates stations where benthic tissue samples were not taken because of frozen conditions. June 2019 water quality data were not available for RG_HENUP and RG_FOUW. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.5: Paired Benthic Invertebrate Tissue and Water Selenium Concentrations for the FRO LAEMP, 2012 to 2022

Watershed	Exposure Status	Minnow Biological Monitoring Area	Associated Teck Water Monitoring Station Code	Year	Total Selenium in Water		Selenium in Tissue	
					Sample Date	µg/L	Sample Date	mg/kg dw
Fording River	Mine-Exposed	RG_FRCP1SW	FR_FRCP1SW	2017	14-Sep-17	131	14-Sep-17	6.90
				2019	19-Jun-19	30.9	19-Jun-19	48.0
				2019	19-Jun-19	30.9	19-Jun-19	5.70
				2019	19-Jun-19	30.9	19-Jun-19	6.50
				2019	13-Sep-19	54.2	13-Sep-19	7.70
				2019	13-Sep-19	54.2	13-Sep-19	7.70
				2019	13-Sep-19	54.2	13-Sep-19	7.70
				2020	18-Jun-20	42.3	18-Jun-20	39.0
				2020	18-Jun-20	42.3	18-Jun-20	29.0
				2020	18-Jun-20	42.3	18-Jun-20	103
				2020	18-Jun-20	42.3	18-Jun-20	6.70
				2020	18-Jun-20	42.3	18-Jun-20	5.20
				2020	22-Sep-20	112	22-Sep-20	13.0
				2020	22-Sep-20	112	22-Sep-20	16.0
				2020	22-Sep-20	112	22-Sep-20	14.0
				2020	22-Sep-20	112	22-Sep-20	8.20
				2020	22-Sep-20	112	22-Sep-20	7.40
				2021	17-Jun-21	38.7	17-Jun-21	6.80
				2021	17-Jun-21	38.7	17-Jun-21	5.80
				2021	17-Jun-21	38.7	17-Jun-21	9.90
				2021	17-Jun-21	38.7	17-Jun-21	7.50
				2021	17-Jun-21	38.7	17-Jun-21	6.70
				2021	15-Sep-21	78.9	14-Sep-21	7.70
				2021	15-Sep-21	78.9	14-Sep-21	8.00
				2021	15-Sep-21	78.9	14-Sep-21	4.90
				2021	15-Sep-21	78.9	14-Sep-21	6.10
				2021	15-Sep-21	78.9	14-Sep-21	6.90
				2022	28-Jun-22	31.4	28-Jun-22	4.60
				2022	28-Jun-22	31.4	28-Jun-22	8.50
				2022	28-Jun-22	31.4	28-Jun-22	6.00
				2022	28-Jun-22	31.4	28-Jun-22	4.90
				2022	28-Jun-22	31.4	28-Jun-22	5.70
				2022	19-Sep-22	66.8	19-Sep-22	7.00
				2022	19-Sep-22	66.8	19-Sep-22	9.30
		2022	19-Sep-22	66.8	19-Sep-22	9.00		
		2022	19-Sep-22	66.8	19-Sep-22	8.60		
		2022	19-Sep-22	66.8	19-Sep-22	9.00		
		2021	15-Sep-21	85.5	14-Sep-21	9.60		
		2021	15-Sep-21	85.5	14-Sep-21	7.30		
		2021	15-Sep-21	85.5	14-Sep-21	6.70		
		2021	15-Sep-21	85.5	14-Sep-21	3.50		
		2021	15-Sep-21	85.5	14-Sep-21	6.70		
		2021	14-Dec-21	96.1	14-Dec-21	4.40		
		2021	14-Dec-21	96.1	14-Dec-21	4.40		
		2021	14-Dec-21	96.1	14-Dec-21	5.10		
		2021	14-Dec-21	96.1	14-Dec-21	7.40		
		2021	14-Dec-21	96.1	14-Dec-21	6.70		
		2022	19-Jan-22	104	19-Jan-22	3.90		
		2022	19-Jan-22	104	19-Jan-22	4.30		
		2022	19-Jan-22	104	19-Jan-22	4.30		
		2022	19-Jan-22	104	19-Jan-22	3.50		
		2022	19-Jan-22	104	19-Jan-22	4.90		
		2022	16-Feb-22	109	16-Feb-22	5.40		
		2022	16-Feb-22	109	16-Feb-22	4.70		
2022	16-Feb-22	109	16-Feb-22	5.40				
2022	16-Feb-22	109	16-Feb-22	4.10				
2022	16-Feb-22	109	16-Feb-22	5.10				
2022	16-Mar-22	107	16-Mar-22	5.50				
2022	16-Mar-22	107	16-Mar-22	6.50				
2022	16-Mar-22	107	16-Mar-22	5.30				
2022	16-Mar-22	107	16-Mar-22	5.50				
2022	16-Mar-22	107	16-Mar-22	5.10				
2022	28-Jun-22	36.5	28-Jun-22	7.70				
2022	28-Jun-22	36.5	28-Jun-22	6.20				
2022	28-Jun-22	36.5	28-Jun-22	8.30				
2022	28-Jun-22	36.5	28-Jun-22	7.00				
2022	28-Jun-22	36.5	28-Jun-22	7.90				
2022	14-Sep-22	86.2	14-Sep-22	8.90				
2022	14-Sep-22	86.2	14-Sep-22	7.60				
2022	14-Sep-22	86.2	14-Sep-22	7.40				
2022	14-Sep-22	86.2	14-Sep-22	8.90				
2022	14-Sep-22	86.2	14-Sep-22	7.14				
2022	07-Dec-22	102	07-Dec-22	3.60				
2022	07-Dec-22	102	07-Dec-22	6.30				
2022	07-Dec-22	102	07-Dec-22	5.20				
2022	07-Dec-22	102	07-Dec-22	6.40				
2022	07-Dec-22	102	07-Dec-22	6.40				
2017	15-Sep-17	98.9	15-Sep-17	7.40				
2018	07-Mar-18	110	07-Mar-18	6.80				
2018	09-Sep-18	82.0	09-Sep-18	7.50				
2018	09-Sep-18	82.0	09-Sep-18	9.70				
2018	09-Sep-18	82.0	09-Sep-18	8.70				
2018	04-Dec-18	68.7	04-Dec-18	5.30				
		RG_FRUPO	FR_FRRD					

Notes: No concurrent water selenium data were available for 2016 tissue samples, so concentrations from the closest sample date from each associated Teck WQ monitoring station was used. No selenium water data was available for MP1 in 2012, so the corresponding data from FR_MULTIPLATE was used for that data point only in 2012. "-" indicates stations where benthic tissue samples were not taken because of frozen conditions. June 2019 water quality data were not available for RG_HENUP and RG_FOUW. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.5: Paired Benthic Invertebrate Tissue and Water Selenium Concentrations for the FRO LAEMP, 2012 to 2022

Watershed	Exposure Status	Minnow Biological Monitoring Area	Associated Teck Water Monitoring Station Code	Year	Total Selenium in Water		Selenium in Tissue	
					Sample Date	µg/L	Sample Date	mg/kg dw
Fording River	Mine-Exposed	RG_FRUPO	FR_FRRD	2018	04-Dec-18	68.7	04-Dec-18	5.10
				2018	04-Dec-18	68.7	04-Dec-18	5.00
				2019	11-Feb-19	91.1	11-Feb-19	5.10
				2019	11-Feb-19	91.1	11-Feb-19	8.00
				2019	11-Feb-19	91.1	11-Feb-19	6.20
				2019	19-Jun-19	39.1	19-Jun-19	8.10
				2019	19-Jun-19	39.1	19-Jun-19	7.60
				2019	19-Jun-19	39.1	19-Jun-19	5.00
				2019	07-Sep-19	66.2	07-Sep-19	6.10
				2019	07-Sep-19	66.2	07-Sep-19	8.10
				2019	07-Sep-19	66.2	07-Sep-19	6.80
				2019	11-Dec-19	100	11-Dec-19	4.60
				2019	11-Dec-19	100	11-Dec-19	3.90
				2019	11-Dec-19	100	11-Dec-19	4.50
				2020	19-Jun-20	47.2	19-Jun-20	4.50
				2020	19-Jun-20	47.2	19-Jun-20	5.70
				2020	19-Jun-20	47.2	19-Jun-20	4.20
				2020	19-Jun-20	47.2	19-Jun-20	7.70
				2020	19-Jun-20	47.2	19-Jun-20	7.40
				2020	12-Sep-20	94.9	12-Sep-20	9.50
				2020	12-Sep-20	94.9	12-Sep-20	9.10
				2020	12-Sep-20	94.9	12-Sep-20	10.0
				2020	12-Sep-20	94.9	12-Sep-20	9.40
				2020	12-Sep-20	94.9	12-Sep-20	10.0
				2020	10-Dec-20	114	10-Dec-20	5.10
				2020	10-Dec-20	114	10-Dec-20	3.60
				2020	10-Dec-20	114	10-Dec-20	5.00
				2020	10-Dec-20	114	10-Dec-20	5.00
				2020	10-Dec-20	114	10-Dec-20	4.90
				2021	18-Jun-21	59.4	18-Jun-21	8.10
				2021	18-Jun-21	59.4	18-Jun-21	6.70
				2021	18-Jun-21	59.4	18-Jun-21	6.30
				2021	18-Jun-21	59.4	18-Jun-21	7.10
				2021	18-Jun-21	59.4	18-Jun-21	6.60
				2021	19-Sep-21	104	19-Sep-21	9.30
				2021	19-Sep-21	104	19-Sep-21	5.10
				2021	19-Sep-21	104	19-Sep-21	5.90
				2021	19-Sep-21	104	19-Sep-21	5.70
				2021	19-Sep-21	104	19-Sep-21	6.30
				2021	13-Dec-21	102	13-Dec-21	6.10
				2021	13-Dec-21	102	13-Dec-21	5.20
				2021	13-Dec-21	102	13-Dec-21	4.60
				2021	13-Dec-21	102	13-Dec-21	6.20
				2021	13-Dec-21	102	13-Dec-21	4.60
				2022	20-Jan-22	117	20-Jan-22	6.80
				2022	20-Jan-22	117	20-Jan-22	7.10
				2022	20-Jan-22	117	20-Jan-22	6.50
				2022	20-Jan-22	117	20-Jan-22	5.30
				2022	20-Jan-22	117	20-Jan-22	7.70
				2022	17-Feb-22	113	17-Feb-22	5.90
2022	17-Feb-22	113	17-Feb-22	3.70				
2022	17-Feb-22	113	17-Feb-22	6.90				
2022	17-Feb-22	113	17-Feb-22	4.90				
2022	17-Feb-22	113	17-Feb-22	7.70				
2022	15-Mar-22	119	15-Mar-22	7.60				
2022	15-Mar-22	119	15-Mar-22	6.30				
2022	15-Mar-22	119	15-Mar-22	6.50				
2022	15-Mar-22	119	15-Mar-22	6.00				
2022	15-Mar-22	119	15-Mar-22	4.00				
2022	29-Jun-22	36.1	29-Jun-22	7.30				
2022	29-Jun-22	36.1	29-Jun-22	7.50				
2022	29-Jun-22	36.1	29-Jun-22	6.80				
2022	29-Jun-22	36.1	29-Jun-22	4.00				
2022	29-Jun-22	36.1	29-Jun-22	6.80				
2022	18-Sep-22	86.4	18-Sep-22	7.10				
2022	18-Sep-22	86.4	18-Sep-22	6.90				
2022	18-Sep-22	86.4	18-Sep-22	6.90				
2022	18-Sep-22	86.4	18-Sep-22	7.70				
2022	18-Sep-22	86.4	18-Sep-22	8.90				
2022	07-Dec-22	95.4	07-Dec-22	5.70				
2022	07-Dec-22	95.4	07-Dec-22	4.80				
2022	07-Dec-22	95.4	07-Dec-22	3.70				
2022	07-Dec-22	95.4	07-Dec-22	5.50				
2022	07-Dec-22	95.4	07-Dec-22	4.30				
2012	17-Sep-12	76.3	17-Sep-12	6.18				
2015	15-Sep-15	68.2	15-Sep-15	6.92				
2016	-	-	12-Sep-16	3.80				
2017	13-Sep-17	89.6	13-Sep-17	5.20				
2018	07-Mar-18	105	07-Mar-18	3.50				
2018	13-Sep-18	81.7	13-Sep-18	4.30				
2018	13-Sep-18	81.7	13-Sep-18	8.00				
2018	13-Sep-18	81.7	13-Sep-18	5.00				
2018	04-Dec-18	106	04-Dec-18	0.330				
2018	04-Dec-18	106	04-Dec-18	4.40				
2018	04-Dec-18	106	04-Dec-18	5.40				
2019	14-Feb-19	108	14-Feb-19	3.60				
2019	14-Feb-19	108	14-Feb-19	5.00				
2019	14-Feb-19	108	14-Feb-19	8.40				
2019	21-Jun-19	48.4	21-Jun-19	4.70				
2019	21-Jun-19	48.4	21-Jun-19	5.00				
2019	21-Jun-19	48.4	21-Jun-19	5.70				
2019	07-Sep-19	69.7	07-Sep-19	5.40				

Notes: No concurrent water selenium data were available for 2016 tissue samples, so concentrations from the closest sample date from each associated Teck WQ monitoring station was used. No selenium water data was available for MP1 in 2012, so the corresponding data from FR_MULTIPLATE was used for that data point only in 2012. "-" indicates stations where benthic tissue samples were not taken because of frozen conditions. June 2019 water quality data were not available for RG_HENUP and RG_FOUW. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.5: Paired Benthic Invertebrate Tissue and Water Selenium Concentrations for the FRO LAEMP, 2012 to 2022

Watershed	Exposure Status	Minnow Biological Monitoring Area	Associated Teck Water Monitoring Station Code	Year	Total Selenium in Water		Selenium in Tissue	
					Sample Date	µg/L	Sample Date	mg/kg dw
Fording River	Mine-Exposed	RG_FODPO	GH_PC2	2019	07-Sep-19	69.7	07-Sep-19	7.30
				2019	07-Sep-19	69.7	07-Sep-19	5.60
				2019	12-Dec-19	122	12-Dec-19	4.00
				2019	12-Dec-19	122	12-Dec-19	4.00
				2019	12-Dec-19	122	12-Dec-19	3.70
				2020	19-Jun-20	42.4	19-Jun-20	6.20
				2020	19-Jun-20	42.4	19-Jun-20	6.90
				2020	19-Jun-20	42.4	19-Jun-20	5.50
				2020	19-Jun-20	42.4	19-Jun-20	6.70
				2020	19-Jun-20	42.4	19-Jun-20	5.50
				2020	11-Sep-20	84.9	11-Sep-20	9.30
				2020	11-Sep-20	84.9	11-Sep-20	6.70
				2020	11-Sep-20	84.9	11-Sep-20	7.20
				2020	11-Sep-20	84.9	11-Sep-20	7.10
				2020	11-Sep-20	84.9	11-Sep-20	10.0
				2020	09-Dec-20	95.4	09-Dec-20	3.80
				2020	09-Dec-20	95.4	09-Dec-20	3.30
				2020	09-Dec-20	95.4	09-Dec-20	3.10
				2020	09-Dec-20	95.4	09-Dec-20	4.50
				2020	09-Dec-20	95.4	09-Dec-20	4.10
				2021	17-Jun-21	52.0	17-Jun-21	6.00
				2021	17-Jun-21	52.0	17-Jun-21	7.50
				2021	17-Jun-21	52.0	17-Jun-21	6.40
				2021	17-Jun-21	52.0	17-Jun-21	6.20
				2021	17-Jun-21	52.0	17-Jun-21	6.80
				2021	11-Sep-21	82.7	11-Sep-21	4.90
				2021	11-Sep-21	82.7	11-Sep-21	4.60
				2021	11-Sep-21	82.7	11-Sep-21	7.50
				2021	11-Sep-21	82.7	11-Sep-21	6.80
				2021	11-Sep-21	82.7	11-Sep-21	6.10
				2021	14-Dec-21	94.6	14-Dec-21	4.70
				2021	14-Dec-21	94.6	14-Dec-21	4.40
				2021	14-Dec-21	94.6	14-Dec-21	4.90
				2021	14-Dec-21	94.6	14-Dec-21	5.40
				2021	14-Dec-21	94.6	14-Dec-21	5.40
				2022	19-Jan-22	101	19-Jan-22	3.60
				2022	19-Jan-22	101	19-Jan-22	4.40
				2022	19-Jan-22	101	19-Jan-22	4.10
				2022	19-Jan-22	101	19-Jan-22	4.50
				2022	19-Jan-22	101	19-Jan-22	3.50
				2022	16-Feb-22	108	16-Feb-22	6.70
				2022	16-Feb-22	108	16-Feb-22	6.30
				2022	16-Feb-22	108	16-Feb-22	4.10
				2022	16-Feb-22	108	16-Feb-22	5.60
				2022	16-Feb-22	108	16-Feb-22	5.30
				2022	16-Mar-22	103	16-Mar-22	7.80
				2022	16-Mar-22	103	16-Mar-22	7.20
				2022	16-Mar-22	103	16-Mar-22	4.80
				2022	16-Mar-22	103	16-Mar-22	5.60
				2022	16-Mar-22	103	16-Mar-22	6.70
2022	28-Jun-22	35.7	28-Jun-22	9.20				
2022	28-Jun-22	35.7	28-Jun-22	12.0				
2022	28-Jun-22	35.7	28-Jun-22	14.0				
2022	28-Jun-22	35.7	28-Jun-22	17.0				
2022	28-Jun-22	35.7	28-Jun-22	22.0				
2022	18-Sep-22	76.6	18-Sep-22	7.40				
2022	18-Sep-22	76.6	18-Sep-22	9.20				
2022	18-Sep-22	76.6	18-Sep-22	5.20				
2022	18-Sep-22	76.6	18-Sep-22	7.10				
2022	18-Sep-22	76.6	18-Sep-22	6.70				
2022	07-Dec-22	99.9	07-Dec-22	5.20				
2022	07-Dec-22	99.9	07-Dec-22	4.60				
2022	07-Dec-22	99.9	07-Dec-22	5.30				
2022	07-Dec-22	99.9	07-Dec-22	4.00				
2022	07-Dec-22	99.9	07-Dec-22	3.60				
		RG_FO22	FR_FRABCH	2012	16-Sep-12	71.1	16-Sep-12	12.4
				2015	12-Sep-15	68.0	17-Sep-15	7.08
				2017	14-Sep-17	83.3	14-Sep-17	5.40
				2018	12-Mar-18	100	12-Mar-18	6.90
				2018	08-Sep-18	77.7	08-Sep-18	7.00
				2018	08-Sep-18	77.7	08-Sep-18	9.20
				2018	08-Sep-18	77.7	08-Sep-18	7.00
				2018	08-Sep-18	77.7	08-Sep-18	8.90
				2018	08-Sep-18	77.7	08-Sep-18	7.60
				2018	05-Dec-18	94.4	05-Dec-18	3.40
				2018	05-Dec-18	94.4	05-Dec-18	3.90
				2018	05-Dec-18	94.4	05-Dec-18	5.60
				2019	14-Feb-19	99.0	14-Feb-19	4.90
				2019	14-Feb-19	99.0	14-Feb-19	5.80
				2019	14-Feb-19	99.0	14-Feb-19	5.40
				2019	21-Jun-19	52.1	21-Jun-19	7.50
				2019	21-Jun-19	52.1	21-Jun-19	6.80
				2019	21-Jun-19	52.1	21-Jun-19	10.0
				2019	16-Sep-19	70.4	16-Sep-19	7.10
				2019	16-Sep-19	70.4	16-Sep-19	7.80
		2019	16-Sep-19	70.4	16-Sep-19	7.30		
		2019	16-Sep-19	70.4	16-Sep-19	6.70		
		2019	16-Sep-19	70.4	16-Sep-19	6.60		
		2019	11-Dec-19	87.7	11-Dec-19	4.40		
		2019	11-Dec-19	87.7	11-Dec-19	5.40		
		2019	11-Dec-19	87.7	11-Dec-19	4.90		
		2020	19-Jun-20	43.1	19-Jun-20	6.70		

Notes: No concurrent water selenium data were available for 2016 tissue samples, so concentrations from the closest sample date from each associated Teck WQ monitoring station was used. No selenium water data was available for MP1 in 2012, so the corresponding data from FR_MULTIPATE was used for that data point only in 2012. "-" indicates stations where benthic tissue samples were not taken because of frozen conditions. June 2019 water quality data were not available for RG_HENUP and RG_FOUW. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.5: Paired Benthic Invertebrate Tissue and Water Selenium Concentrations for the FRO LAEMP, 2012 to 2022

Watershed	Exposure Status	Minnow Biological Monitoring Area	Associated Teck Water Monitoring Station Code	Year	Total Selenium in Water		Selenium in Tissue	
					Sample Date	µg/L	Sample Date	mg/kg dw
Fording River	Mine-Exposed	RG_FO22	FR_FRABCH	2020	19-Jun-20	43.1	19-Jun-20	5.50
				2020	19-Jun-20	43.1	19-Jun-20	8.20
				2020	11-Sep-20	82.4	11-Sep-20	9.10
				2020	11-Sep-20	82.4	11-Sep-20	8.40
				2020	11-Sep-20	82.4	11-Sep-20	11.0
				2020	11-Sep-20	82.4	11-Sep-20	8.90
				2020	11-Sep-20	82.4	11-Sep-20	10.0
				2020	09-Dec-20	96.2	09-Dec-20	6.10
				2020	09-Dec-20	96.2	09-Dec-20	6.10
				2020	09-Dec-20	96.2	09-Dec-20	7.20
				2020	09-Dec-20	96.2	09-Dec-20	4.00
				2020	09-Dec-20	96.2	09-Dec-20	4.70
				2021	18-Jun-21	50.0	18-Jun-21	9.60
				2021	18-Jun-21	50.0	18-Jun-21	9.60
				2021	18-Jun-21	50.0	18-Jun-21	8.50
				2021	18-Jun-21	50.0	18-Jun-21	6.90
				2021	18-Jun-21	50.0	18-Jun-21	12.0
				2021	12-Sep-21	85.0	12-Sep-21	8.70
				2021	12-Sep-21	85.0	12-Sep-21	9.20
				2021	12-Sep-21	85.0	12-Sep-21	8.60
				2021	12-Sep-21	85.0	12-Sep-21	8.90
				2021	12-Sep-21	85.0	12-Sep-21	8.30
				2021	13-Dec-21	94.5	13-Dec-21	7.40
				2021	13-Dec-21	94.5	13-Dec-21	9.30
				2021	13-Dec-21	94.5	13-Dec-21	8.10
				2021	13-Dec-21	94.5	13-Dec-21	5.60
				2021	13-Dec-21	94.5	13-Dec-21	6.50
				2022	20-Jan-22	101	20-Jan-22	7.70
				2022	20-Jan-22	101	20-Jan-22	7.60
				2022	20-Jan-22	101	20-Jan-22	7.90
		2022	20-Jan-22	101	20-Jan-22	5.20		
		2022	20-Jan-22	101	20-Jan-22	6.60		
		2022	18-Feb-22	106	18-Feb-22	7.60		
		2022	18-Feb-22	106	18-Feb-22	6.30		
		2022	18-Feb-22	106	18-Feb-22	6.90		
		2022	18-Feb-22	106	18-Feb-22	5.30		
		2022	18-Feb-22	106	18-Feb-22	8.50		
		2022	17-Mar-22	96.5	17-Mar-22	10.0		
		2022	17-Mar-22	96.5	17-Mar-22	6.20		
		2022	17-Mar-22	96.5	17-Mar-22	9.60		
		2022	17-Mar-22	96.5	17-Mar-22	8.50		
		2022	17-Mar-22	96.5	17-Mar-22	10.0		
		2022	09-Sep-22	80.4	09-Sep-22	13.0		
		2022	09-Sep-22	80.4	09-Sep-22	8.70		
		2022	09-Sep-22	80.4	09-Sep-22	11.0		
		2022	09-Sep-22	80.4	09-Sep-22	12.0		
		2022	09-Sep-22	80.4	09-Sep-22	9.70		
		2022	08-Nov-22	88.8	08-Nov-22	5.70		
		2022	08-Nov-22	88.8	08-Nov-22	8.10		
		2022	08-Nov-22	88.8	08-Nov-22	6.40		
2022	08-Nov-22	88.8	08-Nov-22	5.70				
2022	08-Nov-22	88.8	08-Nov-22	4.40				
2022	08-Dec-22	94.5	08-Dec-22	9.10				
2022	08-Dec-22	94.5	08-Dec-22	8.90				
2022	08-Dec-22	94.5	08-Dec-22	5.60				
2022	08-Dec-22	94.5	08-Dec-22	1.80				
2022	08-Dec-22	94.5	08-Dec-22	3.50				
		RG_FOUEW	-	2012	16-Sep-12	58.6	16-Sep-12	8.28
				2015	13-Sep-15	58.8	13-Sep-15	6.05
				2017	13-Sep-17	77.9	13-Sep-17	6.60
				2018	06-Sep-18	70.9	06-Sep-18	7.60
				2018	06-Sep-18	70.9	06-Sep-18	7.00
				2018	06-Sep-18	70.9	06-Sep-18	5.00
				2018	05-Dec-18	86.6	05-Dec-18	4.80
				2018	05-Dec-18	86.6	05-Dec-18	5.50
				2018	05-Dec-18	86.6	05-Dec-18	4.70
				2019	13-Feb-19	94.7	13-Feb-19	4.40
				2019	13-Feb-19	94.7	13-Feb-19	6.00
				2019	13-Feb-19	94.7	13-Feb-19	4.40
				2019	-	-	20-Jun-19	5.60
				2019	-	-	20-Jun-19	6.40
				2019	-	-	20-Jun-19	6.60
				2019	04-Sep-19	61.0	04-Sep-19	7.30
				2019	04-Sep-19	61.0	04-Sep-19	6.90
				2019	04-Sep-19	61.0	04-Sep-19	6.00
				2019	11-Dec-19	73.3	11-Dec-19	4.80
				2019	11-Dec-19	73.3	11-Dec-19	4.40
				2019	11-Dec-19	73.3	11-Dec-19	5.50
				2020	19-Jun-20	36.4	19-Jun-20	6.10
				2020	19-Jun-20	36.4	19-Jun-20	4.50
				2020	19-Jun-20	36.4	19-Jun-20	5.00
				2020	19-Jun-20	36.4	19-Jun-20	5.30
				2020	19-Jun-20	36.4	19-Jun-20	6.70
				2020	11-Sep-20	77.1	11-Sep-20	7.50
				2020	11-Sep-20	77.1	11-Sep-20	7.10
				2020	11-Sep-20	77.1	11-Sep-20	9.70
				2020	11-Sep-20	77.1	11-Sep-20	9.10
		2020	11-Sep-20	77.1	11-Sep-20	9.90		
		2020	10-Dec-20	96.3	10-Dec-20	5.80		
		2020	10-Dec-20	96.3	10-Dec-20	7.30		
		2020	10-Dec-20	96.3	10-Dec-20	4.90		
		2020	10-Dec-20	96.3	10-Dec-20	9.10		

Notes: No concurrent water selenium data were available for 2016 tissue samples, so concentrations from the closest sample date from each associated Teck WQ monitoring station was used. No selenium water data was available for MP1 in 2012, so the corresponding data from FR_MULTIPATE was used for that data point only in 2012. "-" indicates stations where benthic tissue samples were not taken because of frozen conditions. June 2019 water quality data were not available for RG_HENUP and RG_FOUW. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FRSC2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.5: Paired Benthic Invertebrate Tissue and Water Selenium Concentrations for the FRO LAEMP, 2012 to 2022

Watershed	Exposure Status	Minnow Biological Monitoring Area	Associated Teck Water Monitoring Station Code	Year	Total Selenium in Water		Selenium in Tissue	
					Sample Date	µg/L	Sample Date	mg/kg dw
Fording River	Mine-Exposed	RG_FOU EW	-	2020	10-Dec-20	96.3	10-Dec-20	9.50
				2021	18-Jun-21	43.2	18-Jun-21	7.00
				2021	18-Jun-21	43.2	18-Jun-21	7.30
				2021	18-Jun-21	43.2	18-Jun-21	6.50
				2021	18-Jun-21	43.2	18-Jun-21	7.30
				2021	18-Jun-21	43.2	18-Jun-21	7.30
				2021	11-Sep-21	76.5	11-Sep-21	8.90
				2021	11-Sep-21	76.5	11-Sep-21	11.0
				2021	11-Sep-21	76.5	11-Sep-21	6.20
				2021	11-Sep-21	76.5	11-Sep-21	7.90
				2021	11-Sep-21	76.5	11-Sep-21	8.50
				2021	13-Dec-21	85.3	13-Dec-21	5.70
				2021	13-Dec-21	85.3	13-Dec-21	5.00
				2021	13-Dec-21	85.3	13-Dec-21	6.60
				2021	13-Dec-21	85.3	13-Dec-21	7.10
				2021	13-Dec-21	85.3	13-Dec-21	5.40
				2022	21-Jan-22	93.0	21-Jan-22	6.80
				2022	21-Jan-22	93.0	21-Jan-22	5.50
				2022	21-Jan-22	93.0	21-Jan-22	10.0
				2022	21-Jan-22	93.0	21-Jan-22	6.10
				2022	21-Jan-22	93.0	21-Jan-22	5.30
				2022	17-Feb-22	99.1	17-Feb-22	6.40
				2022	17-Feb-22	99.1	17-Feb-22	6.90
				2022	17-Feb-22	99.1	17-Feb-22	6.30
				2022	17-Feb-22	99.1	17-Feb-22	7.30
				2022	17-Feb-22	99.1	17-Feb-22	6.70
				2022	17-Mar-22	94.2	17-Mar-22	7.10
				2022	17-Mar-22	94.2	17-Mar-22	5.00
				2022	17-Mar-22	94.2	17-Mar-22	9.70
				2022	17-Mar-22	94.2	17-Mar-22	7.90
				2022	17-Mar-22	94.2	17-Mar-22	8.20
				2022	06-Dec-22	77.1	06-Dec-22	5.10
2022	06-Dec-22	77.1	06-Dec-22	6.10				
2022	06-Dec-22	77.1	06-Dec-22	6.20				
2022	06-Dec-22	77.1	06-Dec-22	5.00				
2022	06-Dec-22	77.1	06-Dec-22	7.40				

Notes: No concurrent water selenium data were available for 2016 tissue samples, so concentrations from the closest sample date from each associated Teck WQ monitoring station was used. No selenium water data was available for MP1 in 2012, so the corresponding data from FR_MULTIPLATE was used for that data point only in 2012. "-" indicates stations where benthic tissue samples were not taken because of frozen conditions. June 2019 water quality data were not available for RG_HENUP and RG_FOU EW. Forward flow of the FRO-S AWTF on 23 December 2021. RG_FR SCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.6: Selenium Species Bioaccumulation Tool^a Predicted Benthic Invertebrate Tissue Selenium Concentrations Compared with Field Measurements, FRO LAEMP, 2022

Area	B-tool Prediction		Field Measurements	
	Date	Predicted Benthic Invertebrate Tissue Selenium Concentration	Date	Mean Benthic Invertebrate Tissue Selenium Concentration
		µg/g dw		µg/g dw
RG_HENUP	12-Sep-22	4.63	12-Sep-22	6.87
RG_FO26	27-Jun-22	6.08	27-Jun-22	3.00
RG_FO26	16-Sep-22	4.43	16-Sep-22	3.73
RG_UFR1	18-Jan-22	4.56	18-Jan-22	4.12
RG_UFR1	17-Feb-22	4.71	17-Feb-22	5.24
RG_UFR1	16-Mar-22	4.54	16-Mar-22	6.06
RG_UFR1	27-Jun-22	6.29	27-Jun-22	4.06
RG_UFR1	19-Sep-22	4.50	19-Sep-22	4.72
RG_UFR1	05-Dec-22	4.46	5-Dec-22	4.28
RG_FRGHSC	21-Jan-22	6.45	21-Jan-22	9.70
RG_FRGHSC	18-Feb-22	6.59	18-Feb-22	8.24
RG_FRGHSC	15-Mar-22	6.18	15-Mar-22	8.82
RG_FRGHSC	29-Jun-22	7.09	29-Jun-22	15.5
RG_FRGHSC	18-Sep-22	6.93	18-Sep-22	16.3
RG_FRGHSC	08-Dec-22	5.93	8-Dec-22	9.32
RG_FODHE	13-Jun-22	7.76	13-Jun-22	5.47
RG_FODHE	19-Sep-22	6.51	19-Sep-22	10.3
RG_FOUCL	13-Jun-22	7.71	13-Jun-22	3.93
RG_FOUCL	16-Sep-22	7.05	16-Sep-22	11.0
RG_FOUCL	05-Dec-22	6.48	5-Dec-22	6.06
RG_FOUNGD	13-Jun-22	7.63	13-Jun-22	8.90
RG_FOUNGD	15-Sep-22	6.56	15-Sep-22	9.68
RG_FOUNGD	06-Dec-22	6.41	6-Dec-22	6.80
RG_FODNGD	13-Jun-22	7.64	13-Jun-22	6.87
RG_FODNGD	15-Sep-22	8.70	15-Sep-22	8.94
RG_FODNGD	06-Dec-22	6.58	6-Dec-22	6.52
RG_MP1	13-Jun-22	7.71	13-Jun-22	5.80
RG_MP1	12-Sep-22	6.91	12-Sep-22	9.36
RG_MP1	07-Dec-22	6.57	7-Dec-22	4.92
RG_FOUSH	13-Jun-22	7.75	13-Jun-22	7.30
RG_FOUSH	12-Sep-22	6.83	12-Sep-22	8.60
RG_FOUSH	06-Dec-22	6.63	6-Dec-22	6.28
RG_FOUKI	18-Jan-22	6.40	18-Jan-22	3.60
RG_FOUKI	15-Feb-22	6.89	15-Feb-22	5.16
RG_FOUKI	15-Mar-22	6.49	15-Mar-22	6.20
RG_FOUKI	27-Jun-22	7.65	27-Jun-22	6.48
RG_FOUKI	13-Sep-22	7.98	13-Sep-22	7.60
RG_FOUKI	08-Dec-22	6.56	8-Dec-22	5.00
RG_FOBKS	19-Jan-22	6.47	19-Jan-22	3.84
RG_FOBKS	15-Feb-22	6.88	15-Feb-22	6.10
RG_FOBKS	15-Mar-22	6.50	15-Mar-22	7.04
RG_FOBKS	13-Jun-22	7.66	13-Jun-22	5.02
RG_FOBKS	13-Sep-22	7.78	12-Sep-22	11.0
RG_FOBKS	13-Sep-22	7.78	13-Sep-22	10.6
RG_FOBKS	07-Nov-22	6.53	7-Nov-22	5.06
RG_SCDSB	08-Dec-22	7.66	8-Dec-22	9.72
RG_SCOUTDS	20-Jan-22	7.02	20-Jan-22	6.98
RG_SCOUTDS	16-Feb-22	6.36	16-Feb-22	5.98
RG_SCOUTDS	15-Mar-22	8.08	15-Mar-22	7.70
RG_SCOUTDS	13-Jun-22	7.41	13-Jun-22	5.40
RG_SCOUTDS	18-Aug-22	8.00	19-Aug-22	9.80
RG_SCOUTDS	13-Sep-22	8.42	14-Sep-22	8.20
RG_SCOUTDS	15-Sep-22	9.10	14-Sep-22	8.20
RG_SCOUTDS	07-Nov-22	9.91	7-Nov-22	6.66
RG_SCOUTDS	08-Dec-22	8.78	8-Dec-22	8.16
RG_FOBSC	20-Jan-22	5.83	20-Jan-22	7.46
RG_FOBSC	16-Feb-22	6.92	16-Feb-22	7.22
RG_FOBSC	17-Mar-22	7.80	17-Mar-22	7.80
RG_FOBSC	28-Jun-22	8.31	28-Jun-22	7.08
RG_FOBSC	14-Sep-22	8.63	14-Sep-22	10.4
RG_FOBSC	07-Nov-22	10.2	7-Nov-22	6.04
RG_FOBSC	08-Dec-22	10.0	8-Dec-22	6.76
RG_FOBSCP	15-Mar-22	7.47	15-Mar-22	9.80
RG_FOBSCP	29-Jun-22	7.79	29-Jun-22	7.80
RG_FOBSCP	15-Sep-22	8.49	15-Sep-22	10.4
RG_FRCP1SW	28-Jun-22	7.66	28-Jun-22	5.94
RG_FRCP1SW	19-Sep-22	7.18	19-Sep-22	8.58
RG_FRSCH2	19-Jan-22	6.24	19-Jan-22	4.18
RG_FRSCH2	16-Feb-22	6.33	16-Feb-22	4.94
RG_FRSCH2	16-Mar-22	6.05	16-Mar-22	5.58
RG_FRSCH2	28-Jun-22	7.38	28-Jun-22	7.42
RG_FRSCH2	14-Sep-22	6.21	14-Sep-22	7.99
RG_FRSCH2	07-Dec-22	6.18	7-Dec-22	5.58
RG_FRUPO	20-Jan-22	6.47	20-Jan-22	6.68
RG_FRUPO	17-Feb-22	6.32	17-Feb-22	5.82
RG_FRUPO	15-Mar-22	6.49	15-Mar-22	6.08
RG_FRUPO	29-Jun-22	7.87	29-Jun-22	6.48
RG_FRUPO	18-Sep-22	6.94	18-Sep-22	7.50
RG_FRUPO	07-Dec-22	6.17	7-Dec-22	4.80
RG_FODPO	19-Jan-22	6.32	19-Jan-22	4.02
RG_FODPO	16-Feb-22	6.56	16-Feb-22	5.60
RG_FODPO	16-Mar-22	6.22	16-Mar-22	6.42
RG_FODPO	28-Jun-22	7.55	28-Jun-22	14.8
RG_FODPO	18-Sep-22	6.54	18-Sep-22	7.12
RG_FODPO	07-Dec-22	6.28	7-Dec-22	4.54
RG_FO22	20-Jan-22	6.51	20-Jan-22	7.00
RG_FO22	18-Feb-22	6.70	18-Feb-22	6.92
RG_FO22	17-Mar-22	6.44	17-Mar-22	8.86
RG_FO22	09-Sep-22	7.86	9-Sep-22	10.9
RG_FO22	08-Nov-22	6.30	8-Nov-22	6.06
RG_FO22	08-Dec-22	6.48	8-Dec-22	5.78
RG_FOU EW	21-Jan-22	6.77	21-Jan-22	6.74
RG_FOU EW	17-Feb-22	8.26	17-Feb-22	6.72
RG_FOU EW	17-Mar-22	6.55	17-Mar-22	7.58
RG_FOU EW	06-Dec-22	6.57	6-Dec-22	5.96

Note: "-" = no data. Forward flow of the FRO-S AWTF on 23 December 2021.

^a Values derived from Bruyn and Luoma (2021) using selenium speciation data and sulphate concentrations for each area on each date to predict benthic invertebrate tissue selenium concentrations. RG_FRSCH2 is located in Fording River Side Channel 2, which has an upstream confluence with the Fording River located downstream of RG_FRCP1SW and a downstream confluence with the Fording River located downstream of RG_FRUPO.

Table G.7: Temporal Changes in Benthic Invertebrate Abundance for Reference and Mine-exposed Areas in the FRO LAEMP, September 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?											Q2. Is the 2022 September mean greater or less than the September historical means (2012 - 2021) and the previous year (2021)?												
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																							
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012-2021	2021
Reference	RG_HENUP	0.406	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FO26	<0.001	base year	-2.4	-	-0.43	1.4	1.1	2.5	2.3	3.7	3.0	4.6	bcd	d	-	cd	abcd	abcd	abc	abc	ab	abc	a	ns	ns
Mine-exposed	RG_FODHE	<0.001	base year	-	-	0.25	-1.5	-0.73	0.019	2.1	2.5	0.034	-1.2	abc	-	-	abc	bc	abc	abc	ab	a	abc	c	ns	ns
	RG_FOUCL	0.936	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns
	RG_FOUNGD	0.072	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FODNGD	0.920	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	ns
	RG_MP1	0.128	ns	ns	-	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	-	ns	-	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FOUSH	0.298	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns
	RG_FOUKI	<0.001	base year	-	-	-3.2	-4.9	-2.3	-2.2	-2.7	-0.14	-0.48	0.35	ab	-	-	abc	c	abc	abc	bc	ab	ab	a	ns	ns
	RG_FOBKS	0.233	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_SCOUADS	0.443	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns
	RG_FOBSC	<0.001	base year	-	-	-1.8	-2.5	-1.2	-0.88	-1.1	0.80	0.45	2.9	ab	-	-	b	b	b	b	b	ab	ab	a	ns	ns
	RG_FOBBCP	<0.001	base year	-	-	-1.4	-2.8	-0.87	-1.2	-1.2	1.5	0.51	0.39	ab	-	-	ab	b	ab	b	b	a	ab	ab	ns	ns
	RG_FRCP1SW	0.006	-	-	-	-	-	base year	-	2.3	3.7	3.9	4.5	-	-	-	-	-	b	-	ab	ab	a	a	ns	ns
	RG_FRUPO	0.026	-	-	-	-	-	base year	-2.5	-3.9	-1.4	-1.8	-1.7	-	-	-	-	-	a	ab	b	ab	ab	ab	ns	ns
	RG_FODPO	<0.001	base year	1.3	-	-1.3	-0.95	-0.045	3.8	-0.80	0.58	0.39	-1.2	b	ab	-	b	b	b	a	b	b	b	b	ns	ns
RG_FO22	0.020	base year	-	-	3.5	-	3.9	1.9	0.46	2.7	0.51	1.4	ab	-	-	ab	-	ab	ab	b	a	b	ab	ns	ns	
RG_FOU EW	0.791	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	

- P-value < 0.05.
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 4 SD Decrease.
- > 5 SD Decrease.
- bold Significant increase or decrease from base year.
- Significantly > than all historical years (or 2020).
- Significantly < than all historical years (or 2020).

Notes: "ns" = not significant; "-" insufficient data for comparison.

^a Year p-value from an ANOVA.

^b Magnitude of Difference (MOD) = $[\text{Mean}_{\text{given year}} - \text{Mean}_{\text{base year}}] / \text{SD}_{\text{base year}}$

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "a".

Table G.8: Temporal Changes in Benthic Invertebrate Richness for Reference and Mine-exposed Areas in the FRO LAEMP, September 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?											Q2. Is the 2022 September mean greater or less than the September historical means (2012 - 2021) and the previous year (2021)?												
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																							
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012-2021	2021
Reference	RG_HENUP	0.251	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FO26	0.013	base year	-3.0	-	-2.5	-1.3	-1.3	1.2	-0.50	-0.44	-1.1	1.1	ab	-	-	ab	ab	ab	a	ab	ab	ab	a	ns	ns
Mine-exposed	RG_FODHE	0.023	base year	-	-	1.2	-0.32	1.5	2.0	3.7	3.4	2.5	1.2	-	-	-	ab	b	ab	ab	a	ab	ab	ab	ns	ns
	RG_FOUCL	0.275	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FOUNGD	0.006	base year	-	-	-1.8	-	-1.8	2.2	0.71	1.3	0.37	-0.90	-	-	-	-	ns	b	a	ab	ab	ab	b	ns	ns
	RG_FODNGD	0.032	-	-	-	base year	-	0.93	3.9	3.0	2.7	1.4	1.8	-	-	-	-	ns	ab	a	ab	ab	ab	ab	ns	ns
	RG_MP1	0.003	base year	0.68	-	3.4	-	3.1	4.7	2.6	2.6	3.8	3.6	c	-	-	-	ns	abc	a	abc	abc	ab	abc	ns	ns
	RG_FOUSH	<0.001	base year	-	-	0.22	-	2.7	3.5	2.3	3.6	1.7	1.8	-	-	-	-	ns	ab	a	ab	a	ab	ab	ns	ns
	RG_FOUKI	0.074	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FOBKS	0.003	base year	-	-	2.7	3.0	4.1	4.5	4.7	4.6	4.6	4.2	-	-	-	ab	ab	a	a	a	a	a	a	ns	ns
	RG_SCOUTDS	0.916	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FOBSC	0.002	base year	-	-	1.9	2.7	4.4	2.6	2.2	2.9	3.3	4.9	-	-	-	ab	ab	ab	ab	b	ab	ab	a	ns	ns
	RG_FOBBCP	0.005	base year	-	-	1.2	1.8	3.0	2.2	1.7	2.3	2.9	4.2	-	-	-	ab	ab	ab	ab	b	ab	ab	a	ns	ns
	RG_FRCP1SW	0.234	-	-	-	-	-	ns	-	ns	ns	ns	ns	-	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns
	RG_FRUPO	0.015	-	-	-	-	-	base year	0.90	-1.2	1.1	0.99	1.8	-	-	-	-	ns	ab	ab	b	ab	ab	a	ns	ns
	RG_FODPO	<0.001	base year	-4.0	-	-3.3	-0.56	-1.7	2.3	-0.017	3.3	1.4	-0.37	abcde	-	-	-	de	bcde	cde	ab	bcd	a	abc	cde	ns
RG_FO22	0.010	base year	-	-	1.5	-	3.1	1.2	1.2	3.5	1.8	3.5	-	-	-	-	ns	ab	b	b	a	ab	a	ns	ns	
RG_FOU EW	0.052	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	

- P-value < 0.05.
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 4 SD Decrease.
- > 5 SD Decrease.
- bold Significant increase or decrease from base year.
- Significantly > than all historical years (or 2020).
- Significantly < than all historical years (or 2020).

Notes: "ns" = not significant; "-" insufficient data for comparison.

^a Year p-value from an ANOVA.

^b Magnitude of Difference (MOD) = $[\text{Mean}_{\text{given year}} - \text{Mean}_{\text{base year}}] / \text{SD}_{\text{base year}}$

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "a".

Table G.9: Temporal Changes in Benthic Invertebrate Percent EPT for Reference and Mine-exposed Areas in the FRO LAEMP, September 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?											Q2. Is the 2022 September mean greater or less than the September historical means (2012 - 2021) and the previous year (2021)?													
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																								
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012-2021	2021	
Reference	RG_HENUP	0.364	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FO26	0.131	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns
Mine-exposed	RG_FODHE	0.003	base year	-	-	-2.6	-1.0	-0.16	-2.2	-3.9	-4.5	-1.2	-1.6	-	-	-	abc	abc	a	abc	bc	c	a	ab	ns	ns	
	RG_FOUCL	0.002	-	-	-	-	-	-	-	base year	1.0	3.4	3.2	-	-	-	-	-	-	ns	b	ab	a	a	ns	ns	
	RG_FOUNGD	0.066	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	
	RG_FODNGD	0.002	-	-	-	base year	-	-2.1	-2.6	-2.9	-3.6	-1.9	-4.9	-	-	-	-	ns	ab	ab	ab	ab	ab	a	b	ns	↓
	RG_MP1	<0.001	base year	-2.5	-	0.91	-	3.3	1.1	-5.1	0.95	2.2	-0.67	ab	-	-	-	ns	a	ab	c	ab	a	b	ns	↓	
	RG_FOUSH	<0.001	base year	-	-	2.0	-	1.0	-0.60	-3.2	-3.8	-1.2	-5.2	-	-	-	-	ns	a	ab	bcd	cd	abc	d	ns	↓	
	RG_FOUKI	<0.001	base year	-	-	-1.4	-5.0	-2.9	-3.7	-4.6	-4.4	-5.9	-7.9	-	-	-	ab	bcd	ab	abc	bc	bc	cd	d	ns	ns	
	RG_FOBKS	0.021	base year	-	-	-1.5	-2.1	-2.4	-2.7	-1.5	-2.4	-3.0	-4.0	-	-	-	ab	ab	ab	ab	ab	ab	ab	b	ns	ns	
	RG_SCOUTDS	<0.001	-	-	-	-	-	-	-	-	base year	-1.9	-1.8	-4.6	-	-	-	-	-	ns	a	a	a	b	↓	↓	
	RG_FOBSC	0.001	base year	-	-	-0.19	-2.0	-0.98	-1.2	0.29	-0.93	-2.5	-3.2	-	-	-	ab	ab	ab	ab	a	ab	b	b	ns	ns	
	RG_FOBCP	<0.001	base year	-	-	-0.99	-2.6	-3.3	-2.5	-4.6	-2.2	-3.3	-4.8	-	-	-	a	ab	ab	a	b	a	ab	b	ns	ns	
	RG_FRCP1SW	0.069	-	-	-	-	-	ns	-	ns	ns	ns	ns	-	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	
	RG_FRUPO	0.039	-	-	-	-	-	base year	-1.8	-1.8	-2.8	-2.4	-3.8	-	-	-	-	ns	a	ab	ab	ab	ab	b	ns	ns	
	RG_FODPO	<0.001	base year	3.9	-	2.6	0.59	-2.6	1.3	-1.3	-0.99	1.1	0.28	abcd	-	-	ab	abcd	d	abc	cd	bcd	abcd	abcd	ns	ns	
RG_FO22	0.160	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns		
RG_FOU EW	0.003	base year	-	-	-1.4	-3.0	-1.8	-2.6	-4.4	-3.0	-1.1	-3.7	-	-	-	ab	ab	ab	ab	b	ab	a	b	ns	↓		

- P-value < 0.05.
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 4 SD Decrease.
- > 5 SD Decrease.
- bold** Significant increase or decrease from base year.
- Significantly > than all historical years (or 2020).
- Significantly < than all historical years (or 2020).

Notes: "ns" = not significant; "-" insufficient data for comparison.

^a Year p-value from an ANOVA.

^b Magnitude of Difference (MOD) = [Mean_{given year} - Mean_{base year}] / SD_{base year}.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "a".

Table G.10: Temporal Changes in Benthic Invertebrate Percent Ephemeroptera for Reference and Mine-exposed Areas in the FRO LAEMP, September 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?											Q2. Is the 2022 September mean greater or less than the September historical means (2012 - 2021) and the previous year (2021)?													
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																								
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012-2021	2021	
Reference	RG_HENUP	0.028	base year	3.4	-	1.6	3.6	-1.2	2.2	1.8	1.6	0.064	-0.20	abc	-	-	abc	a	c	abc	abc	abc	abc	bc	ns	ns	
	RG_FO26	0.022	base year	3.8	-	4.9	2.5	0.82	3.9	3.4	1.8	3.2	1.4	b	-	-	a	ab	ab	a	ab	ab	ab	ab	ns	ns	
Mine-exposed	RG_FODHE	<0.001	base year	-	-	-3.8	-0.82	0.33	-2.0	-4.2	-5.8	-1.3	-2.6	-	-	-	abc	ab	a	ab	bc	c	a	ab	ns	ns	
	RG_FOUCL	<0.001	-	-	-	-	-	-	-	base year	0.58	4.4	3.5	-	-	-	-	-	-	ns	b	b	a	a	ns	ns	
	RG_FOUNGD	<0.001	base year	-	-	2.9	-	-3.0	-0.55	3.4	-0.63	3.1	-1.2	-	-	-	-	ns	c	bc	a	bc	a	c	ns	↓	
	RG_FODNGD	<0.001	-	-	-	base year	-	-3.7	-4.2	-3.4	-5.6	-2.0	-6.4	-	-	-	-	ns	abcd	bcd	abc	cd	ab	d	ns	↓	
	RG_MP1	<0.001	base year	-4.3	-	-1.2	-	1.3	-0.96	-7.2	-1.7	0.91	-2.3	abc	-	-	-	ns	ab	abc	d	abc	a	bc	ns	↓	
	RG_FOUSH	<0.001	base year	-	-	1.8	-	-0.59	-3.7	-5.3	-6.3	-3.8	-7.8	-	-	-	-	ns	ab	bc	cde	de	bcd	e	ns	↓	
	RG_FOUKI	<0.001	base year	-	-	-1.9	-7.7	-5.9	-4.5	-5.9	-6.5	-8.1	-9.7	-	-	-	ab	cde	cd	bc	cd	cd	de	e	ns	ns	
	RG_FOBKS	<0.001	base year	-	-	-4.4	-6.0	-5.9	-4.9	-5.3	-5.5	-5.3	-7.2	-	-	-	ab	b	b	b	b	b	b	b	ns	ns	
	RG_SCOUTDS	0.006	-	-	-	-	-	-	-	-	base year	-2.1	-2.5	-3.2	-	-	-	-	-	-	ns	a	ab	ab	b	ns	ns
	RG_FOBSC	<0.001	base year	-	-	-1.9	-5.3	-4.1	-2.2	-1.9	-4.2	-4.6	-5.1	-	-	-	abcd	bcd	abcd	abc	ab	bcd	cd	d	ns	ns	
	RG_FOBBCP	<0.001	base year	-	-	-11	-11	-12	-6.7	-8.9	-8.5	-10	-9.4	-	-	-	c	c	c	b	c	bc	c	c	ns	ns	
	RG_FRCP1SW	0.262	-	-	-	-	-	ns	-	ns	ns	ns	ns	-	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	
	RG_FRUPO	0.043	-	-	-	-	-	-	base year	1.1	0.54	1.9	-0.75	0.39	-	-	-	-	ns	ab	ab	ab	a	b	ab	ns	ns
	RG_FODPO	<0.001	base year	-3.0	-	-5.2	-3.9	-6.1	-4.9	-3.7	-3.6	-5.1	-4.6	a	-	-	b	ab	b	b	b	ab	b	b	ns	ns	
RG_FO22	0.007	base year	-	-	-3.4	-	-5.2	-3.8	-3.2	-4.0	-4.2	-4.0	-	-	-	-	ns	b	b	ab	b	b	b	ns	ns		
RG_FOU EW	<0.001	base year	-	-	-5.2	-7.0	-7.3	-6.2	-5.4	-7.6	-6.9	-4.9	-	-	-	bc	bc	bc	bc	bc	c	bc	b	ns	ns		

- P-value < 0.05.
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 4 SD Decrease.
- > 5 SD Decrease.
- bold** Significant increase or decrease from base year.
- Significantly > than all historical years (or 2020).
- Significantly < than all historical years (or 2020).

Notes: "ns" = not significant; "-" insufficient data for comparison.

^a Year p-value from an ANOVA.

^b Magnitude of Difference (MOD) = $[\text{Mean}_{\text{given year}} - \text{Mean}_{\text{base year}}] / \text{SD}_{\text{base year}}$

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "a".

Table G.11: Temporal Changes in Benthic Invertebrate Percent Plecoptera for Reference and Mine-exposed Areas in the FRO LAEMP, September 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?												Q2. Is the 2022 September mean greater or less than the September historical means (2012 - 2021) and the previous year (2021)?												
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																								
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012-2021	2021
Reference	RG_HENUP	0.004	base year	-1.6	-	1.7	-1.9	2.1	-2.3	-0.32	-0.99	0.96	0.96	-0.72	-	ab	-	a	ab	a	b	ab	ab	a	ab	ns	ns
	RG_FO26	<0.001	base year	0.20	-	-1.7	-1.2	-1.4	-3.3	-4.2	-0.57	-1.2	-1.2	-3.4	-	ab	-	abc	abc	abc	bc	c	a	ab	bc	ns	ns
Mine-exposed	RG_FODHE	0.109	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FOUCL	0.413	-	-	-	-	-	-	-	ns	ns	ns	ns	ns	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FOUNGD	0.006	base year	-	-	0.75	-	0.98	0.24	-2.3	0.83	-1.7	-1.7	-1.2	-	ns	-	ab	ns	ab	ab	b	a	ab	ab	ns	ns
	RG_FODNGD	0.609	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	-	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_MP1	<0.001	base year	3.5	-	5.2	-	5.3	4.8	0.69	4.0	0.52	0.52	1.6	-	abc	-	ab	ns	ab	a	c	ab	c	bc	ns	ns
	RG_FOUSH	<0.001	base year	-	-	2.5	-	3.5	4.7	2.0	2.4	2.5	2.5	-0.54	-	ns	-	abc	ns	ab	a	bc	ab	ab	c	ns	↓
	RG_FOUKI	<0.001	base year	-	-	1.2	2.0	3.1	0.15	-0.20	1.9	0.61	0.61	-2.7	-	ns	-	ab	ab	a	b	bc	ab	ab	c	ns	↓
	RG_FOBKS	0.002	base year	-	-	4.0	3.9	2.6	2.2	4.8	2.5	1.6	1.6	1.9	-	ns	-	ab	ab	ab	b	a	ab	b	b	ns	ns
	RG_SCOUTDS	<0.001	-	-	-	-	-	-	-	base year	-0.72	-0.16	-0.16	-4.5	-	-	-	-	-	ns	ns	a	a	a	b	↓	↓
	RG_FOBSC	0.003	base year	-	-	3.2	2.9	2.2	0.83	4.1	4.0	2.5	2.5	1.0	-	ns	-	ab	ab	ab	b	a	a	ab	b	ns	ns
	RG_FOBBCP	<0.001	base year	-	-	7.2	4.9	5.6	3.8	3.6	5.4	5.4	5.4	2.7	-	ns	-	a	abc	abc	abc	bc	ab	ab	cd	ns	↓
	RG_FRCP1SW	0.988	-	-	-	-	-	ns	-	ns	ns	ns	ns	ns	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FRUPO	0.732	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FODPO	0.342	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FO22	0.384	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	-	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
RG_FOU EW	0.003	base year	-	-	1.5	1.2	2.3	1.7	-0.00095	1.9	2.8	2.8	-0.47	-	ns	-	ab	ab	ab	ab	b	ab	a	b	ns	↓	

- P-value < 0.05.
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 4 SD Decrease.
- > 5 SD Decrease.
- bold** Significant increase or decrease from base year.
- Significantly > than all historical years (or 2020).
- Significantly < than all historical years (or 2020).

Notes: "ns" = not significant; "-" insufficient data for comparison.

^a Year p-value from an ANOVA.

^b Magnitude of Difference (MOD) = $[\text{Mean}_{\text{given year}} - \text{Mean}_{\text{base year}}] / \text{SD}_{\text{base year}}$

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "a".

Table G.12: Temporal Changes in Benthic Invertebrate Percent Tricoptera for Reference and Mine-exposed Areas in the FRO LAEMP, September 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?											Q2. Is the 2022 September mean greater or less than the September historical means (2012 - 2021) and the previous year (2021)?													
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																								
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012-2021	2021	
Reference	RG_HENUP	0.069	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	
	RG_FO26	<0.001	base year	-2.7	-	-4.0	-1.5	3.6	-1.3	-0.90	-0.85	-0.74	0.073	abc	-	-	c	bc	a	bc	bc	bc	bc	ab	ns	ns	
Mine-exposed	RG_FODHE	<0.001	base year	-	-	-4.5	-5.6	-2.5	-2.2	-2.9	-1.3	-1.8	1.1	-	-	-	bc	c	abc	bc	bc	ab	b	a	ns	↑	
	RG_FOUCL	0.945	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	
	RG_FOUNGD	0.002	base year	-	-	-1.9	-	-0.58	-0.15	-1.5	1.8	-0.40	2.0	-	-	-	-	ns	ab	ab	b	a	ab	a	ns	ns	
	RG_FODNGD	0.186	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	
	RG_MP1	0.025	base year	0.14	-	1.4	-	2.7	1.9	1.8	4.0	3.8	3.0	c	-	-	-	ns	abc	abc	abc	a	ab	abc	ns	ns	
	RG_FOUSH	0.003	base year	-	-	-0.78	-	0.83	0.80	1.5	1.7	3.3	3.3	-	-	-	-	ns	ab	ab	ab	ab	a	a	ns	ns	
	RG_FOUKI	0.046	base year	-	-	-1.5	1.5	1.7	-1.3	-0.52	0.31	0.64	-0.019	-	-	-	ab	ab	a	b	ab	ab	ab	ab	ab	ns	ns
	RG_FOBKS	0.043	base year	-	-	0.98	3.2	3.8	1.3	1.3	3.3	2.3	3.1	-	-	-	ab	ab	a	ab	ab	ab	ab	ab	ab	ns	ns
	RG_SCOUTDS	0.826	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FOBSC	0.003	base year	-	-	-0.63	1.9	2.8	0.41	-1.8	0.34	-0.0070	0.88	-	-	-	ab	a	a	ab	b	ab	ab	a	ns	ns	
	RG_FOBPCP	<0.001	base year	-	-	2.7	6.1	5.1	1.8	-0.24	1.8	3.0	4.1	-	-	-	abcd	a	ab	bcd	d	bc	abc	a	ns	ns	
	RG_FRCP1SW	0.808	-	-	-	-	-	ns	-	ns	ns	ns	ns	-	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FRUPO	0.142	-	-	-	-	-	ns	ns	ns	ns	ns	ns	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FODPO	<0.001	base year	-0.13	-	5.6	6.6	4.0	-0.87	2.1	1.3	3.0	3.7	cde	-	-	ab	a	abcd	e	bcd	cde	abcd	abc	ns	ns	
RG_FO22	<0.001	base year	-	-	2.7	-	3.7	0.73	4.3	2.8	4.7	3.3	-	-	-	-	ns	abc	c	a	ab	a	ab	ns	ns		
RG_FOU EW	0.029	base year	-	-	2.7	2.9	2.8	0.89	-0.77	2.0	1.8	1.2	-	-	-	ab	ab	ab	ab	b	a	ab	ab	ns	ns		

- P-value < 0.05.
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 4 SD Decrease.
- > 5 SD Decrease.
- bold** Significant increase or decrease from base year.
- Significantly > than all historical years (or 2020).
- Significantly < than all historical years (or 2020).

Notes: "ns" = not significant; "-" insufficient data for comparison.

^a Year p-value from an ANOVA.

^b Magnitude of Difference (MOD) = [Mean_{given year} - Mean_{base year}] / SD_{base year}.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "a".

Table G.13: Temporal Changes in Benthic Invertebrate Percent Chironomidae for Reference and Mine-exposed Areas in the FRO LAEMP, September 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?											Q2. Is the 2022 September mean greater or less than the September historical means (2012 - 2021) and the previous year (2021)?												
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																							
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012-2021	2021
Reference	RG_HENUP	0.054	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FO26	<0.001	base year	-2.3	-	-0.71	0.73	-2.1	-1.1	0.82	-1.2	-2.8	-1.7	ab	-	-	ab	ab	ab	a	ab	b	ab	ns	ns	
Mine-exposed	RG_FODHE	<0.001	base year	-	-	4.9	1.8	0.74	1.9	6.2	6.7	1.2	0.31	-	-	-	ab	bc	bc	bc	a	a	c	c	ns	ns
	RG_FOUCL	<0.001	-	-	-	-	-	-	-	base year	-2.9	-6.0	-5.7	-	-	-	-	-	ns	a	b	c	c	ns	ns	
	RG_FOUNGD	<0.001	base year	-	-	-0.44	-	4.5	0.035	0.52	-0.55	-0.65	-1.2	-	-	-	-	ns	a	b	b	b	b	b	ns	ns
	RG_FODNGD	0.012	-	-	-	base year	-	2.8	1.1	2.7	3.1	0.095	0.55	-	-	-	-	ns	ab	ab	ab	a	b	ab	ns	ns
	RG_MP1	<0.001	base year	2.2	-	-0.020	-	-4.4	-2.7	7.8	-3.4	-5.6	-5.1	bc	-	-	-	ns	cde	cd	a	cde	e	de	ns	ns
	RG_FOUSH	<0.001	base year	-	-	-0.26	-	1.9	2.6	7.2	4.9	-1.2	0.62	-	-	-	-	ns	bcd	bc	a	ab	d	cd	ns	ns
	RG_FOUKI	<0.001	base year	-	-	1.4	7.8	3.9	1.2	6.4	4.2	1.1	3.1	-	-	-	bcd	a	abc	cd	a	ab	cd	bcd	ns	ns
	RG_FOBKS	0.001	base year	-	-	1.2	5.2	2.8	0.72	1.6	0.84	0.28	0.47	-	-	-	ab	a	ab	b	ab	b	b	b	ns	ns
	RG_SCOUADS	0.163	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FOBSC	<0.001	base year	-	-	0.51	6.1	4.6	0.094	3.1	1.6	-0.36	1.2	-	-	-	bcd	a	ab	d	abc	bcd	d	bcd	ns	ns
	RG_FOBCEP	<0.001	base year	-	-	3.4	5.3	4.8	0.38	6.3	1.5	0.22	1.6	-	-	-	abc	a	ab	c	a	bc	c	bc	ns	ns
	RG_FRCP1SW	0.180	-	-	-	-	-	ns	-	ns	ns	ns	ns	-	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns
	RG_FRUPO	<0.001	-	-	-	-	-	base year	0.33	2.3	2.4	2.6	4.6	-	-	-	-	ns	b	b	ab	ab	ab	a	ns	ns
	RG_FODPO	<0.001	base year	-4.0	-	-1.8	0.30	5.1	-0.71	2.1	1.8	-2.0	0.26	bcde	-	-	cde	bcde	a	cde	ab	abc	de	bcd	ns	ns
	RG_FO22	<0.001	base year	-	-	-1.2	-	-3.6	-5.0	-4.2	-2.6	-5.5	-2.4	-	-	-	-	ns	abc	c	bc	ab	c	ab	ns	↑
RG_FOUJEW	<0.001	base year	-	-	3.7	4.6	0.21	1.2	3.3	3.2	-0.16	4.7	-	-	-	abc	ab	bcd	bcd	abc	abc	d	a	ns	↑	

- P-value < 0.05.
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 4 SD Decrease.
- > 5 SD Decrease.
- bold Significant increase or decrease from base year.
- Significantly > than all historical years (or 2020).
- Significantly < than all historical years (or 2020).

Notes: "ns" = not significant; "-" insufficient data for comparison.

^a Year p-value from an ANOVA.

^b Magnitude of Difference (MOD) = $[\text{Mean}_{\text{given year}} - \text{Mean}_{\text{base year}}] / \text{SD}_{\text{base year}}$

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "a".

Table G.14: Temporal Changes in Benthic Invertebrate EPT Abundance for Reference and Mine-exposed Areas in the FRO LAEMP, September 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?											Q2. Is the 2022 September mean greater or less than the September historical means (2012 - 2021) and the previous year (2021)?												
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																							
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012-2021	2021
Reference	RG_HENUP	0.483	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FO26	<0.001	base year	-1.8	-	-0.10	1.4	1.5	2.4	2.1	3.6	3.2	3.9	bcd	-	-	cd	abcd	abcd	abc	abc	ab	abc	a	ns	ns
Mine-exposed	RG_FODHE	0.065	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FOUCL	0.779	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FOUNGD	0.032	base year	-	-	-1.3	-	-2.2	1.5	1.7	0.99	1.0	-0.090	-	-	-	-	ns	b	ab	a	ab	ab	ab	ns	ns
	RG_FODNGD	0.972	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_MP1	0.002	base year	-3.9	-	-2.8	-	-0.11	-0.77	-3.2	-1.4	0.22	-2.4	ab	-	-	-	ns	ab	ab	b	ab	a	ab	ns	ns
	RG_FOUSH	0.235	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FOUKI	0.006	base year	-	-	-3.2	-5.5	-2.8	-2.9	-3.5	-1.3	-2.1	-2.2	-	-	-	ab	b	ab	ab	ab	a	ab	ab	ns	ns
	RG_FOBKS	0.434	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_SCOUTDS	1.000	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FOBSC	0.018	base year	-	-	-1.7	-2.7	-1.3	-1.1	-0.95	0.47	-0.29	1.4	-	-	-	ab	b	ab	ab	ab	ab	ab	a	ns	ns
	RG_FOBBCP	<0.001	base year	-	-	-1.5	-3.0	-1.5	-1.6	-2.1	0.95	-0.28	-0.82	-	-	-	ab	b	ab	b	b	a	ab	ab	ns	ns
	RG_FRCP1SW	0.012	-	-	-	-	-	base year	-	2.6	4.1	3.8	4.2	-	-	-	-	ns	-	ns	ab	a	a	a	ns	ns
	RG_FRUPO	0.016	-	-	-	-	-	base year	-2.8	-4.1	-2.1	-2.3	-2.6	-	-	-	-	ns	a	ab	b	ab	ab	ab	ns	ns
	RG_FODPO	<0.001	base year	2.2	-	-0.61	-0.73	-0.81	3.9	-1.1	0.24	0.64	-1.1	b	-	-	b	b	b	a	b	b	b	b	ns	ns
RG_FO22	0.133	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	
RG_FOU EW	0.450	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	

- P-value < 0.05.
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 4 SD Decrease.
- > 5 SD Decrease.
- bold** Significant increase or decrease from base year.
- Significantly > than all historical years (or 2020).
- Significantly < than all historical years (or 2020).

Notes: "ns" = not significant; "-" insufficient data for comparison.

^a Year p-value from an ANOVA.

^b Magnitude of Difference (MOD) = [Mean_{given year} - Mean_{base year}] / SD_{base year}.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "a".

Table G.15: Temporal Changes in Benthic Invertebrate Ephemeroptera Abundance for Reference and Mine-exposed Areas in the FRO LAEMP, September 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?											Q2. Is the 2022 September mean greater or less than the September historical means (2012 - 2021) and the previous year (2021)?												
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																							
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012-2021	2021
Reference	RG_HENUP	0.420	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FO26	<0.001	base year	-1.5	-	0.98	2.3	1.4	4.0	3.5	4.5	4.3	5.3	cd	-	-	bcd	abcd	bcd	ab	abc	ab	ab	a	ns	ns
Mine-exposed	RG_FODHE	0.004	base year	-	-	-0.75	-1.9	-0.79	-0.51	1.2	0.94	-0.28	-2.0	-	-	-	ab	ab	ab	ab	a	a	ab	b	ns	ns
	RG_FOUCL	0.267	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns
	RG_FOUNGD	<0.001	base year	-	-	-1.4	-	-2.9	1.7	2.6	0.70	1.6	-0.32	-	-	-	-	ns	c	ab	a	abc	ab	bc	ns	ns
	RG_FODNGD	0.928	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_MP1	<0.001	base year	-5.2	-	-3.9	-	-0.78	-1.6	-4.6	-2.5	-0.16	-3.4	ab	-	-	-	ns	abc	abc	d	abcd	a	bcd	ns	↓
	RG_FOUSH	0.002	base year	-	-	-1.2	-	-3.2	-2.3	-3.1	-2.5	-3.2	-3.4	-	-	-	-	ns	ab	ab	b	ab	b	b	ns	ns
	RG_FOUKI	<0.001	base year	-	-	-4.0	-7.1	-4.1	-3.6	-4.5	-2.1	-3.1	-3.0	-	-	-	abc	c	bc	abc	bc	ab	ab	ab	ns	ns
	RG_FOBKS	0.114	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_SCOUTDS	1.000	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns
	RG_FOBSC	0.002	base year	-	-	-2.4	-4.1	-2.5	-1.5	-1.7	-0.71	-1.2	0.68	-	-	-	ab	b	ab	ab	ab	ab	ab	a	ns	ns
	RG_FOBBCP	0.001	base year	-	-	-5.0	-5.8	-5.0	-3.1	-3.8	-1.1	-3.0	-2.7	-	-	-	b	b	b	ab	b	a	ab	ab	ns	ns
	RG_FRCP1SW	0.010	-	-	-	-	-	base year	-	2.5	4.3	3.2	4.0	-	-	-	-	ns	-	ns	ab	a	ab	a	ns	ns
	RG_FRUPO	0.003	-	-	-	-	-	base year	-0.62	-2.2	0.85	-2.4	-0.79	-	-	-	-	ns	ab	ab	b	a	b	ab	ns	ns
	RG_FODPO	0.003	base year	-0.63	-	-4.7	-3.1	-5.6	-0.95	-2.9	-1.8	-3.5	-4.3	a	-	-	bc	abc	c	a	abc	ab	abc	bc	ns	ns
RG_FO22	0.155	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	
RG_FOU EW	0.673	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	

- P-value < 0.05.
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 4 SD Decrease.
- > 5 SD Decrease.
- bold** Significant increase or decrease from base year.
- Significantly > than all historical years (or 2020).
- Significantly < than all historical years (or 2020).

Notes: "ns" = not significant; "-" insufficient data for comparison.

^a Year p-value from an ANOVA.

^b Magnitude of Difference (MOD) = [Mean_{given year} - Mean_{base year}] / SD_{base year}.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "a".

Table G.16: Temporal Changes in Benthic Invertebrate Plecoptera Abundance for Reference and Mine-exposed Areas in the FRO LAEMP, September 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?											Q2. Is the 2022 September mean greater or less than the September historical means (2012 - 2021) and the previous year (2021)?												
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																							
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012-2021	2021
Reference	RG_HENUP	0.051	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
	RG_FO26	0.037	base year	-1.8	-	-1.2	0.30	-0.016	-0.16	-0.76	1.9	1.2	0.91	ab	b	-	ab	ab	ab	ab	b	a	ab	ab	ns	ns
Mine-exposed	RG_FODHE	0.089	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	
	RG_FOUCL	1.000	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	-	ns	ns	ns	ns	ns	ns	
	RG_FOUNGD	0.510	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	
	RG_FODNGD	0.834	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	
	RG_MP1	0.037	base year	-0.85	-	0.34	-	2.1	1.7	-0.63	0.80	0.0088	-0.96	ab	ab	-	ab	-	ab	a	ab	ab	ab	b	ns	ns
	RG_FOUSH	0.145	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	
	RG_FOUKI	0.007	base year	-	-	-1.9	-3.3	-0.19	-1.6	-2.2	0.86	-0.026	-1.2	ab	-	-	ab	b	ab	ab	b	a	ab	ab	ns	ns
	RG_FOBKS	0.310	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_SCOUTDS	0.619	-	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	-	ns	ns	ns	ns	ns	ns
	RG_FOBSC	0.010	base year	-	-	0.037	-0.80	0.12	-0.33	1.2	2.7	1.7	2.5	ab	-	-	ab	ab	ab	b	ab	a	ab	a	ns	ns
	RG_FOBCP	<0.001	base year	-	-	2.6	0.081	2.2	0.90	0.83	3.9	3.2	1.7	bc	-	-	abc	bc	abc	c	c	a	ab	bc	ns	ns
	RG_FRCP1SW	0.032	-	-	-	-	-	base year	-	2.6	3.3	3.7	3.9	-	-	-	-	-	b	-	ab	ab	ab	a	ns	ns
	RG_FRUPO	0.165	-	-	-	-	-	ns	ns	ns	ns	ns	ns	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns
	RG_FODPO	<0.001	base year	2.4	-	0.37	-0.33	0.31	3.5	-0.16	0.80	1.4	0.0096	ab	ab	-	ab	b	ab	a	b	b	ab	b	ns	ns
RG_FO22	0.129	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	
RG_FOU EW	0.051	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	

- P-value < 0.05.
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 4 SD Decrease.
- > 5 SD Decrease.
- bold Significant increase or decrease from base year.
- Significantly > than all historical years (or 2020).
- Significantly < than all historical years (or 2020).

Notes: "ns" = not significant; "-" insufficient data for comparison.

^a Year p-value from an ANOVA.

^b Magnitude of Difference (MOD) = $[\text{Mean}_{\text{given year}} - \text{Mean}_{\text{base year}}] / \text{SD}_{\text{base year}}$.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "a".

Table G.17: Temporal Changes in Benthic Invertebrate Tricoptera Abundance for Reference and Mine-exposed Areas in the FRO LAEMP, September 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?											Q2. Is the 2022 September mean greater or less than the September historical means (2012 - 2021) and the previous year (2021)?													
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																								
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012-2021	2021	
Reference	RG_HENUP	0.177	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns		
	RG_FO26	<0.001	base year	-3.5	-	-3.2	-0.044	3.8	0.83	1.1	2.2	1.8	3.8	bc	c	-	c	bc	ab	b	b	ab	ab	a	ns	ns	
Mine-exposed	RG_FODHE	<0.001	base year	-	-	-3.5	-5.0	-2.4	-1.8	-1.3	0.33	-1.4	0.015	ab	-	-	bc	c	abc	abc	abc	a	abc	ab	ns	ns	
	RG_FOUCL	0.917	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	-	-	ns	ns	ns	ns	ns	ns	
	RG_FOUNGD	0.003	base year	-	-	-2.6	-	-1.7	1.1	-0.26	2.0	0.15	1.6	abc	-	-	c	-	bc	abc	abc	a	abc	ab	ns	ns	
	RG_FODNGD	0.163	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	
	RG_MP1	0.002	base year	-2.1	-	-1.0	-	1.4	0.75	0.43	1.7	2.7	0.61	abc	c	-	bc	-	abc	abc	abc	ab	a	abc	ns	ns	
	RG_FOUSH	0.097	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	
	RG_FOUKI	0.122	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
	RG_FOBKS	0.094	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_SCOUTDS	0.201	-	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	-	-	ns	ns	ns	ns	ns	ns
	RG_FOBSC	<0.001	base year	-	-	-1.7	-0.91	0.69	-0.36	-1.9	0.79	0.31	2.8	abc	-	-	bc	abc	abc	bc	c	ab	abc	a	ns	ns	
	RG_FOBSP	<0.001	base year	-	-	0.81	1.5	2.6	0.40	-0.75	2.2	2.4	3.0	abc	-	-	abc	abc	abc	bc	c	ab	ab	a	ns	ns	
	RG_FRCP1SW	0.458	-	-	-	-	-	ns	-	ns	ns	ns	ns	ns	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	
	RG_FRUPO	0.053	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	
	RG_FODPO	0.072	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	
RG_FO22	0.004	base year	-	-	4.4	-	5.6	1.7	3.2	3.9	3.4	3.3	b	-	-	ab	-	a	b	ab	a	ab	ab	ns	ns		
RG_FOUW	0.052	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns		

- P-value < 0.05.
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 4 SD Decrease.
- > 5 SD Decrease.
- bold** Significant increase or decrease from base year.
- Significantly > than all historical years (or 2020).
- Significantly < than all historical years (or 2020).

Notes: "ns" = not significant; "-" insufficient data for comparison.

^a Year p-value from an ANOVA.

^b Magnitude of Difference (MOD) = $[\text{Mean}_{\text{given year}} - \text{Mean}_{\text{base year}}] / \text{SD}_{\text{base year}}$.

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "a".

Table G.18: Temporal Changes in Benthic Invertebrate Baetidae Abundance for Reference and Mine-exposed Areas in the FRO LAEMP, September 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?											Q2. Is the 2022 September mean greater or less than the September historical means (2012 - 2021) and the previous year (2021)?												
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																							
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012-2021	2021
Reference	RG_HENUP	<0.001	base year	-0.85	-	0.70	-2.6	0.70	-0.63	-1.3	-1.9	1.8	-1.2	ab	ab	-	ab	b	ab	ab	b	b	a	b	ns	↓
	RG_FO26	<0.001	base year	0.31	-	4.4	2.8	3.4	2.5	0.94	7.6	7.0	5.3	d	d	-	abcd	cd	bcd	d	d	a	ab	abc	ns	ns
Mine-exposed	RG_FODHE	<0.001	base year	-	-	5.8	3.9	2.0	3.3	1.8	5.2	4.6	1.7	b	-	-	a	ab	ab	ab	b	a	a	b	ns	↓
	RG_FOUCL	0.063	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	-	-	ns	ns	ns	ns	ns	
	RG_FOUNGD	0.316	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	
	RG_FODNGD	<0.001	-	-	-	base year	-	0.72	-1.4	-1.7	-2.5	-3.3	-4.7	-	-	-	ab	-	a	ab	ab	abc	bc	c	ns	ns
	RG_MP1	<0.001	base year	-1.6	-	-0.59	-	0.89	2.1	-0.49	-0.85	-1.4	-2.7	ab	b	-	ab	-	ab	a	ab	b	b	b	ns	ns
	RG_FOUSH	<0.001	base year	-	-	4.5	-	0.39	1.3	0.28	1.1	-0.79	-1.9	bc	-	-	a	-	abc	ab	bc	ab	bc	c	ns	ns
	RG_FOUKI	0.009	base year	-	-	0.86	-1.9	1.6	0.77	-0.89	-0.79	-0.16	-1.8	ab	-	-	ab	ab	a	ab	ab	ab	ab	b	ns	ns
	RG_FOBKS	<0.001	base year	-	-	1.6	-0.10	0.65	1.5	-1.5	-0.29	-0.20	-3.0	abc	-	-	ab	abc	ab	a	bc	ab	ab	c	ns	↓
	RG_SCOUTDS	0.028	-	-	-	-	-	-	-	base year	1.2	0.40	-1.6	-	-	-	-	-	-	-	ab	a	ab	b	ns	ns
	RG_FOBSC	0.198	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	
	RG_FOBBCP	<0.001	base year	-	-	1.7	1.4	0.63	-1.9	3.3	4.7	-0.44	1.8	bcd	-	-	abc	abcd	bcd	d	ab	a	cd	b	ns	↑
	RG_FRCP1SW	0.001	-	-	-	-	-	base year	-	3.5	3.8	1.6	4.9	-	-	-	-	-	c	ns	abc	ab	bc	a	ns	↑
	RG_FRUPO	<0.001	-	-	-	-	-	base year	1.6	2.0	4.2	1.0	0.32	-	-	-	-	-	b	ab	ab	a	b	b	ns	ns
	RG_FODPO	<0.001	base year	-0.23	-	-7.7	-0.23	-3.0	0.92	0.14	-0.36	-1.1	-1.6	ab	ab	-	c	ab	b	a	ab	ab	ab	ab	ns	ns
RG_FO22	0.315	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns		
RG_FOU EW	0.233	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns		

- P-value < 0.05.
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 4 SD Decrease.
- > 5 SD Decrease.
- bold** Significant increase or decrease from base year.
- Significantly > than all historical years (or 2020).
- Significantly < than all historical years (or 2020).

Notes: "ns" = not significant; "-" insufficient data for comparison.

^a Year p-value from an ANOVA.

^b Magnitude of Difference (MOD) = $[\text{Mean}_{\text{given year}} - \text{Mean}_{\text{base year}}] / \text{SD}_{\text{base year}}$

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "a".

Table G.19: Temporal Changes in Benthic Invertebrate Ephemeroptera Abundance for Reference and Mine-exposed Areas in the FRO LAEMP, September 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?											Q2. Is the 2022 September mean greater or less than the September historical means (2012 - 2021) and the previous year (2021)?													
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																								
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012-2021	2021	
Reference	RG_HENUP	0.026	base year	-3.3	-	-0.72	0.48	0.79	0.60	-2.2	-0.27	-1.5	-1.0	ab	b	-	ab	ab	ab	a	b	ab	ab	ab	ns	ns	
	RG_FO26	<0.001	base year	-3.0	-	-0.39	2.6	1.2	3.4	2.3	4.1	2.2	3.6	bcd	d	-	cd	abc	abcd	ab	abc	a	abc	ab	ns	ns	
Mine-exposed	RG_FODHE	<0.001	base year	-	-	0.66	-0.99	-0.50	-0.42	3.4	3.2	-0.22	-0.70	ab	-	-	ab	b	b	b	a	a	b	b	ns	ns	
	RG_FOUCL	0.007	-	-	-	-	-	-	-	base year	-2.1	-1.1	-3.1	-	-	-	-	-	-	a	ab	ab	b	ns	ns		
	RG_FOUNGD	<0.001	base year	-	-	-0.38	-	0.059	5.5	6.9	4.4	5.7	1.7	b	-	-	b	-	b	a	a	a	a	b	ns	↓	
	RG_FODNGD	0.051	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns		
	RG_MP1	<0.001	base year	-7.2	-	-4.4	-	1.9	-1.1	-2.7	-0.93	0.89	-2.5	ab	c	-	bc	-	a	ab	b	ab	a	b	ns	↓	
	RG_FOUSH	0.034	base year	-	-	-3.1	-	-3.1	-2.2	-1.6	-0.73	-1.3	-2.7	a	-	-	ab	-	ab	ab	ab	ab	ab	ab	b	ns	ns
	RG_FOUKI	0.004	base year	-	-	-0.63	-1.7	-2.1	-0.040	0.71	1.6	1.2	0.88	ab	-	-	ab	ab	b	ab	ab	a	a	a	ns	ns	
	RG_FOBKS	0.041	base year	-	-	-0.31	1.4	-0.30	2.4	0.98	1.4	0.51	0.80	ab	-	-	ab	ab	b	a	ab	ab	ab	ab	ns	ns	
	RG_SCOUTDS	0.795	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	-	-	ns	ns	ns	ns	ns	ns	
	RG_FOBSC	0.019	base year	-	-	-2.8	-2.9	-4.0	-2.2	-2.1	-0.86	-1.2	0.072	ab	-	-	ab	ab	b	ab	ab	ab	ab	ab	a	ns	ns
	RG_FOBBCP	<0.001	base year	-	-	-5.9	-5.9	-8.3	-6.9	-5.8	-3.4	-4.1	-4.4	a	-	-	bcd	bcd	d	d	cd	ab	bc	bc	ns	ns	
	RG_FRCP1SW	0.451	-	-	-	-	ns	-	ns	ns	ns	ns	ns	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	ns	
	RG_FRUPO	0.045	-	-	-	-	-	base year	1.7	-0.35	2.3	0.75	1.4	-	-	-	-	-	ab	ab	b	a	ab	ab	ns	ns	
	RG_FODPO	<0.001	base year	-4.9	-	-6.2	-6.1	-8.4	-4.4	-5.9	-4.5	-5.9	-7.0	a	bc	-	bc	bc	c	b	bc	b	bc	bc	ns	ns	
RG_FO22	<0.001	base year	-	-	0.57	-	-3.1	-3.1	-2.0	-3.0	-4.0	-4.3	ab	-	-	a	-	abcd	bcd	abc	bcd	cd	d	ns	ns		
RG_FOUJEW	0.535	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns		

- P-value < 0.05.
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 4 SD Decrease.
- > 5 SD Decrease.
- bold Significant increase or decrease from base year.
- Significantly > than all historical years (or 2020).
- Significantly < than all historical years (or 2020).

Notes: "ns" = not significant; "-" insufficient data for comparison.

^a Year p-value from an ANOVA.

^b Magnitude of Difference (MOD) = $[\text{Mean}_{\text{given year}} - \text{Mean}_{\text{base year}}] / \text{SD}_{\text{base year}}$

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "a".

Table G.20: Temporal Changes in Benthic Invertebrate Heptageniidae Abundance for Reference and Mine-exposed Areas in the FRO LAEMP, September 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?											Q2. Is the 2022 September mean greater or less than the September historical means (2012 - 2021) and the previous year (2021)?													
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																								
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012-2021	2021	
Reference	RG_HENUP	0.373	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
	RG_FO26	<0.001	base year	-0.90	-	0.74	1.7	0.79	3.6	3.6	2.6	3.6	4.8	bc	c	-	bc	abc	bc	ab	ab	abc	ab	a	ns	ns	
Mine-exposed	RG_FODHE	0.384	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
	RG_FOUCL	0.125	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	
	RG_FOUNGD	0.008	base year	-	-	-2.0	-	-4.0	-0.12	0.38	-0.81	-0.41	-0.78	ab	-	-	ab	-	b	a	a	ab	ab	ab	ab	ns	ns
	RG_FODNGD	0.088	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	-	-	-	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	
	RG_MP1	<0.001	base year	-4.5	-	-3.6	-	-2.4	-2.5	-5.3	-2.8	-0.37	-3.0	ab	cd	-	abcd	-	abcd	abc	d	abcd	a	bcd	ns	↓	
	RG_FOUSH	<0.001	base year	-	-	-2.3	-	-3.2	-2.5	-3.5	-3.1	-3.5	-3.1	a	-	-	ab	-	ab	ab	b	b	b	b	ns	ns	
	RG_FOUKI	<0.001	base year	-	-	-4.8	-7.6	-5.1	-4.3	-5.2	-2.6	-3.7	-3.3	a	-	-	bc	c	bc	bc	bc	ab	ab	ab	ns	ns	
	RG_FOBKS	0.029	base year	-	-	-1.8	-1.9	-2.2	0.0028	-1.0	0.52	-0.64	0.22	ab	-	-	ab	ab	b	ab	ab	a	ab	ab	ns	ns	
	RG_SCOUTDS	0.999	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns	
	RG_FOBSC	<0.001	base year	-	-	-2.7	-5.1	-2.9	-1.1	-1.2	-0.41	-0.84	0.98	ab	-	-	abc	c	bc	ab	ab	ab	ab	a	ns	ns	
	RG_FOBPCP	<0.001	base year	-	-	-4.1	-5.4	-3.4	-1.4	-3.5	-0.63	-1.9	-1.6	ab	-	-	abc	c	abc	a	bc	a	ab	ab	ns	ns	
	RG_FRCP1SW	0.025	-	-	-	-	-	base year	-	1.8	4.0	3.0	3.4	-	-	-	-	-	b	ns	ab	a	ab	ab	ns	ns	
	RG_FRUPO	<0.001	-	-	-	-	-	base year	-1.7	-3.7	-1.1	-5.0	-1.5	-	-	-	-	-	a	ab	bc	a	c	ab	ns	↑	
	RG_FODPO	<0.001	base year	1.6	-	-1.8	-2.2	-3.4	0.32	-2.3	-0.11	-2.0	-3.2	abc	a	-	abc	abc	bc	a	bc	ab	abc	c	ns	ns	
RG_FO22	<0.001	base year	-	-	1.4	-	-0.45	0.74	-0.91	0.11	-2.0	-0.33	ab	-	-	ab	-	ab	a	ab	a	b	ab	ns	ns		
RG_FOU EW	0.359	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns		

- P-value < 0.05.
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 4 SD Decrease.
- > 5 SD Decrease.
- bold Significant increase or decrease from base year.
- Significantly > than all historical years (or 2020).
- Significantly < than all historical years (or 2020).

Notes: "ns" = not significant; "-" insufficient data for comparison.

^a Year p-value from an ANOVA.

^b Magnitude of Difference (MOD) = $[\text{Mean}_{\text{given year}} - \text{Mean}_{\text{base year}}] / \text{SD}_{\text{base year}}$

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "a".

Table G.21: Temporal Changes in Benthic Invertebrate Chironomidae Abundance for Reference and Mine-exposed Areas in the FRO LAEMP, September 2012 to 2022

Status	Area	Year P-value ^a	Q1. Is there a positive or negative change since the base year (b) of monitoring?											Q2. Is the 2022 September mean greater or less than the September historical means (2012 - 2021) and the previous year (2021)?													
			Magnitude of Difference (MOD) ^b and Significance (bolded) from Base Year (b) ^c																								
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012-2021	2021	
Reference	RG_HENUP	0.128	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
	RG_FO26	<0.001	base year	-3.1	-	-0.72	1.5	-0.93	0.92	2.1	1.6	-0.95	1.6	abc	c	-	abc	ab	abc	ab	a	ab	bc	ab	ns	ns	
Mine-exposed	RG_FODHE	<0.001	base year	-	-	4.8	1.6	0.98	2.6	6.9	7.4	1.9	-0.043	cd	-	-	ab	bcd	bcd	bc	a	a	bcd	d	ns	ns	
	RG_FOUCL	<0.001	-	-	-	-	-	-	-	base year	-2.7	-6.7	-5.8	-	-	-	-	-	-	a	b	c	c	ns	ns		
	RG_FOUNGD	<0.001	base year	-	-	-1.5	-	1.6	0.78	1.0	-0.50	-1.2	-2.6	ab	-	-	ab	-	a	a	a	ab	ab	b	ns	ns	
	RG_FODNGD	0.001	-	-	-	base year	-	2.7	2.2	3.0	3.9	0.43	1.3	-	-	-	bc	-	abc	abc	ab	a	c	bc	ns	ns	
	RG_MP1	<0.001	base year	-2.2	-	-2.6	-	-3.7	-2.4	1.5	-3.3	-5.9	-5.6	ab	abc	-	bc	-	bc	b	a	bc	c	c	ns	ns	
	RG_FOUSH	<0.001	base year	-	-	-1.1	-	-0.66	0.88	2.3	2.5	-2.4	0.15	ab	-	-	ab	-	ab	a	a	a	b	ab	ns	ns	
	RG_FOUKI	0.001	base year	-	-	1.3	2.5	3.3	1.5	3.9	5.0	2.2	4.6	d	-	-	abcd	abcd	abcd	cd	abc	a	bcd	ab	ns	ns	
	RG_FOBKS	0.072	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	RG_SCOUTDS	0.064	-	-	-	-	-	-	-	-	ns	ns	ns	ns	-	-	-	-	-	-	ns	ns	ns	ns	ns	ns	ns
	RG_FOBSC	<0.001	base year	-	-	-0.10	2.0	2.6	-0.57	2.0	2.3	-1.0	3.1	abc	-	-	abc	abc	abc	bc	ab	a	c	a	ns	↑	
	RG_FOBSP	<0.001	base year	-	-	2.0	1.6	2.9	-0.017	3.2	2.6	0.60	1.9	abc	-	-	abc	abc	abc	c	a	ab	bc	abc	ns	ns	
	RG_FRCP1SW	<0.001	-	-	-	-	-	base year	-	1.3	-1.3	1.6	2.3	-	-	-	-	-	ab	ns	ab	b	a	a	ns	ns	
	RG_FRUPO	0.022	-	-	-	-	-	base year	-1.6	-1.5	0.45	0.35	1.2	-	-	-	-	-	ab	b	b	ab	ab	a	ns	ns	
	RG_FODPO	<0.001	base year	-7.9	-	-2.1	-0.51	2.3	2.1	0.46	1.4	-1.4	-0.75	abc	d	-	bc	abc	ab	a	abc	ab	c	bc	ns	ns	
	RG_FO22	<0.001	base year	-	-	2.1	-	0.56	-2.3	-2.1	0.37	-4.1	-0.26	abc	-	-	a	-	abc	cd	bc	a	d	ab	ns	↑	
RG_FOU EW	0.276	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	-	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	

- P-value < 0.05.
- > 2 SD Increase.
- > 3 SD Increase.
- > 4 SD Increase.
- > 5 SD Increase.
- > 2 SD Decrease.
- > 3 SD Decrease.
- > 4 SD Decrease.
- > 5 SD Decrease.

- bold Significant increase or decrease from base year.
- ↑ Significantly > than all historical years (or 2020).
- ↓ Significantly < than all historical years (or 2020).

Notes: "ns" = not significant; "-" insufficient data for comparison.

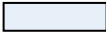





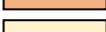
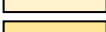


^a Year p-value from an ANOVA.

^b Magnitude of Difference (MOD) = $[\text{Mean}_{\text{given year}} - \text{Mean}_{\text{base year}}] / \text{SD}_{\text{base year}}$

^c Significance among year determined using all pairwise comparisons using Tukey's honestly significant differences method. Years that share a letter are not significantly different. Letters assigned such that the mean with highest magnitude is assigned "a".

Table G.22: Selenium Concentrations in Benthic Invertebrate Tissue at RG_SCDSB, 2022

Replicate	Composite-taxa Tissue Selenium ($\mu\text{g/g dw}$)				
	1	2	3	4	5
Distance from outfall (m)	~30	~22	~14	~8	~6
RG_SCDSB	9.6	10	12	7.4	9.6

-  Value > EVWQP Level 1 benchmark of 11 mg/kg dw for dietary effects to juvenile fish (Teck 2014).
-  Value > EVWQP Level 2 benchmark of 18 mg/kg dw for dietary effects to juvenile fish (Teck 2014).
-  Value > EVWQP Level 3 benchmark of 26 mg/kg dw for dietary effects to juvenile fish (Teck 2014).
-  Value > EVWQP Level 1 benchmark of 13 mg/kg dw for effects to benthic invertebrates (Teck 2014).
-  Value > EVWQP Level 2 benchmark of 20 mg/kg dw for effects to benthic invertebrates (Teck 2014).
-  Value > EVWQP Level 3 benchmark of 27 mg/kg dw for effects to benthic invertebrates (Teck 2014).
-  Value > EVWQP Level 1 benchmark of 15 mg/kg dw for dietary effects to juvenile birds (Teck 2014).
-  Value > EVWQP Level 2 benchmark of 22 mg/kg dw for dietary effects to juvenile birds (Teck 2014).
-  Value > EVWQP Level 3 benchmark of 41 mg/kg dw for dietary effects to juvenile birds (Teck 2014).
-  Value > upper limit of normal range of (8.74 mg/kg dw; Minnow 2020).

APPENDIX

**INTEGRATED
ANALYSIS**

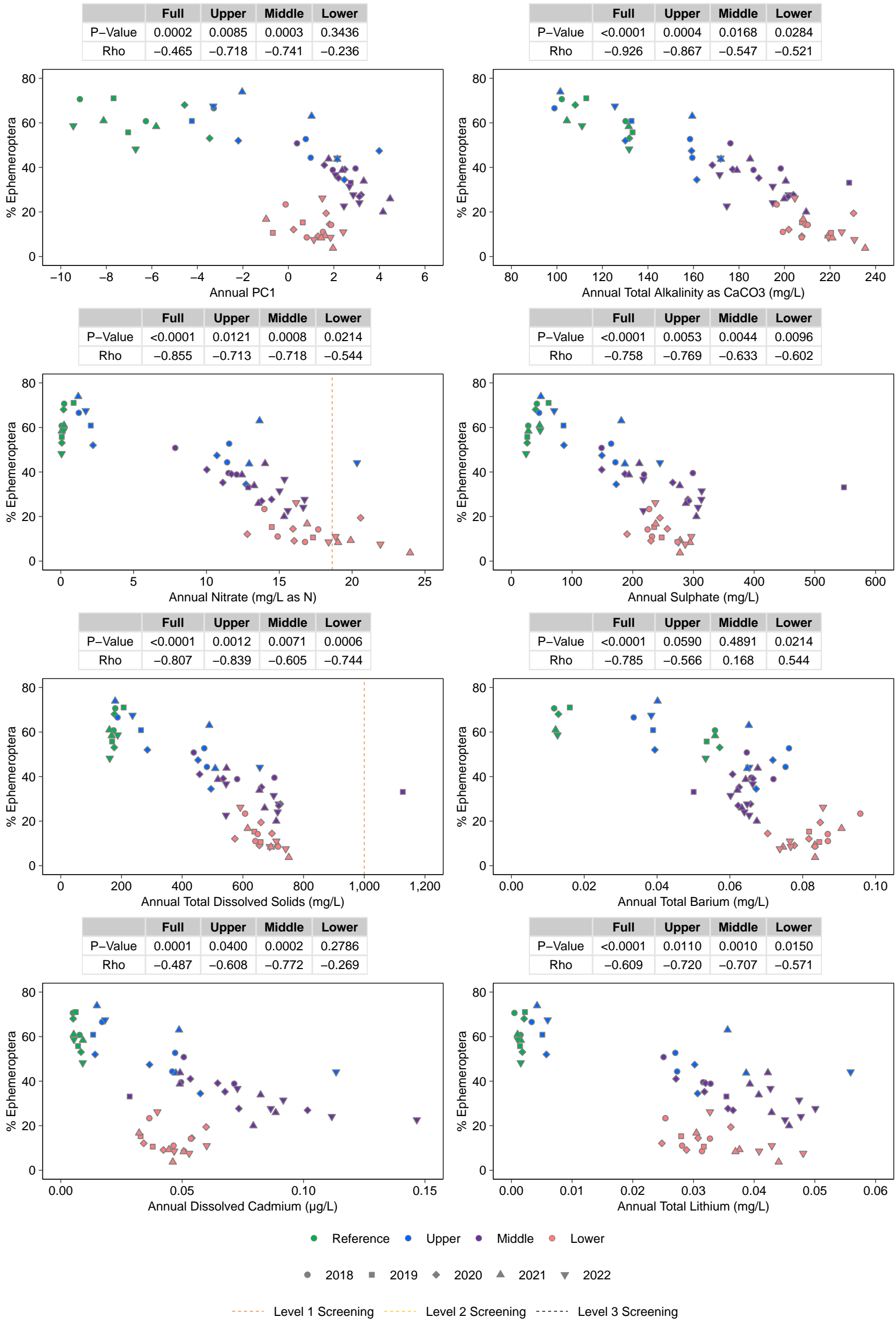


Figure : Scatterplots of Spearman's Correlation Relationships Between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, 2018 to 2022

Notes: Only relationships with at least one relationship with a significant p-value and abs(rho) > 0.6 are displayed. The Full correlations included reference areas as well as the upper, middle, and lower areas. Annual = Averaged mean based on the previous year of water quality sampling (see methods for details). Levels 1, 2, and 3 Screening are Elk Valley Water Quality Plan (EVWQP) benchmarks for Total Dissolved Solid and Cadmium; Updated Effects Concentration for Nitrate and Sulphate; and Proposed benchmarks for Nickel. Screening values were not shown where measured water quality values were below benchmarks or concentrations and for constituents that have no benchmarks. Endpoint residuals represent the residuals of multiple regression models predicting the expected benthic invertebrate community given habitat at mine-exposed sites (RAEMP 2020a). Upper study area is defined as monitoring areas RG_FODHE to RG_FOUSH, middle study area is RG_FOUKI to RG_FRCP1SW, and the lower study area is RG_FRUPO to RG_FOUWEW.

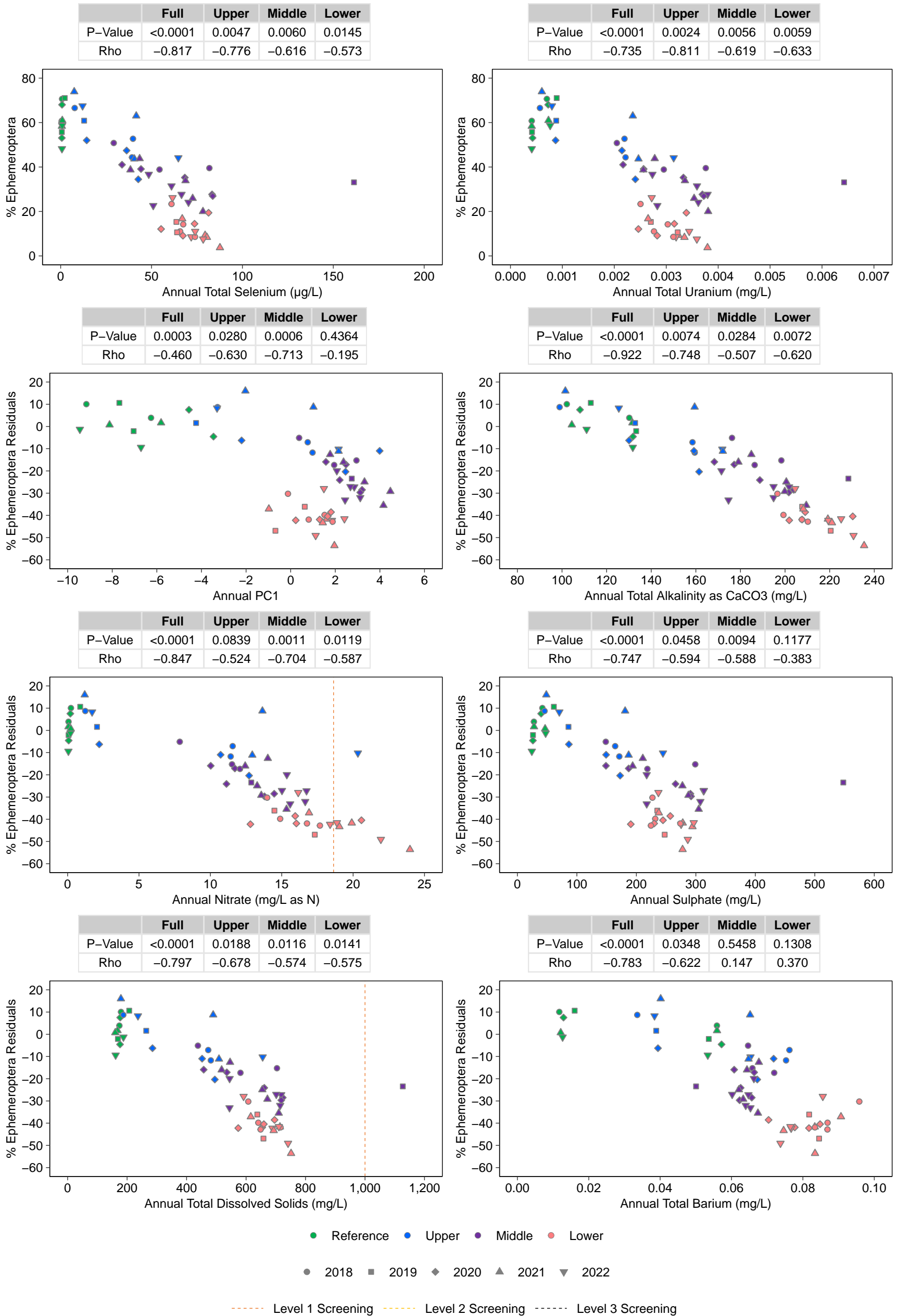


Figure : Scatterplots of Spearman's Correlation Relationships Between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, 2018 to 2022

Notes: Only relationships with at least one relationship with a significant p-value and $abs(rho) > 0.6$ are displayed. The Full correlations included reference areas as well as the upper, middle, and lower areas. Annual = Averaged mean based on the previous year of water quality sampling (see methods for details). Levels 1, 2, and 3 Screening are Elk Valley Water Quality Plan (EWWQP) benchmarks for Total Dissolved Solid and Cadmium; Updated Effects Concentration for Nitrate and Sulphate; and Proposed benchmarks for Nickel. Screening values were not shown where measured water quality values were below benchmarks or concentrations and for constituents that have no benchmarks. Endpoint residuals represent the residuals of multiple regression models predicting the expected benthic invertebrate community given habitat at mine-exposed sites (RAEMP 2020a). Upper study area is defined as monitoring areas RG_FODHE to RG_FOUSH, middle study area is RG_FOUKI to RG_FRCP1SW, and the lower study area is RG_FRUPO to RG_FOU EW.

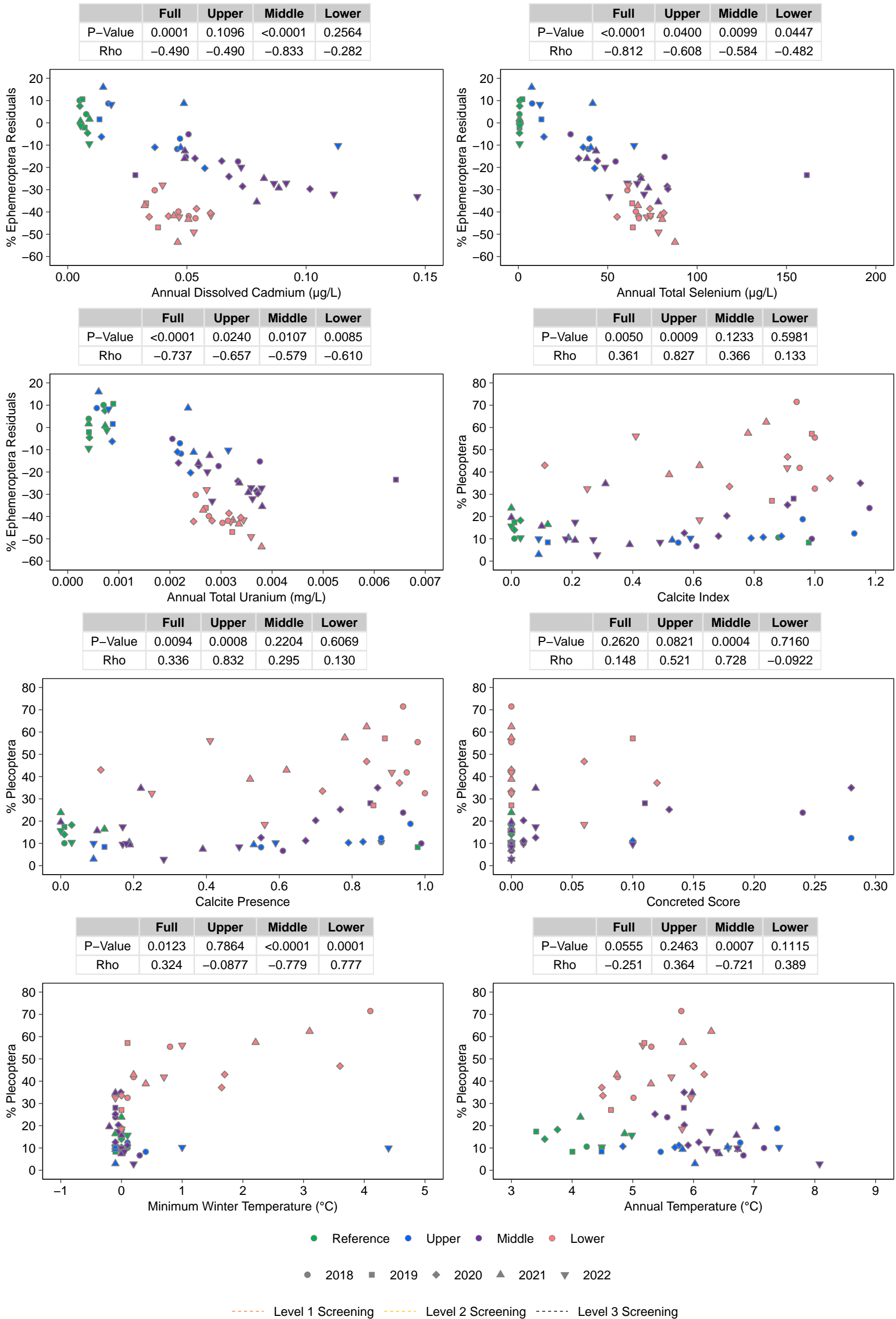


Figure 10 : Scatterplots of Spearman's Correlation Relationships Between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, 2018 to 2022

Notes: Only relationships with at least one relationship with a significant p-value and abs(rho) > 0.6 are displayed. The Full correlations included reference areas as well as the upper, middle, and lower areas. Annual = Averaged mean based on the previous year of water quality sampling (see methods for details). Levels 1, 2, and 3 Screening are Elk Valley Water Quality Plan (EVWQP) benchmarks for Total Dissolved Solid and Cadmium; Updated Effects Concentration for Nitrate and Sulphate; and Proposed benchmarks for Nickel. Screening values were not shown where measured water quality values were below benchmarks or concentrations and for constituents that have no benchmarks. Endpoint residuals represent the residuals of multiple regression models predicting the expected benthic invertebrate community given habitat at mine-exposed sites (RAEMP 2020a). Upper study area is defined as monitoring areas RG_FODHE to RG_FOUSH, middle study area is RG_FOUKI to RG_FRCP1SW, and the lower study area is RG_FRUPO to RG_FOU EW.

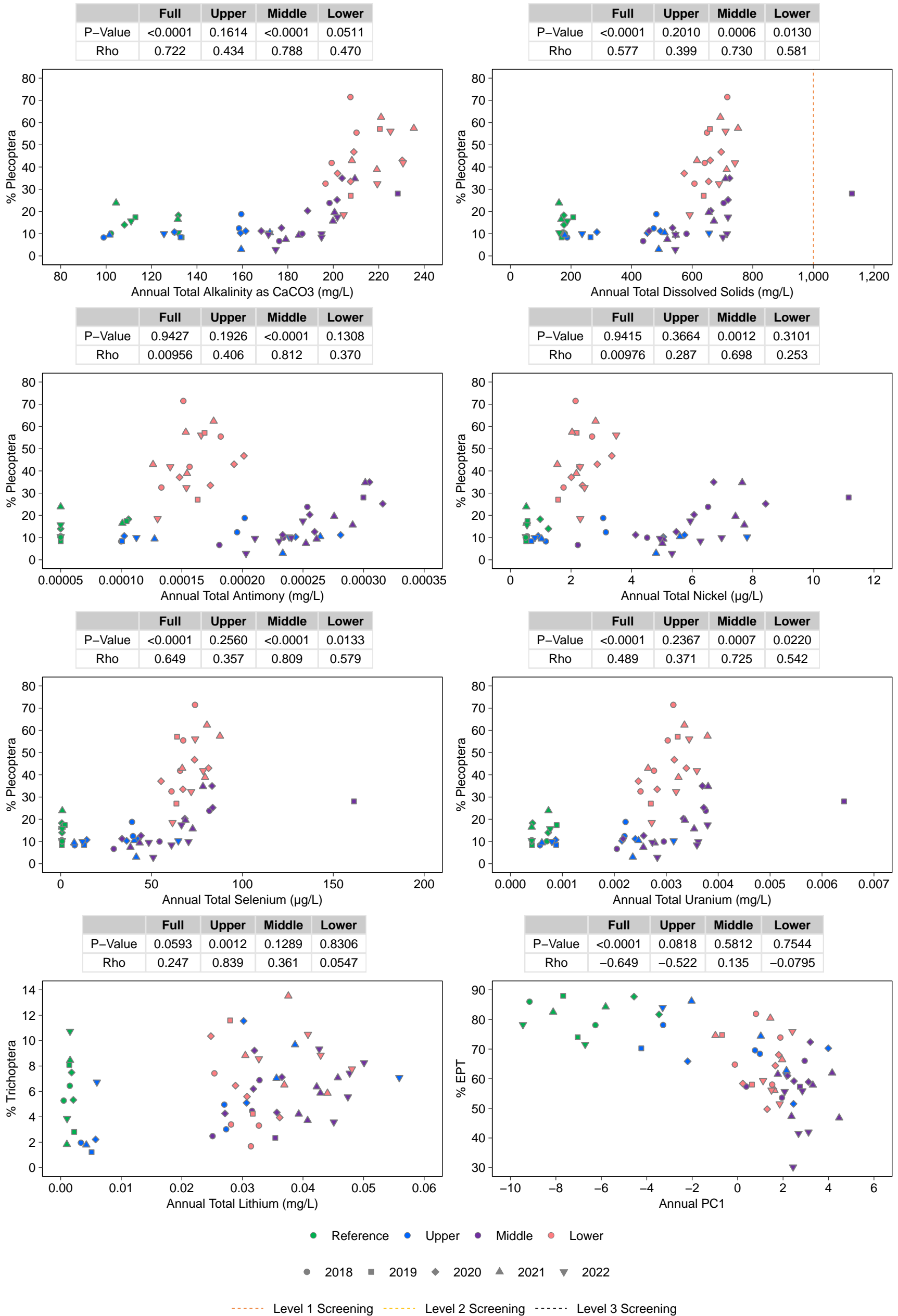


Figure 10 : Scatterplots of Spearman's Correlation Relationships Between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, 2018 to 2022

Notes: Only relationships with at least one relationship with a significant p-value and abs(rho) > 0.6 are displayed. The Full correlations included reference areas as well as the upper, middle, and lower areas. Annual = Averaged mean based on the previous year of water quality sampling (see methods for details). Levels 1, 2, and 3 Screening are Elk Valley Water Quality Plan (EVWQP) benchmarks for Total Dissolved Solid and Cadmium; Updated Effects Concentration for Nitrate and Sulphate; and Proposed benchmarks for Nickel. Screening values were not shown where measured water quality values were below benchmarks or concentrations and for constituents that have no benchmarks. Endpoint residuals represent the residuals of multiple regression models predicting the expected benthic invertebrate community given habitat at mine-exposed sites (RAEMP 2020a). Upper study area is defined as monitoring areas RG_FODHE to RG_FOUSH, middle study area is RG_FOUKI to RG_FRCP1SW, and the lower study area is RG_FRUPO to RG_FOU EW.

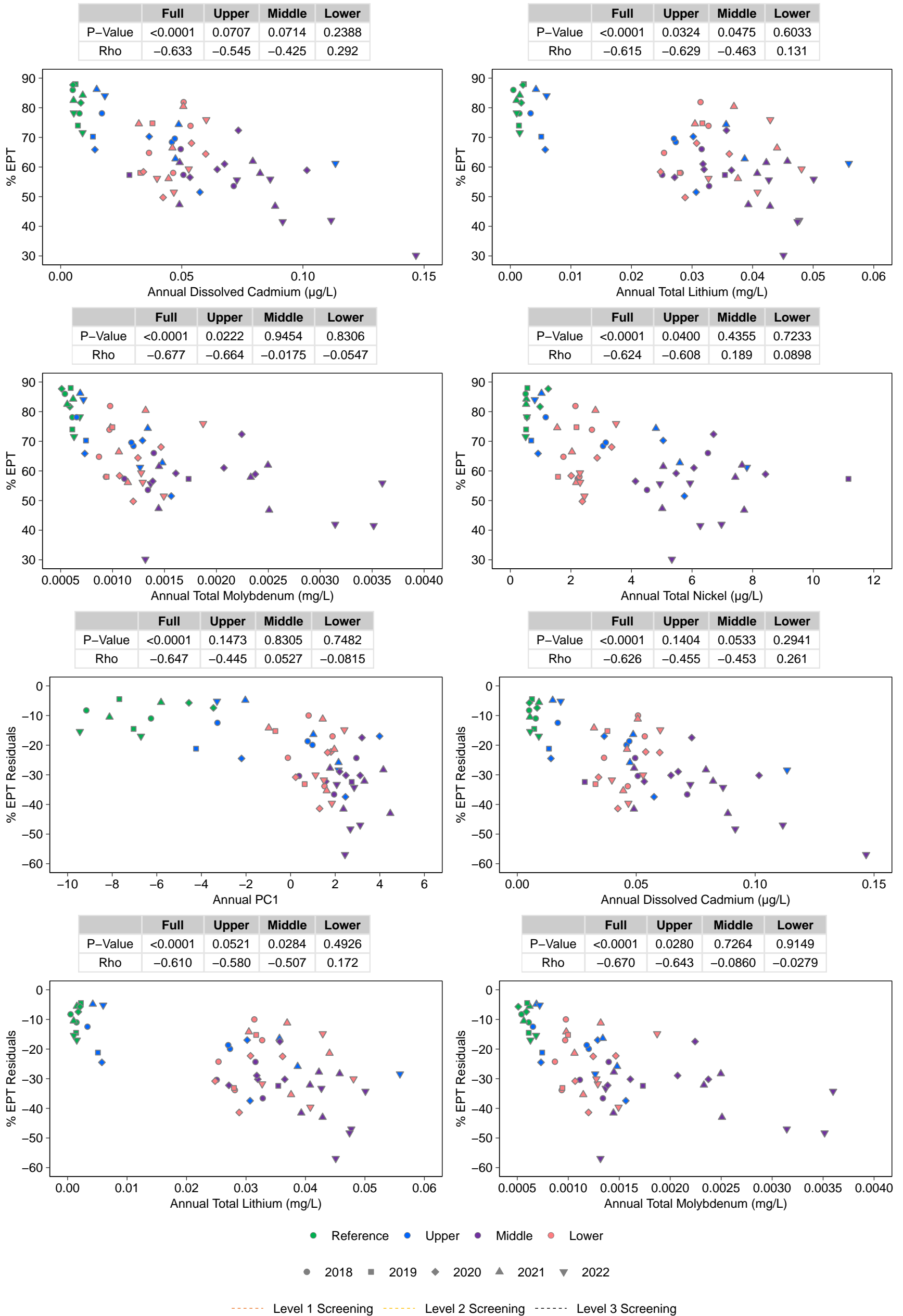


Figure : Scatterplots of Spearman's Correlation Relationships Between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, 2018 to 2022

Notes: Only relationships with at least one relationship with a significant p-value and abs(rho) > 0.6 are displayed. The Full correlations included reference areas as well as the upper, middle, and lower areas. Annual = Averaged mean based on the previous year of water quality sampling (see methods for details). Levels 1, 2, and 3 Screening are Elk Valley Water Quality Plan (EVWQP) benchmarks for Total Dissolved Solid and Cadmium; Updated Effects Concentration for Nitrate and Sulphate; and Proposed benchmarks for Nickel. Screening values were not shown where measured water quality values were below benchmarks or concentrations and for constituents that have no benchmarks. Endpoint residuals represent the residuals of multiple regression models predicting the expected benthic invertebrate community given habitat at mine-exposed sites (RAEMP 2020a). Upper study area is defined as monitoring areas RG_FODHE to RG_FOUSH, middle study area is RG_FOUKI to RG_FRCP1SW, and the lower study area is RG_FRUPO to RG_FOU EW.

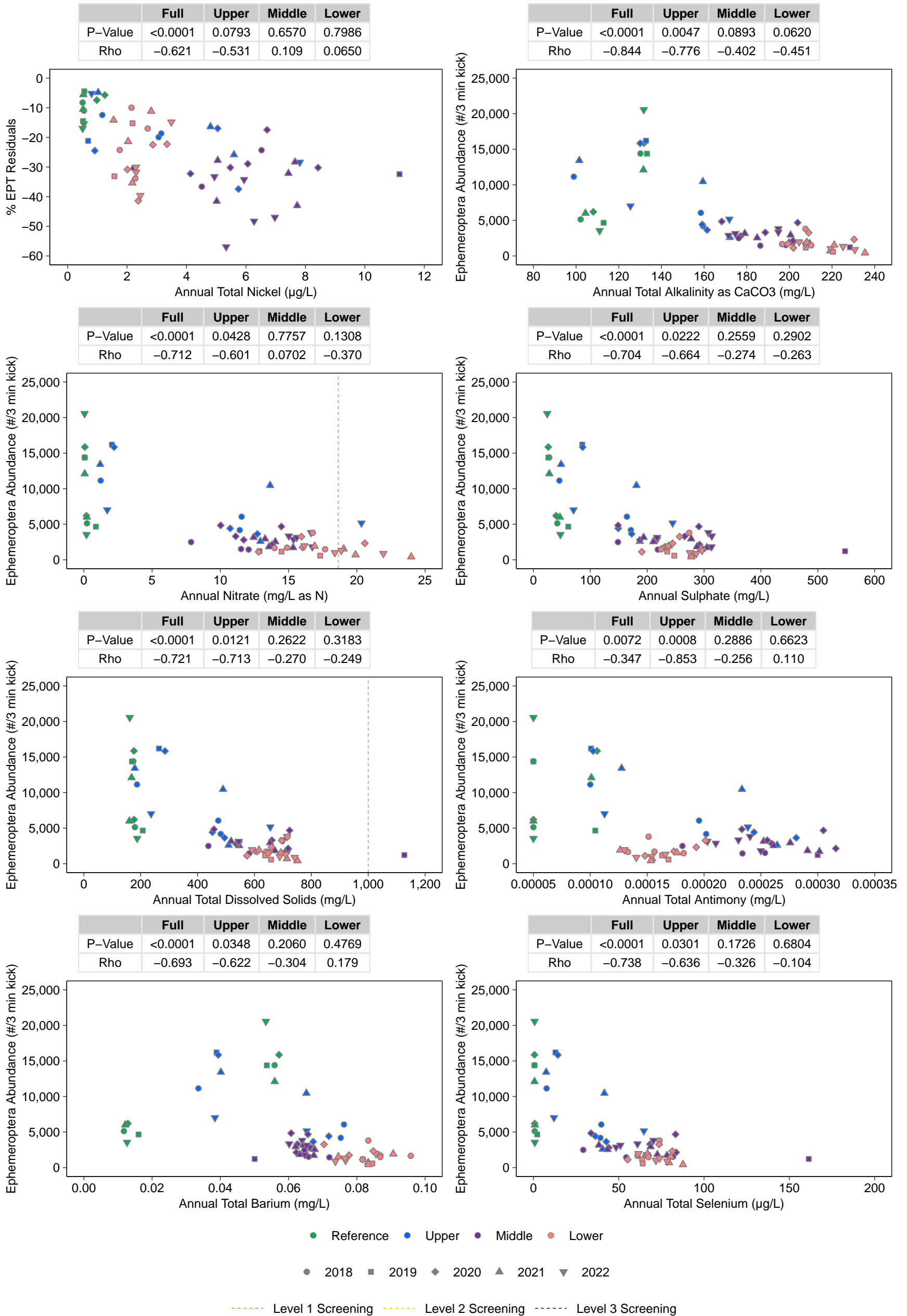


Figure : Scatterplots of Spearman's Correlation Relationships Between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, 2018 to 2022

Notes: Only relationships with at least one relationship with a significant p-value and abs(rho) > 0.6 are displayed. The Full correlations included reference areas as well as the upper, middle, and lower areas. Annual = Averaged mean based on the previous year of water quality sampling (see methods for details). Levels 1, 2, and 3 Screening are Elk Valley Water Quality Plan (EVWQP) benchmarks for Total Dissolved Solid and Cadmium; Updated Effects Concentration for Nitrate and Sulphate; and Proposed benchmarks for Nickel. Screening values were not shown where measured water quality values were below benchmarks or concentrations and for constituents that have no benchmarks. Endpoint residuals represent the residuals of multiple regression models predicting the expected benthic invertebrate community given habitat at mine-exposed sites (RAEMP 2020a). Upper study area is defined as monitoring areas RG_FODHE to RG_FOUSH, middle study area is RG_FOUKI to RG_FRCP1SW, and the lower study area is RG_FRUPO to RG_FOU EW.

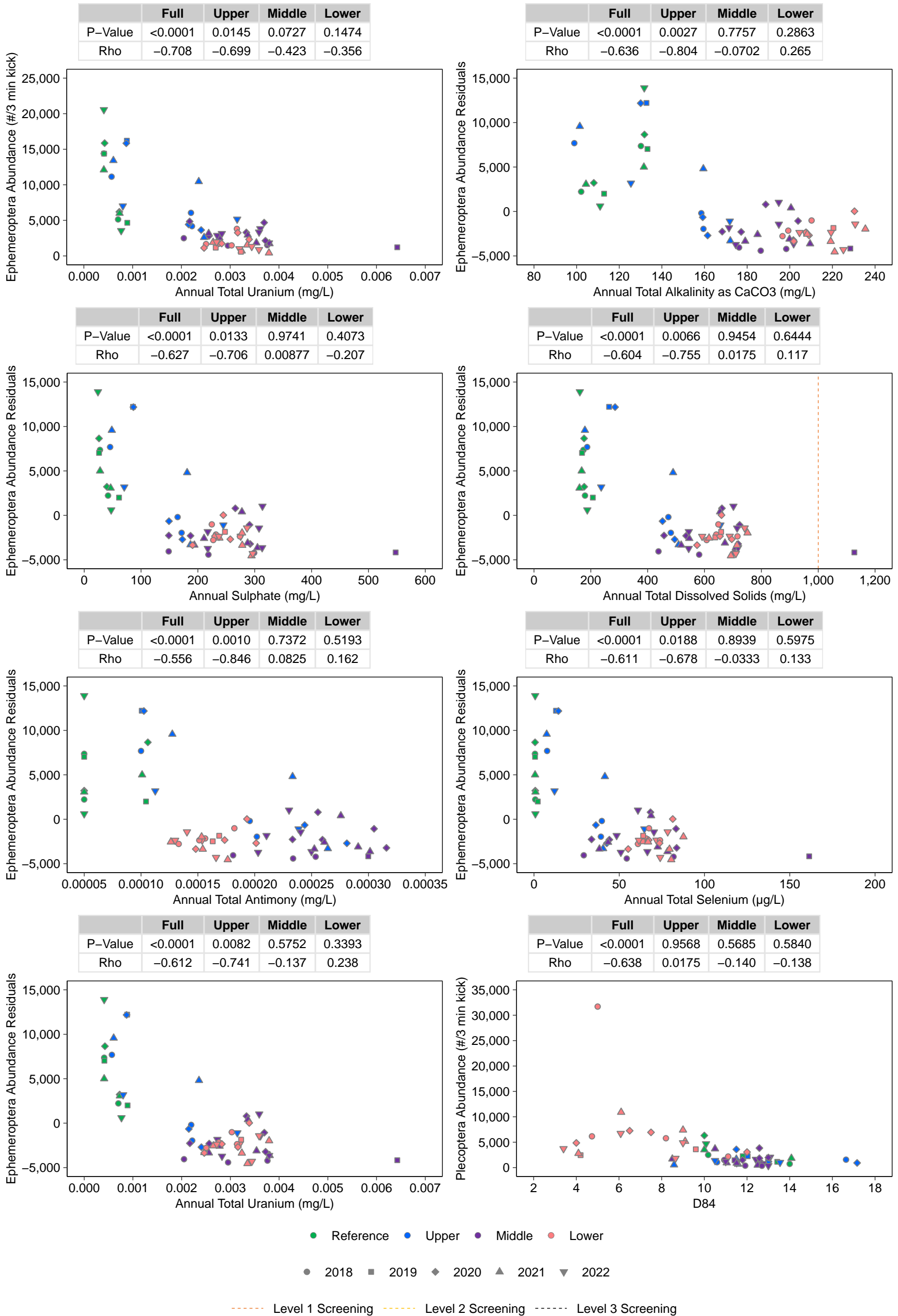


Figure : Scatterplots of Spearman's Correlation Relationships Between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, 2018 to 2022

Notes: Only relationships with at least one relationship with a significant p-value and abs(rho) > 0.6 are displayed. The Full correlations included reference areas as well as the upper, middle, and lower areas. Annual = Averaged mean based on the previous year of water quality sampling (see methods for details). Levels 1, 2, and 3 Screening are Elk Valley Water Quality Plan (EVWQP) benchmarks for Total Dissolved Solid and Cadmium; Updated Effects Concentration for Nitrate and Sulphate; and Proposed benchmarks for Nickel. Screening values were not shown where measured water quality values were below benchmarks or concentrations and for constituents that have no benchmarks. Endpoint residuals represent the residuals of multiple regression models predicting the expected benthic invertebrate community given habitat at mine-exposed sites (RAEMP 2020a). Upper study area is defined as monitoring areas RG_FODHE to RG_FOUSH, middle study area is RG_FOUKI to RG_FRCP1SW, and the lower study area is RG_FRUPO to RG_FOU EW.

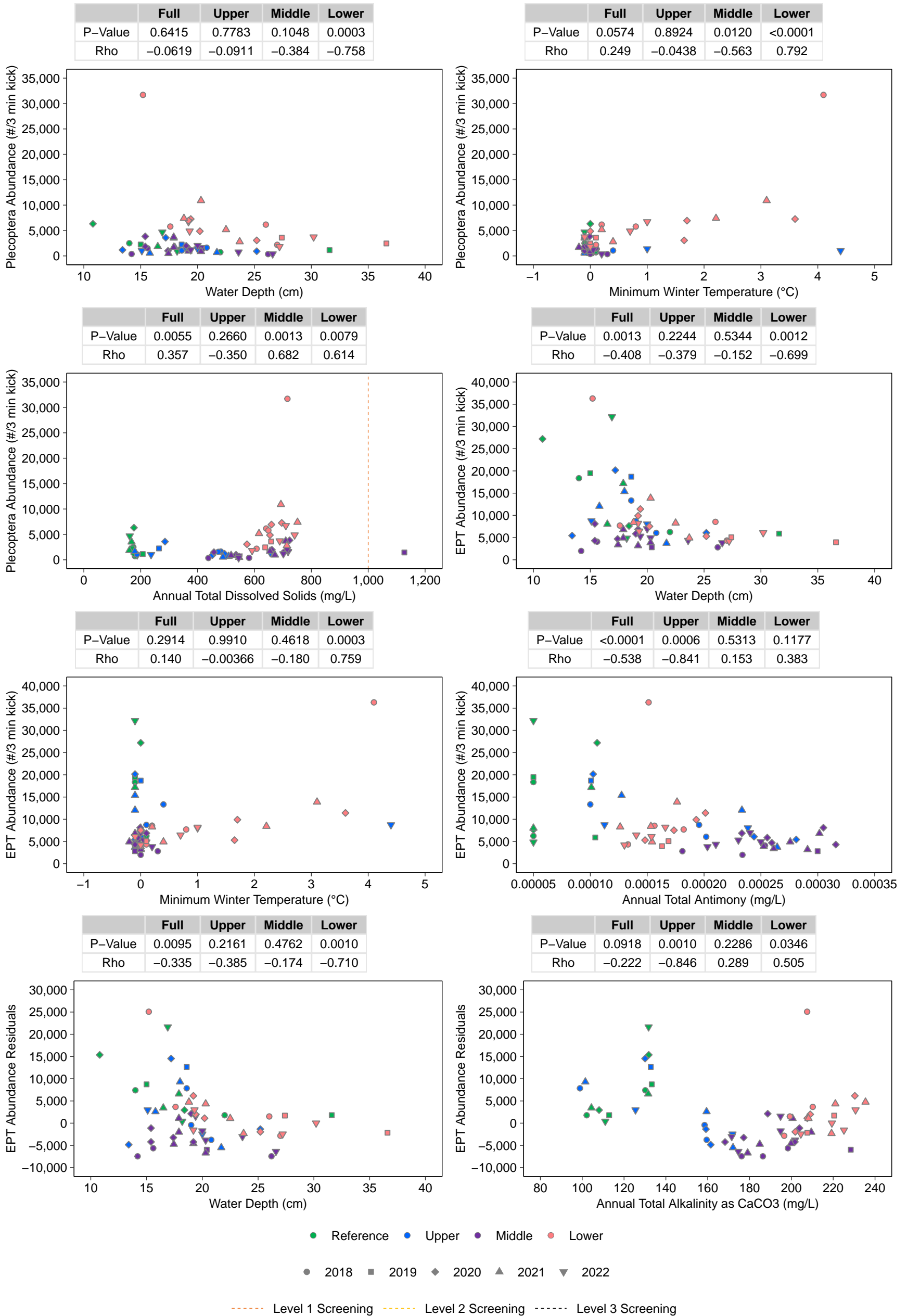


Figure : Scatterplots of Spearman's Correlation Relationships Between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, 2018 to 2022

Notes: Only relationships with at least one relationship with a significant p-value and abs(rho) > 0.6 are displayed. The Full correlations included reference areas as well as the upper, middle, and lower areas. Annual = Averaged mean based on the previous year of water quality sampling (see methods for details). Levels 1, 2, and 3 Screening are Elk Valley Water Quality Plan (EVWQP) benchmarks for Total Dissolved Solid and Cadmium; Updated Effects Concentration for Nitrate and Sulphate; and Proposed benchmarks for Nickel. Screening values were not shown where measured water quality values were below benchmarks or concentrations and for constituents that have no benchmarks. Endpoint residuals represent the residuals of multiple regression models predicting the expected benthic invertebrate community given habitat at mine-exposed sites (RAEMP 2020a). Upper study area is defined as monitoring areas RG_FODHE to RG_FOUSH, middle study area is RG_FOUKI to RG_FRCP1SW, and the lower study area is RG_FRUPO to RG_FOU EW.

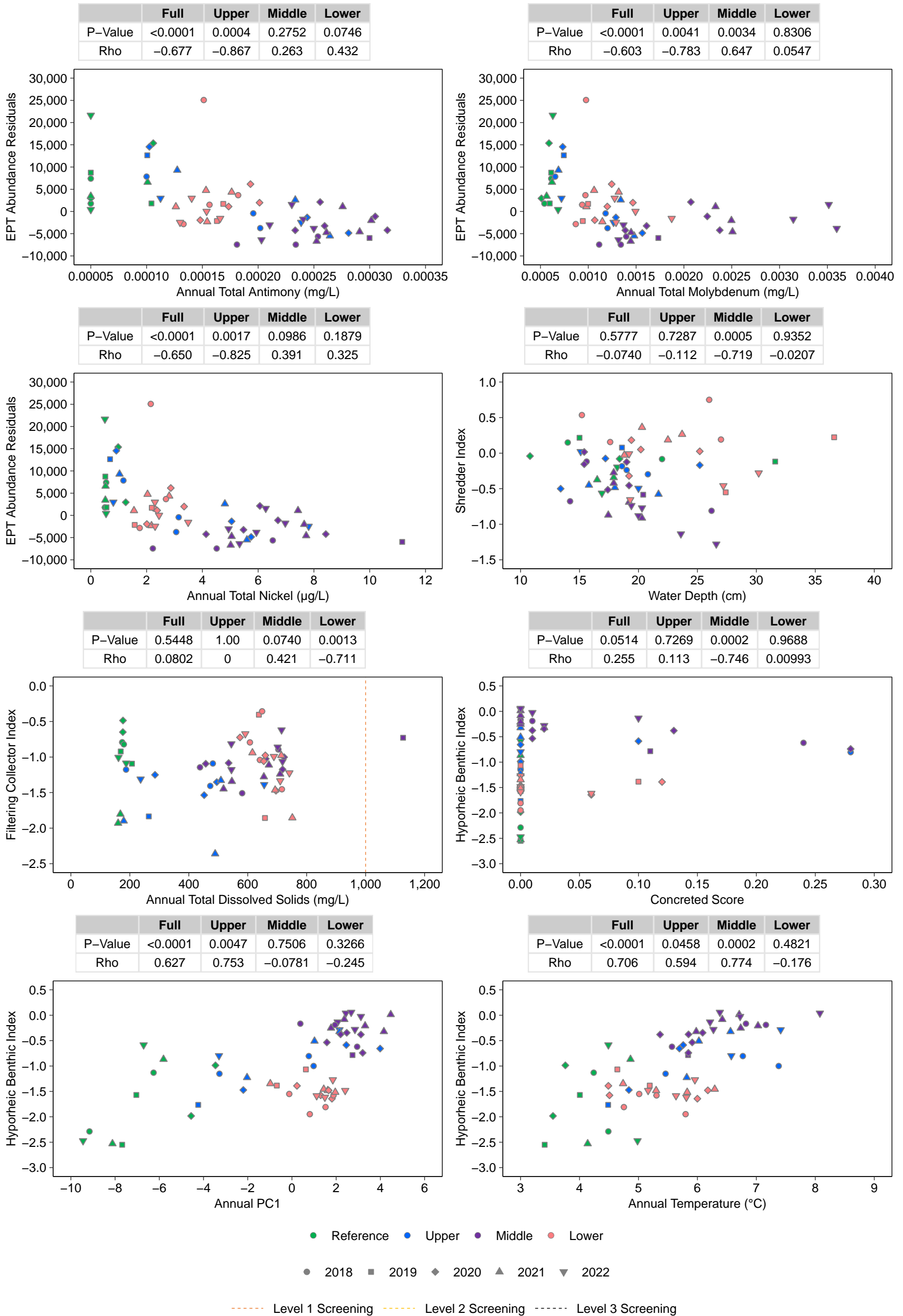


Figure : Scatterplots of Spearman's Correlation Relationships Between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, 2018 to 2022

Notes: Only relationships with at least one relationship with a significant p-value and $abs(\rho) > 0.6$ are displayed. The Full correlations included reference areas as well as the upper, middle, and lower areas. Annual = Averaged mean based on the previous year of water quality sampling (see methods for details). Levels 1, 2, and 3 Screening are Elk Valley Water Quality Plan (EVWQP) benchmarks for Total Dissolved Solid and Cadmium; Updated Effects Concentration for Nitrate and Sulphate; and Proposed benchmarks for Nickel. Screening values were not shown where measured water quality values were below benchmarks or concentrations and for constituents that have no benchmarks. Endpoint residuals represent the residuals of multiple regression models predicting the expected benthic invertebrate community given habitat at mine-exposed sites (RAEMP 2020a). Upper study area is defined as monitoring areas RG_FODHE to RG_FOUSH, middle study area is RG_FOUKI to RG_FRCP1SW, and the lower study area is RG_FRUPO to RG_FOU EW.

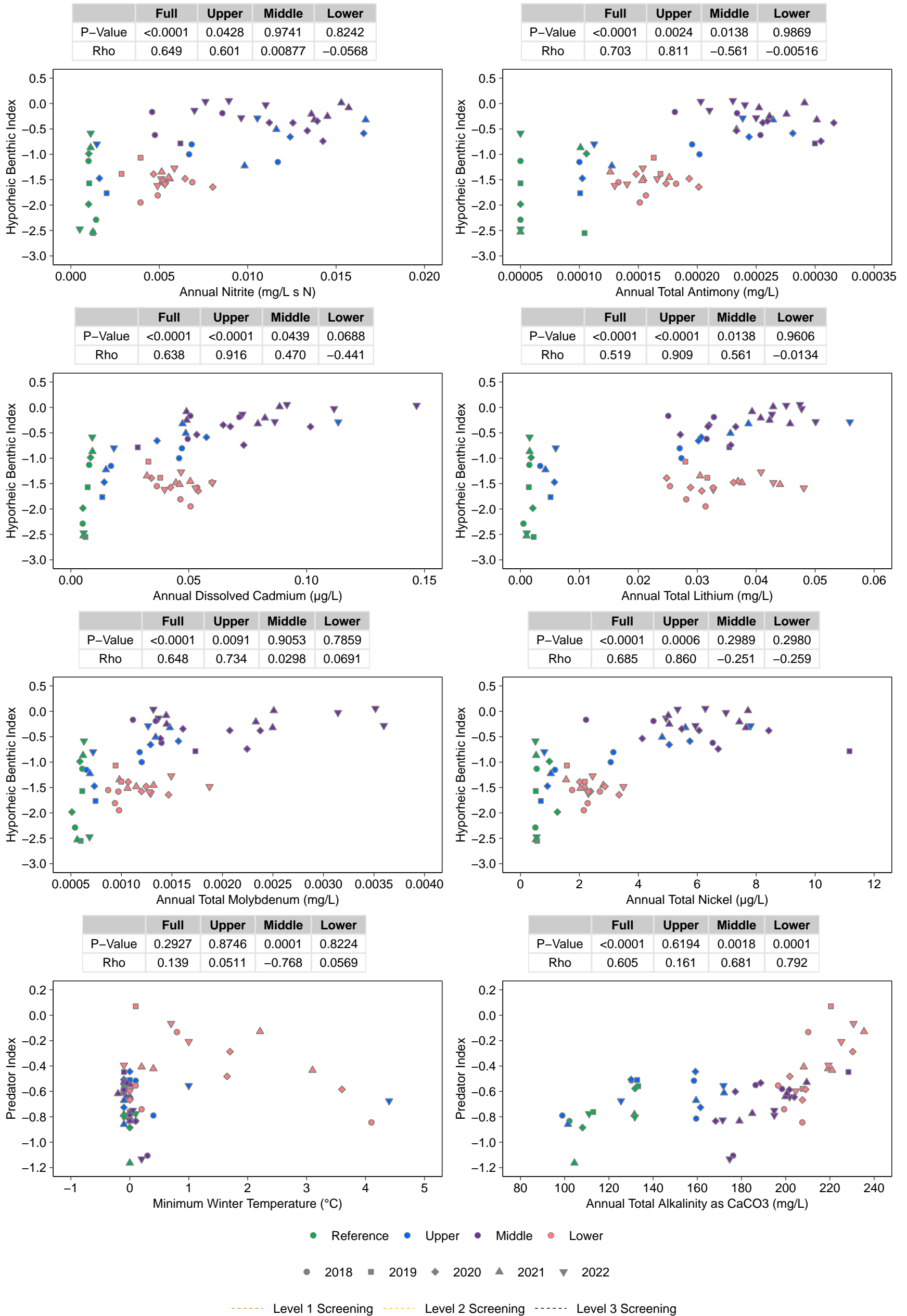


Figure 10 : Scatterplots of Spearman's Correlation Relationships Between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, 2018 to 2022

Notes: Only relationships with at least one relationship with a significant p-value and abs(rho) > 0.6 are displayed. The Full correlations included reference areas as well as the upper, middle, and lower areas. Annual = Averaged mean based on the previous year of water quality sampling (see methods for details). Levels 1, 2, and 3 Screening are Elk Valley Water Quality Plan (EWWQP) benchmarks for Total Dissolved Solid and Cadmium; Updated Effects Concentration for Nitrate and Sulphate; and Proposed benchmarks for Nickel. Screening values were not shown where measured water quality values were below benchmarks or concentrations and for constituents that have no benchmarks. Endpoint residuals represent the residuals of multiple regression models predicting the expected benthic invertebrate community given habitat at mine-exposed sites (RAEMP 2020a). Upper study area is defined as monitoring areas RG_FODHE to RG_FOUSH, middle study area is RG_FOUKI to RG_FRCP1SW, and the lower study area is RG_FRUPO to RG_FOU EW.

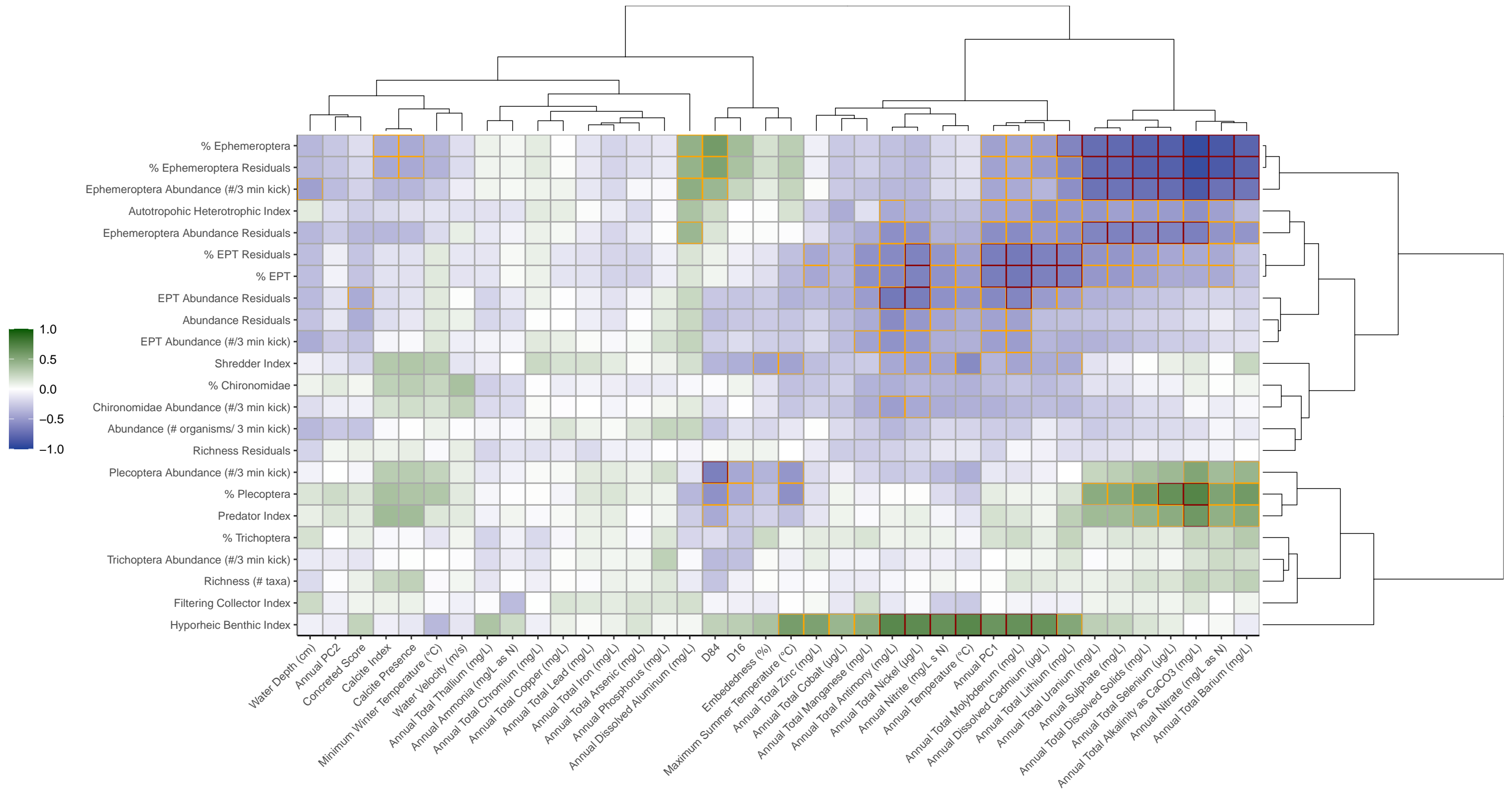


Figure H.2: Heatmap of Spearman Correlation Coefficients of Benthic Invertebrate Community Endpoints against Physical and Chemical Parameters, Full Fording River, 2018 to 2022

Notes: Orange boxes show significant correlations (p -value $< 0.05/38$ for Bonferroni Correction), and red boxes show significant correlations with absolute coefficients > 0.6 . Cluster diagrams on x- and y-axis represent similarities using Euclidean distances clustered according to Ward's minimum variance method.

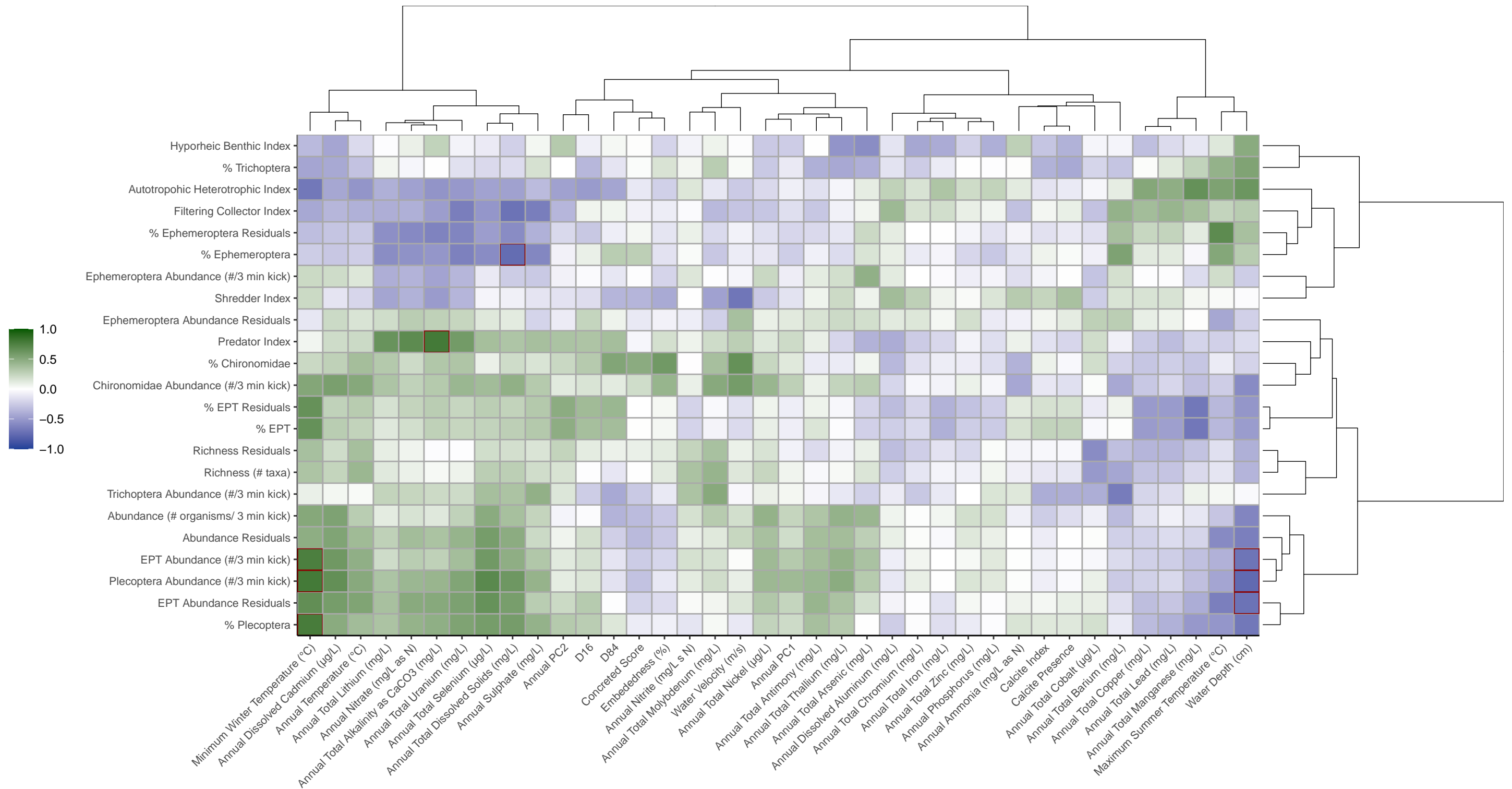


Figure H.3: Heatmap of Spearman Correlation Coefficients of Benthic Invertebrate Community Endpoints against Physical and Chemical Parameters, Lower Fording River, 2018 to 2022

Notes: Orange boxes show significant correlations (p-value < 0.05/38 for Bonferroni Correction), and red boxes show significant correlations with absolute coefficients > 0.6. Cluster diagrams on x- and y-axis represent similarities using Euclidean distances clustered according to Ward's minimum variance method.

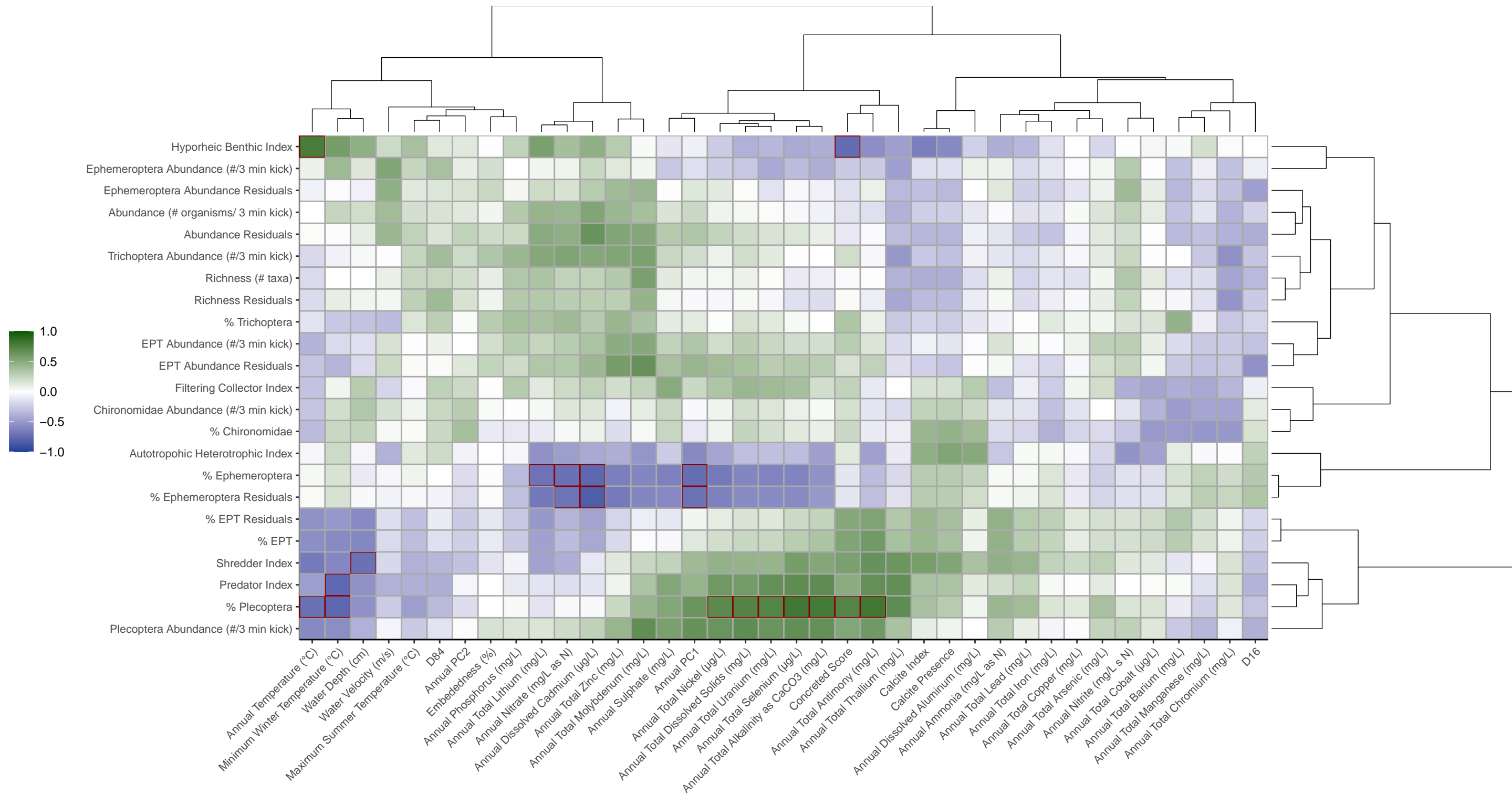


Figure H.4: Heatmap of Spearman Correlation Coefficients of Benthic Invertebrate Community Endpoints against Physical and Chemical Parameters, Middle Fording River, 2018 to 2022

Notes: Orange boxes show significant correlations (p-value < 0.05/38 for Bonferroni Correction), and red boxes show significant correlations with absolute coefficients > 0.6. Cluster diagrams on x- and y-axis represent similarities using Euclidean distances clustered according to Ward's minimum variance method.

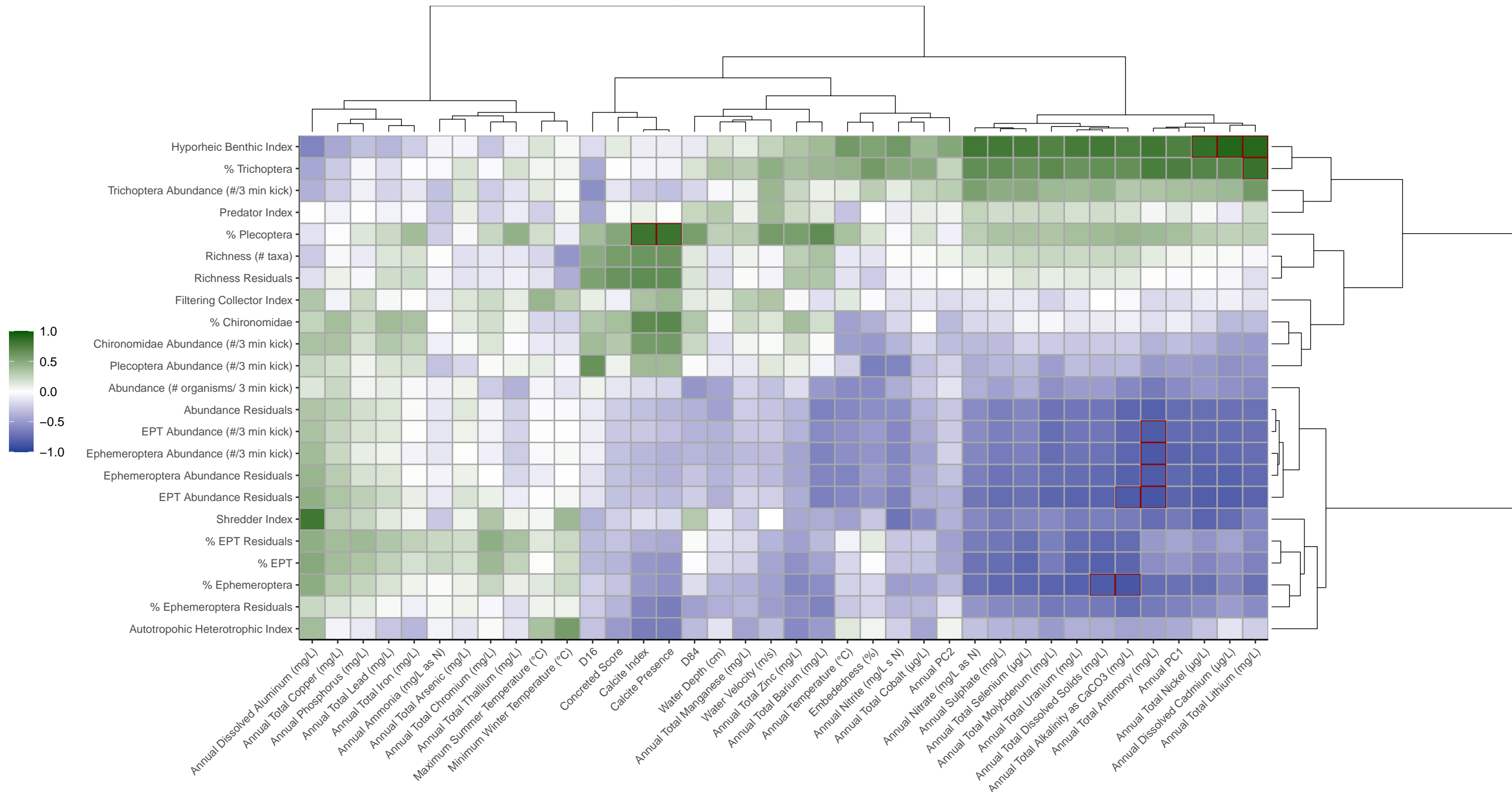


Figure H.5: Heatmap of Spearman Correlation Coefficients of Benthic Invertebrate Community Endpoints against Physical and Chemical Parameters, Upper Fording River, 2018 to 2022

Notes: Orange boxes show significant correlations (p-value < 0.05/38 for Bonferroni Correction), and red boxes show significant correlations with absolute coefficients > 0.6. Cluster diagrams on x- and y-axis represent similarities using Euclidean distances clustered according to Ward's minimum variance method.



Figure H.6: Variance Partitioning Between Habitat, Water and Calcite Using Partial Canonical Correspondence Analysis of Benthic Invertebrate Communities in September, FRO LAEMP, 2018 to 2022

Notes: Lowest Practical Level taxon abundances were $\ln(x+1)$ transformed prior to analysis. Taxa that made up less than 1% of total abundance (on the $\ln(x+1)$ scale) and occurred in fewer than 10% of samples were excluded from analysis. Mine-exposed areas included in the FRO LAEMP were divided into three sections from upstream to downstream: Upper Study Area, Middle Study Area, and Lower Study Area.

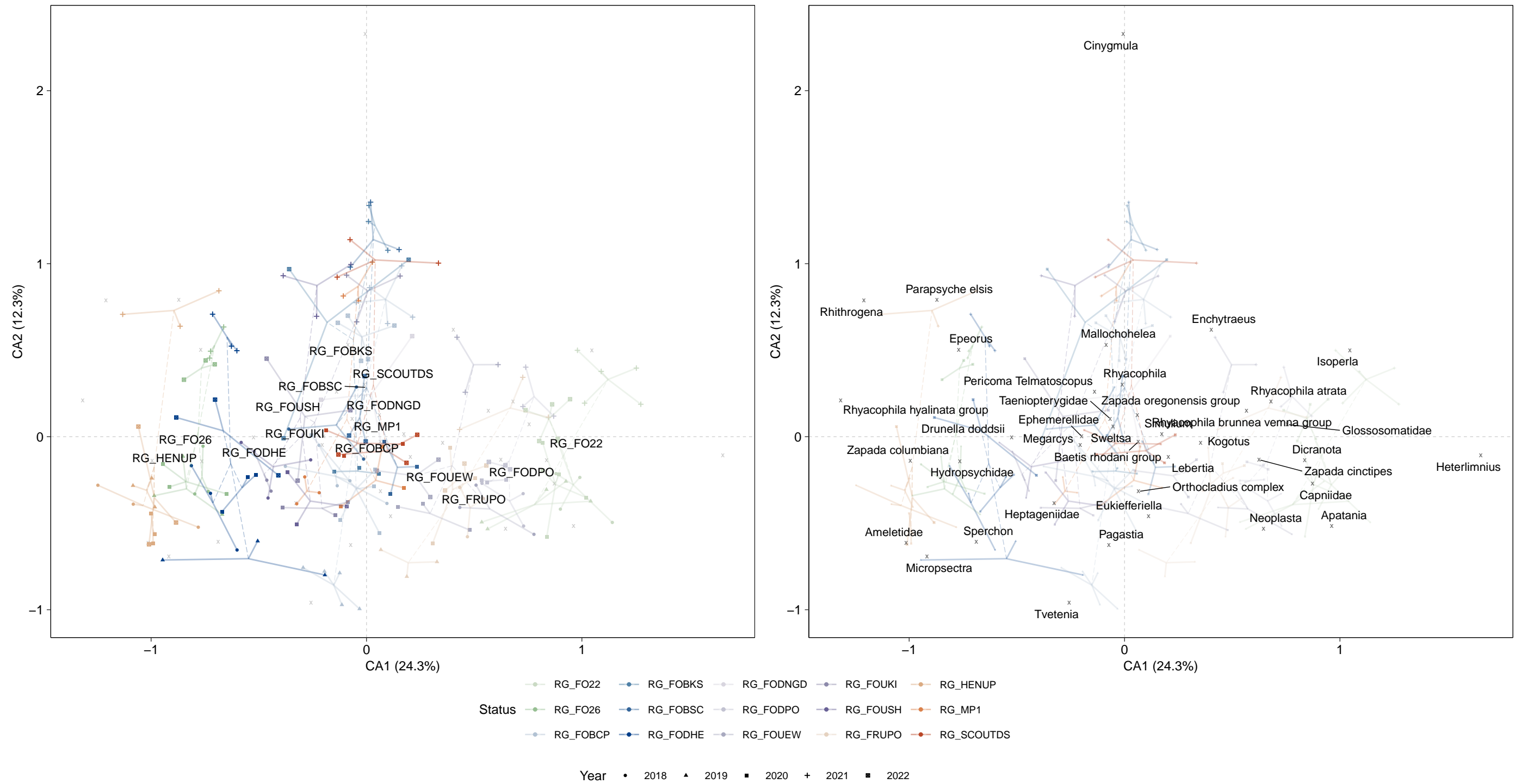


Figure H.7: Correspondence Analysis of Benthic Invertebrate Communities in September, FRO LAEMP, 2018 to 2022

Notes: Lowest Practical Level taxon abundances were $\ln(x+1)$ transformed prior to analysis. Taxa that made up less than 1% of total abundance (on the $\ln(x+1)$ scale) and occurred in fewer than 10% of samples were excluded from analysis. Mine-exposed areas included in the FRO LAEMP were divided into three sections from upstream to downstream: Upper Study Area, Middle Study Area, and Lower Study Area.

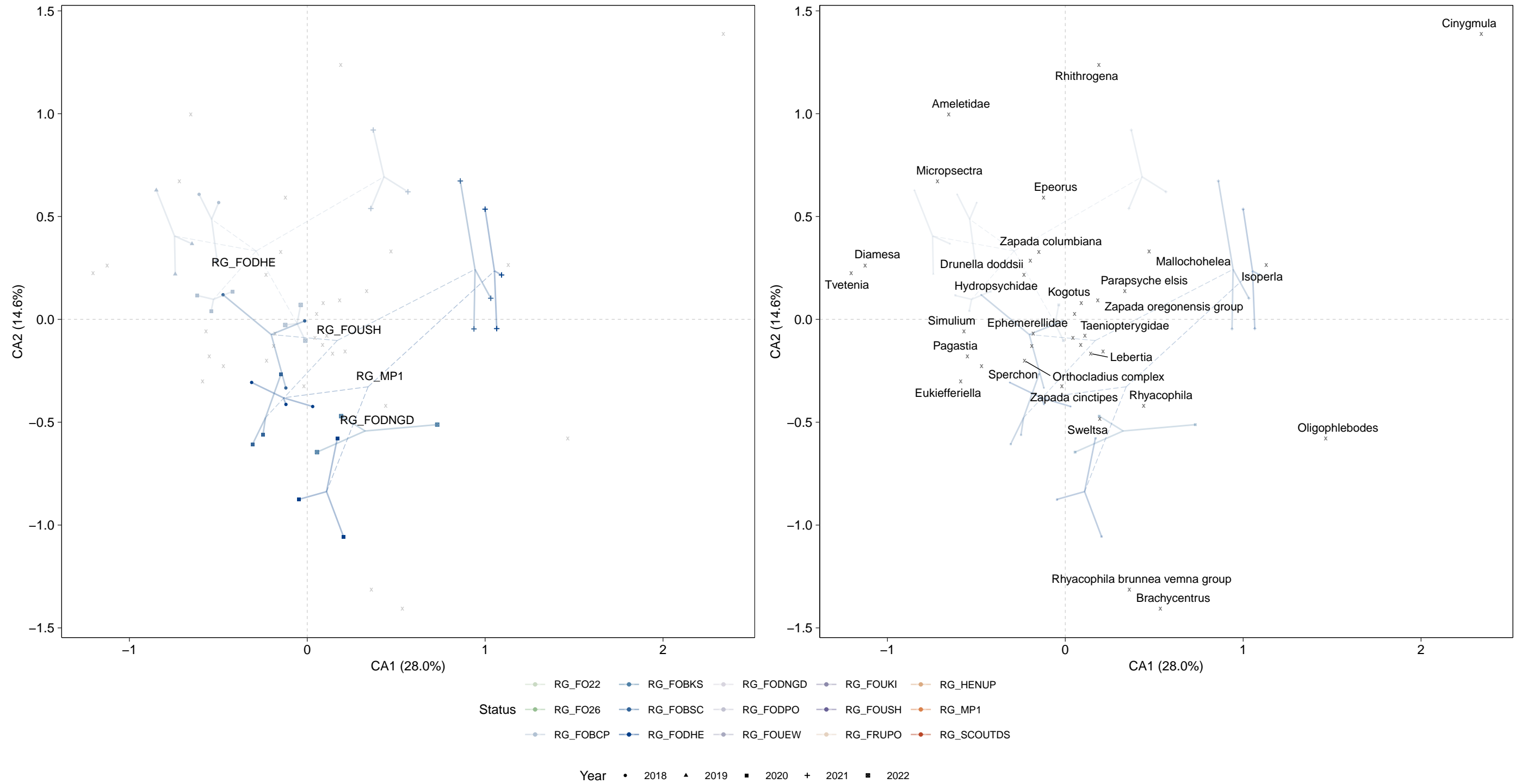


Figure H.7: Correspondence Analysis of Benthic Invertebrate Communities in September, FRO LAEMP, 2018 to 2022

Notes: Lowest Practical Level taxon abundances were $\ln(x+1)$ transformed prior to analysis. Taxa that made up less than 1% of total abundance (on the $\ln(x+1)$ scale) and occurred in fewer than 10% of samples were excluded from analysis. Mine-exposed areas included in the FRO LAEMP were divided into three sections from upstream to downstream: Upper Study Area, Middle Study Area, and Lower Study Area.

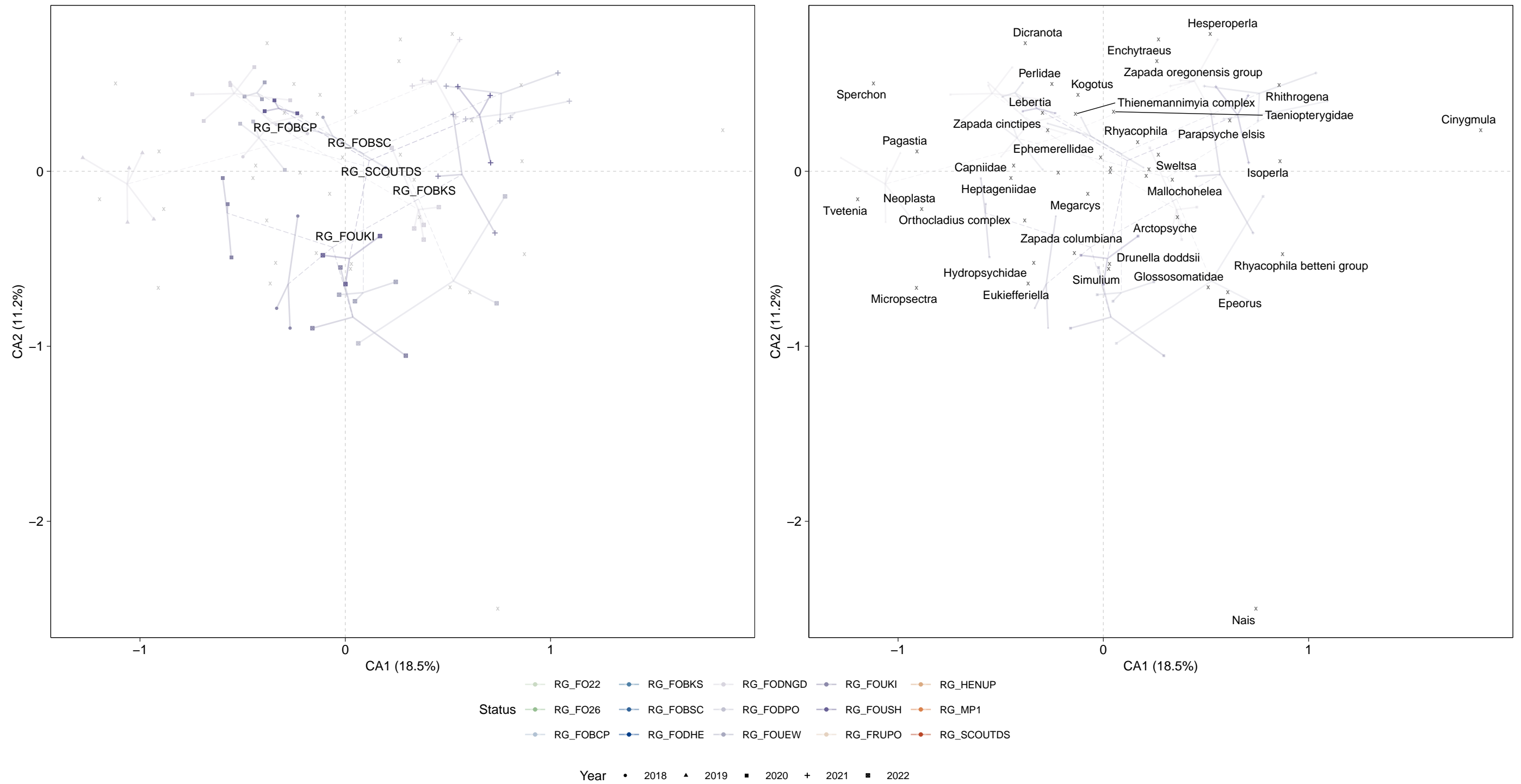


Figure H.7: Correspondence Analysis of Benthic Invertebrate Communities in September, FRO LAEMP, 2018 to 2022

Notes: Lowest Practical Level taxon abundances were $\ln(x+1)$ transformed prior to analysis. Taxa that made up less than 1% of total abundance (on the $\ln(x+1)$ scale) and occurred in fewer than 10% of samples were excluded from analysis. Mine-exposed areas included in the FRO LAEMP were divided into three sections from upstream to downstream: Upper Study Area, Middle Study Area, and Lower Study Area.

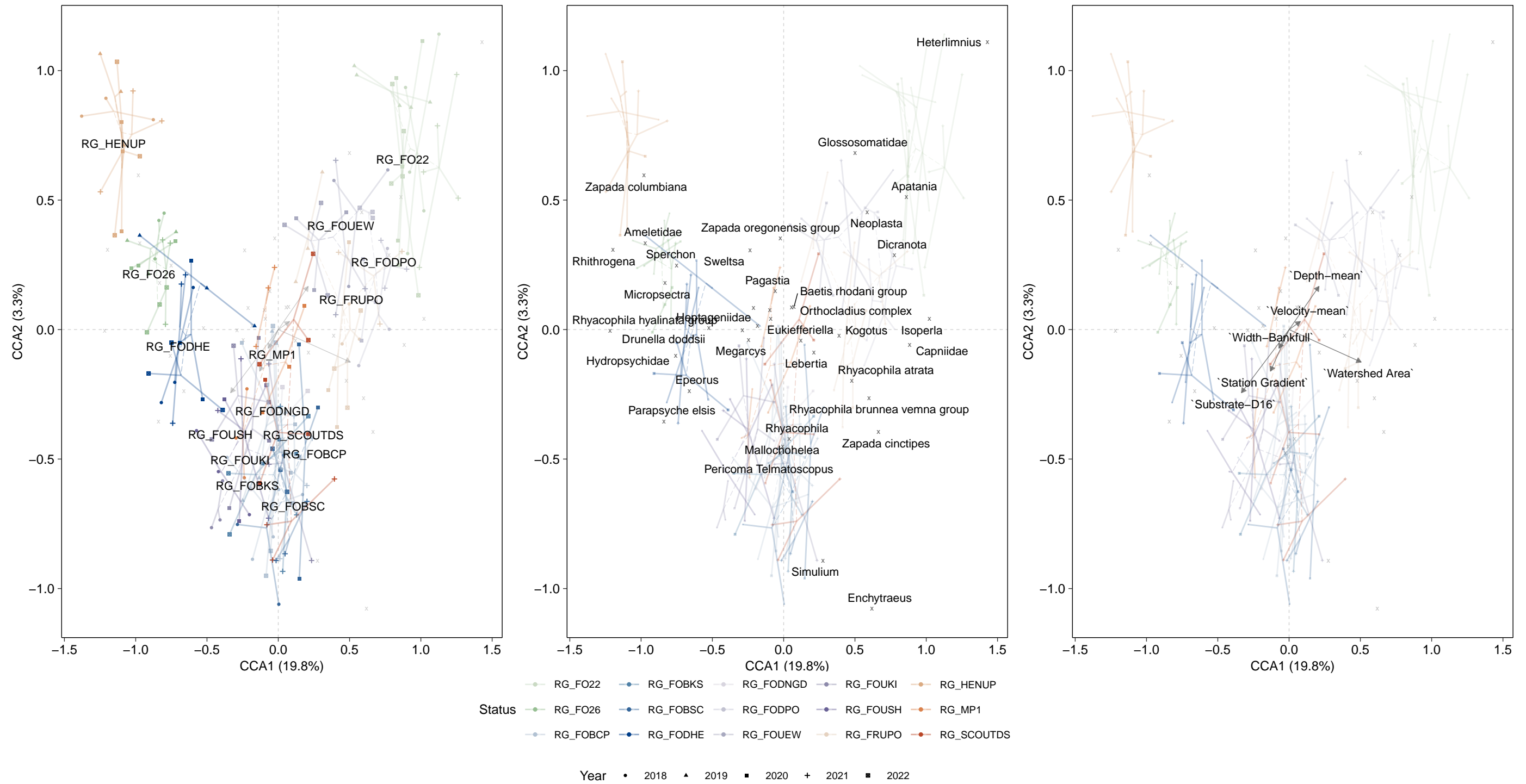


Figure H.8: Canonical Correspondence Analysis of Benthic Invertebrate Communities in September Constrained by Habitat Variables, FRO LAEMP, 2018 to 2022

Notes: Lowest Practical Level taxon abundances were $\ln(x+1)$ transformed prior to analysis. Taxa that made up less than 1% of total abundance (on the $\ln(x+1)$ scale) and occurred in fewer than 10% of samples were excluded from analysis. Mine-exposed areas included in the FRO LAEMP were divided into three sections from upstream to downstream: Upper Study Area, Middle Study Area, and Lower Study Area.

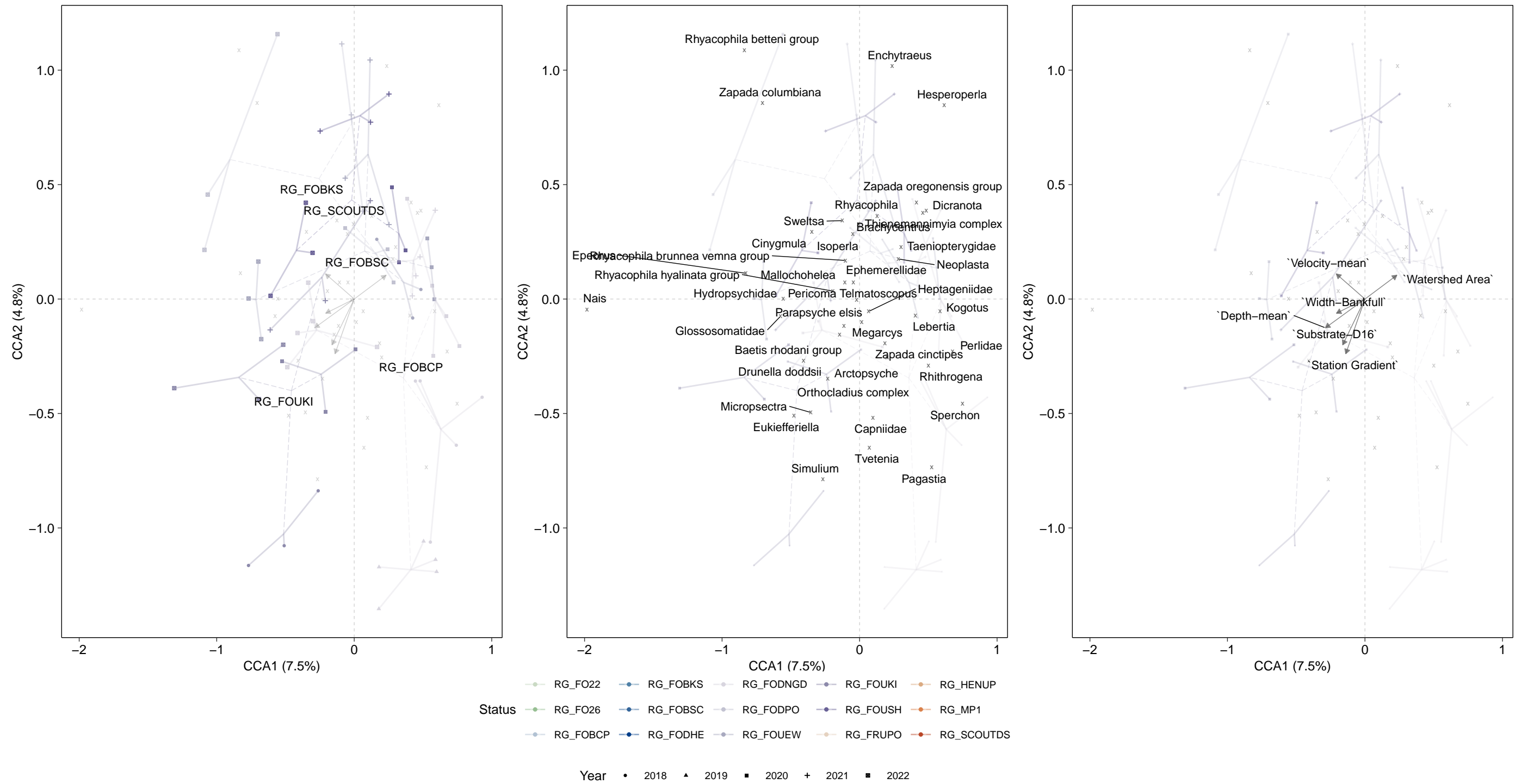


Figure H.8: Canonical Correspondence Analysis of Benthic Invertebrate Communities in September Constrained by Habitat Variables, FRO LAEMP, 2018 to 2022

Notes: Lowest Practical Level taxon abundances were $\ln(x+1)$ transformed prior to analysis. Taxa that made up less than 1% of total abundance (on the $\ln(x+1)$ scale) and occurred in fewer than 10% of samples were excluded from analysis. Mine-exposed areas included in the FRO LAEMP were divided into three sections from upstream to downstream: Upper Study Area, Middle Study Area, and Lower Study Area.

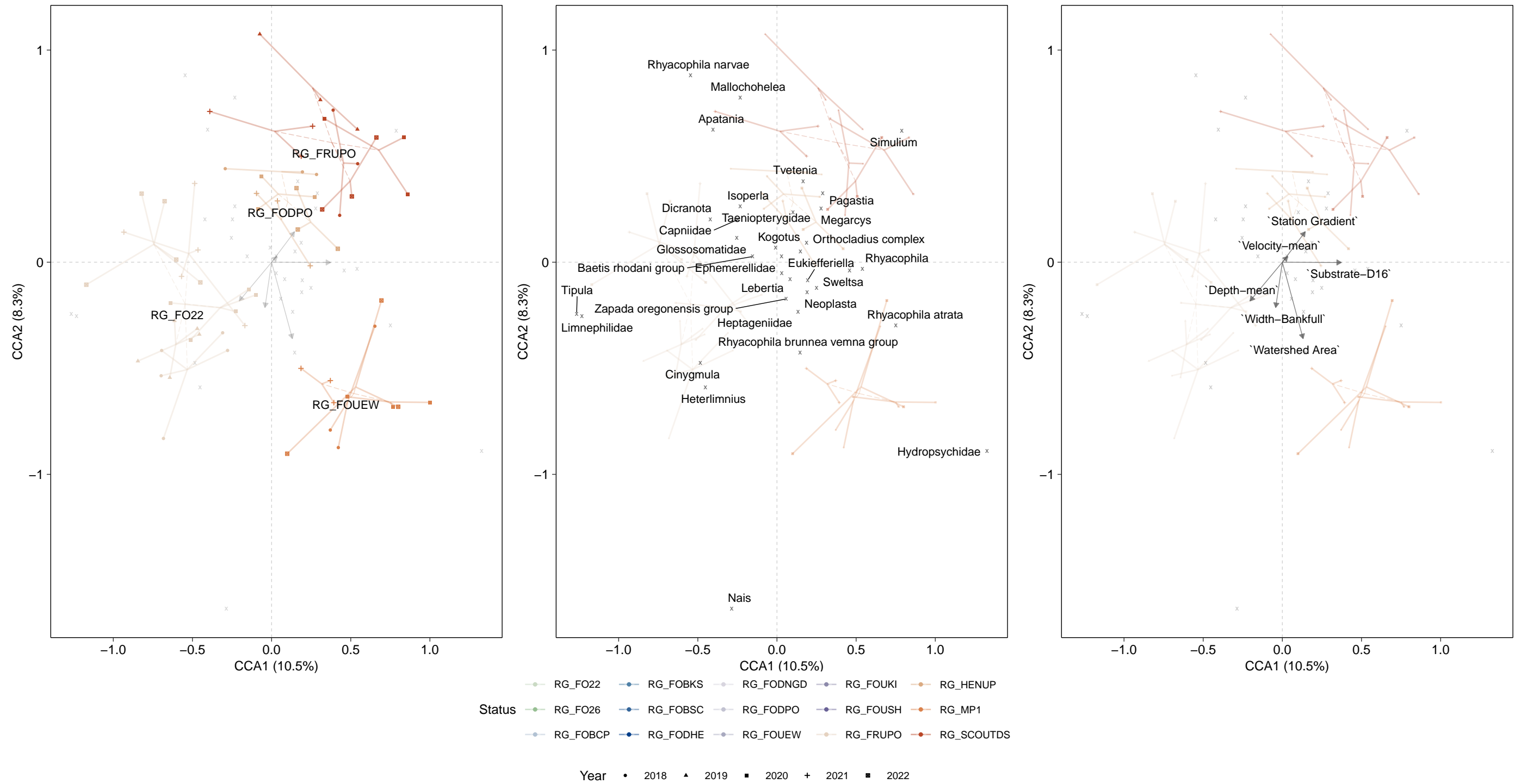


Figure H.8: Canonical Correspondence Analysis of Benthic Invertebrate Communities in September Constrained by Habitat Variables, FRO LAEMP, 2018 to 2022

Notes: Lowest Practical Level taxon abundances were $\ln(x+1)$ transformed prior to analysis. Taxa that made up less than 1% of total abundance (on the $\ln(x+1)$ scale) and occurred in fewer than 10% of samples were excluded from analysis. Mine-exposed areas included in the FRO LAEMP were divided into three sections from upstream to downstream: Upper Study Area, Middle Study Area, and Lower Study Area.

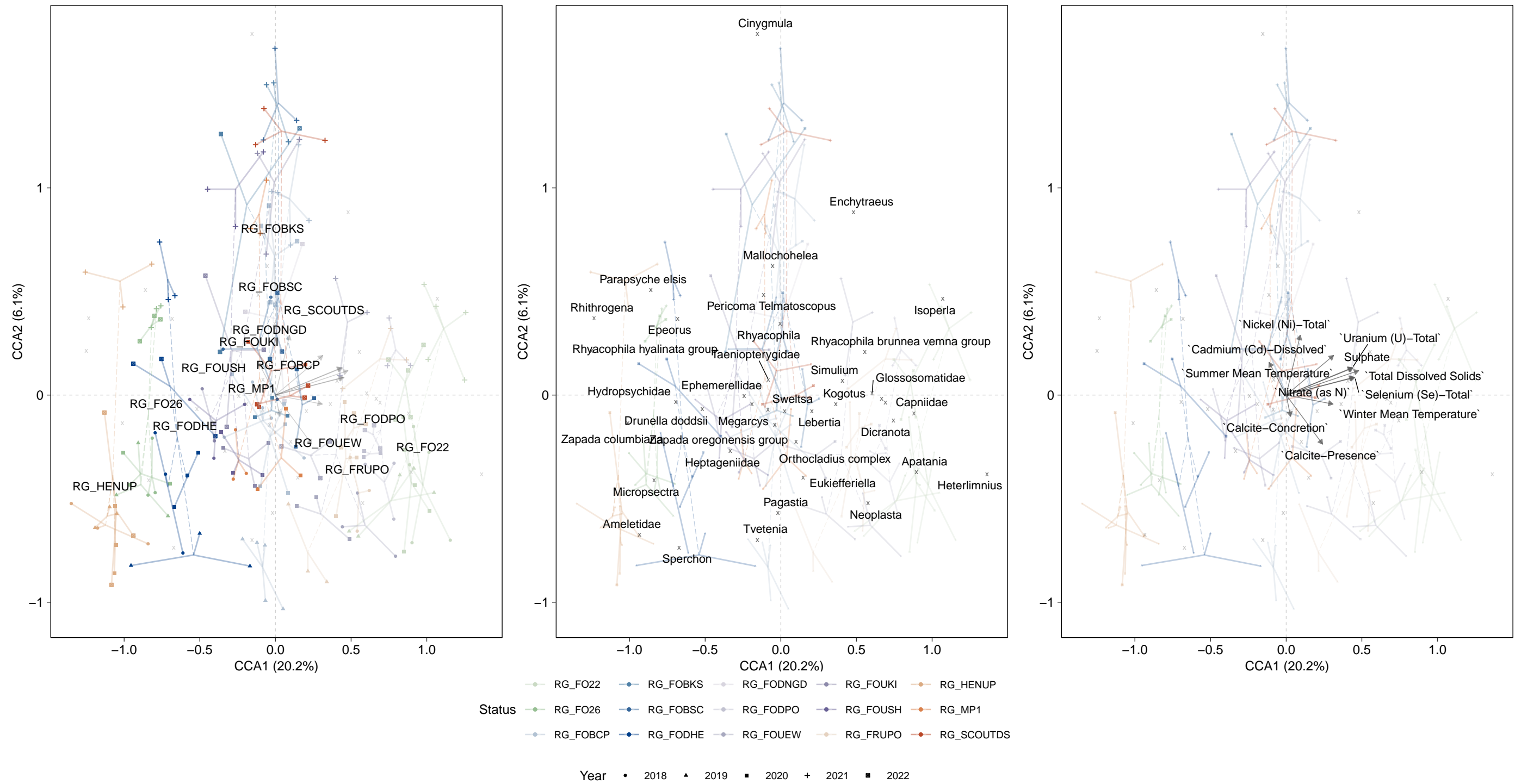


Figure H.9: Canonical Correspondence Analysis of Benthic Invertebrate Communities in September Constrained by Water Chemistry and Calcite Variables, FRO LAEMP, 2018 to 2022

Notes: Lowest Practical Level taxon abundances were $\ln(x+1)$ transformed prior to analysis. Taxa that made up less than 1% of total abundance (on the $\ln(x+1)$ scale) and occurred in fewer than 10% of samples were excluded from analysis. Mine-exposed areas included in the FRO LAEMP were divided into three sections from upstream to downstream: Upper Study Area, Middle Study Area, and Lower Study Area.

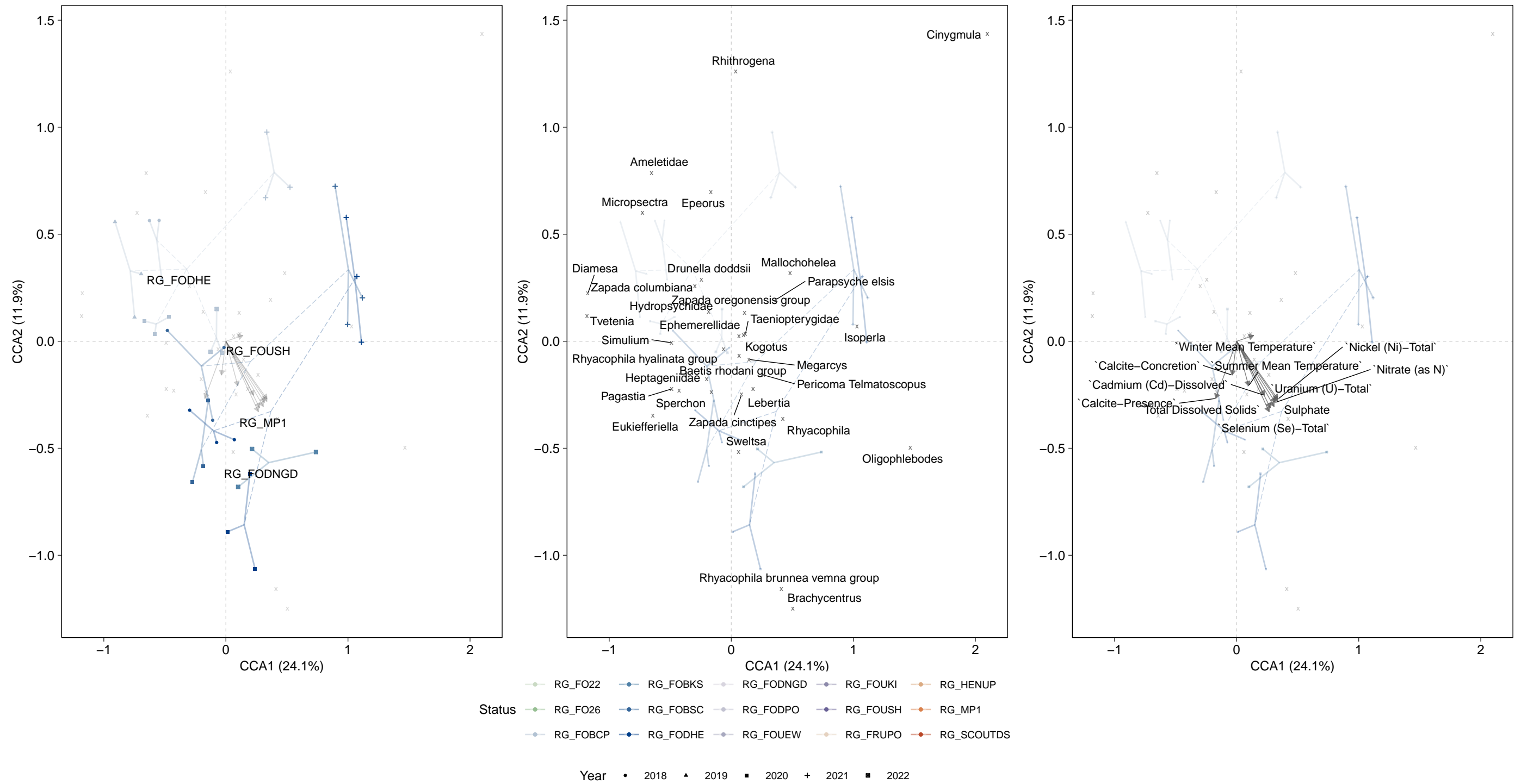


Figure H.9: Canonical Correspondence Analysis of Benthic Invertebrate Communities in September Constrained by Water Chemistry and Calcite Variables, FRO LAEMP, 2018 to 2022

Notes: Lowest Practical Level taxon abundances were $\ln(x+1)$ transformed prior to analysis. Taxa that made up less than 1% of total abundance (on the $\ln(x+1)$ scale) and occurred in fewer than 10% of samples were excluded from analysis. Mine-exposed areas included in the FRO LAEMP were divided into three sections from upstream to downstream: Upper Study Area, Middle Study Area, and Lower Study Area.

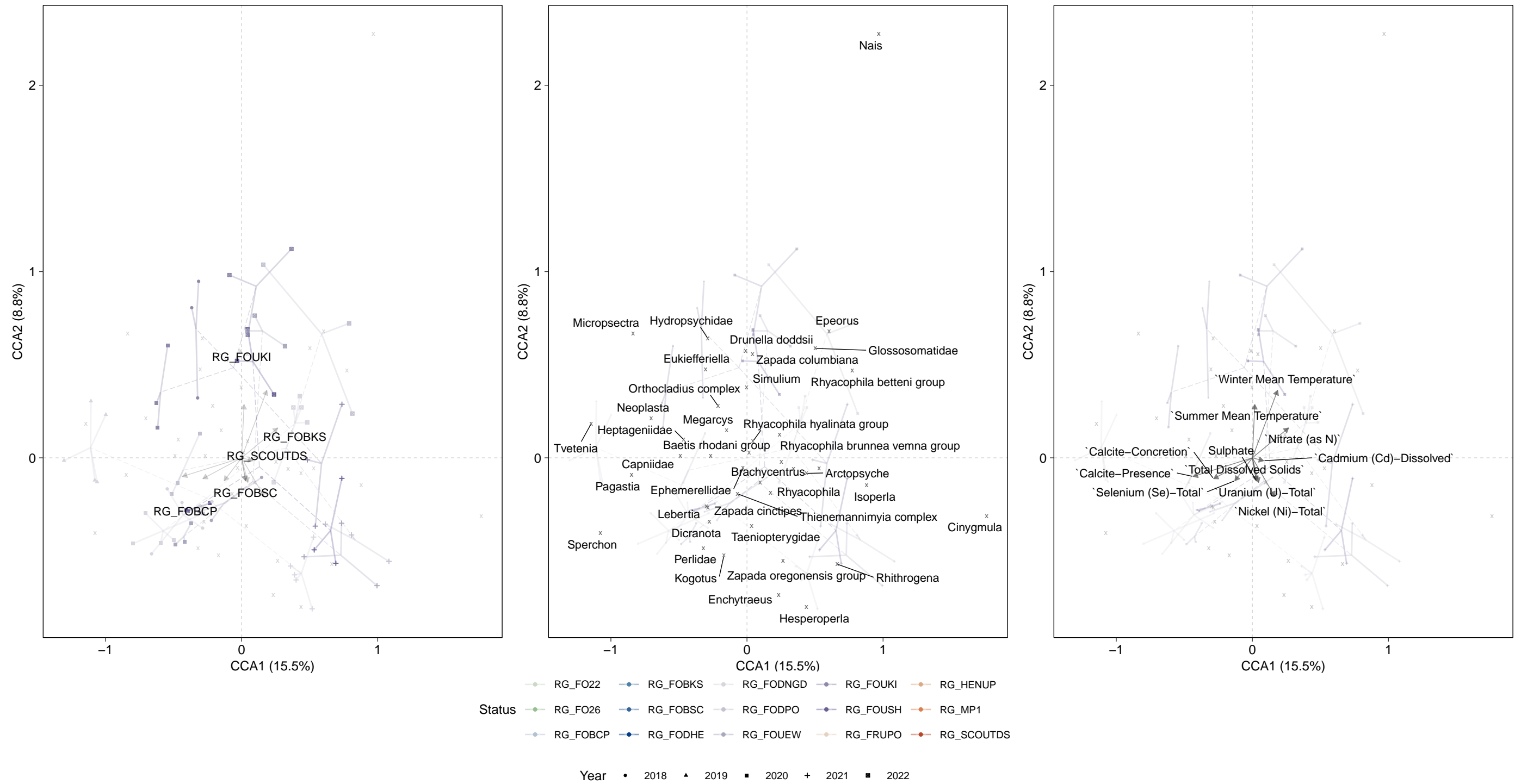


Figure H.9: Canonical Correspondence Analysis of Benthic Invertebrate Communities in September Constrained by Water Chemistry and Calcite Variables, FRO LAEMP, 2018 to 2022

Notes: Lowest Practical Level taxon abundances were $\ln(x+1)$ transformed prior to analysis. Taxa that made up less than 1% of total abundance (on the $\ln(x+1)$ scale) and occurred in fewer than 10% of samples were excluded from analysis. Mine-exposed areas included in the FRO LAEMP were divided into three sections from upstream to downstream: Upper Study Area, Middle Study Area, and Lower Study Area.

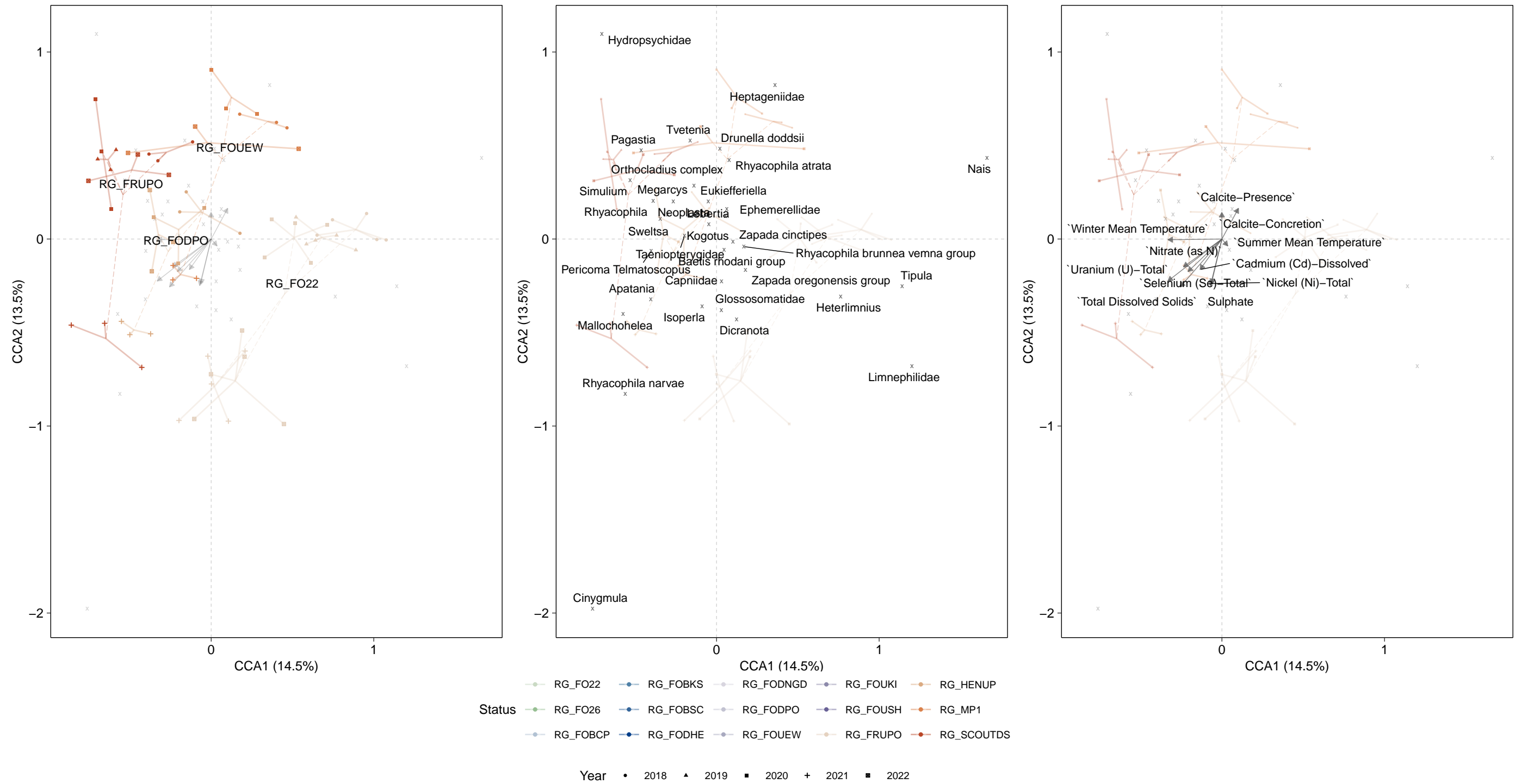


Figure H.9: Canonical Correspondence Analysis of Benthic Invertebrate Communities in September Constrained by Water Chemistry and Calcite Variables, FRO LAEMP, 2018 to 2022

Notes: Lowest Practical Level taxon abundances were $\ln(x+1)$ transformed prior to analysis. Taxa that made up less than 1% of total abundance (on the $\ln(x+1)$ scale) and occurred in fewer than 10% of samples were excluded from analysis. Mine-exposed areas included in the FRO LAEMP were divided into three sections from upstream to downstream: Upper Study Area, Middle Study Area, and Lower Study Area.

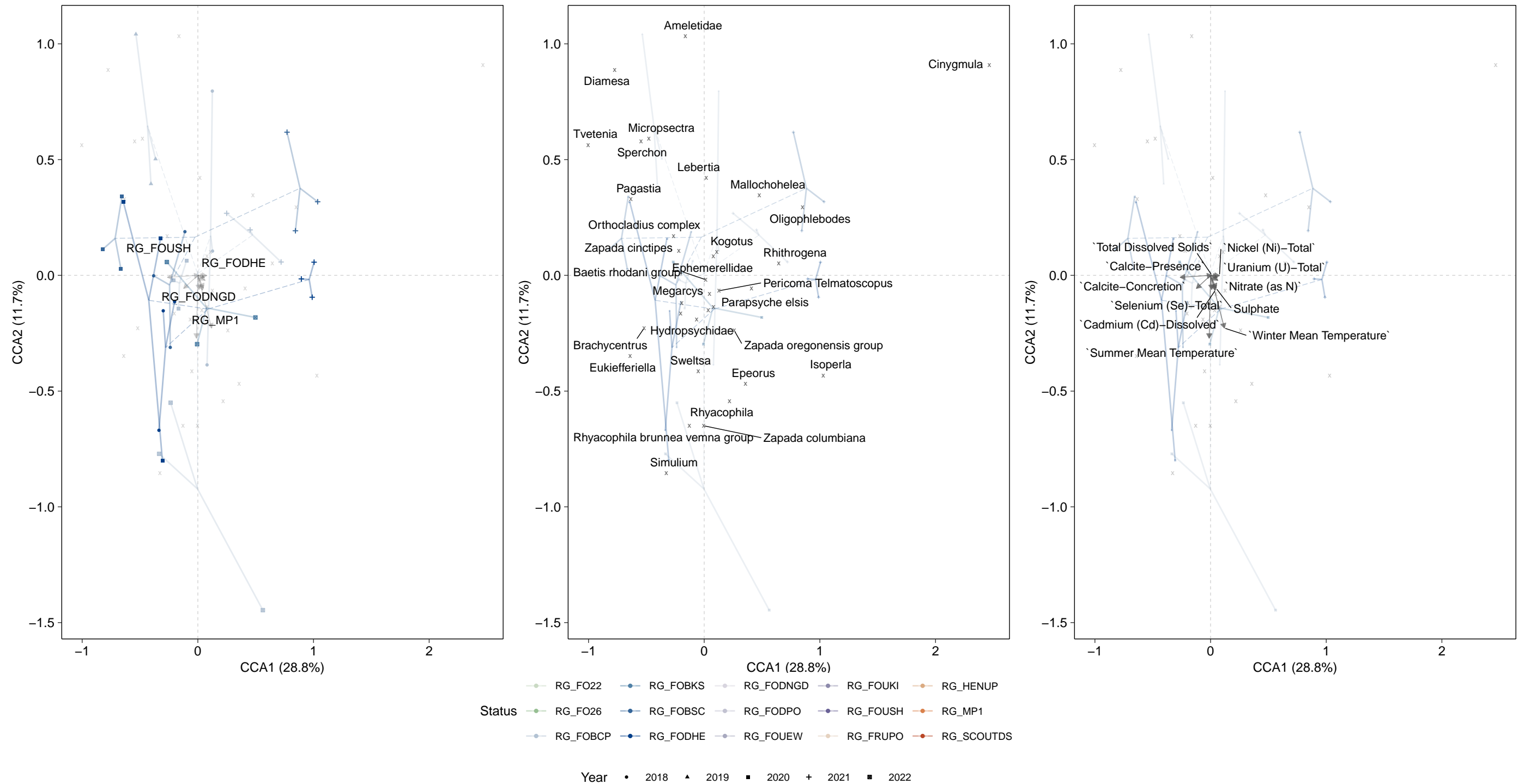


Figure H.10: Partial Canonical Correspondence Analysis of Benthic Invertebrate Communities in September Constrained by Water Chemistry and Calcite Variables After Controlling for Habitat Variables, FRO LAEMP, 2018 to 2022

Notes: Lowest Practical Level taxon abundances were $\ln(x+1)$ transformed prior to analysis. Taxa that made up less than 1% of total abundance (on the $\ln(x+1)$ scale) and occurred in fewer than 10% of samples were excluded from analysis. Mine-exposed areas included in the FRO LAEMP were divided into three sections from upstream to downstream: Upper Study Area, Middle Study Area, and Lower Study Area.

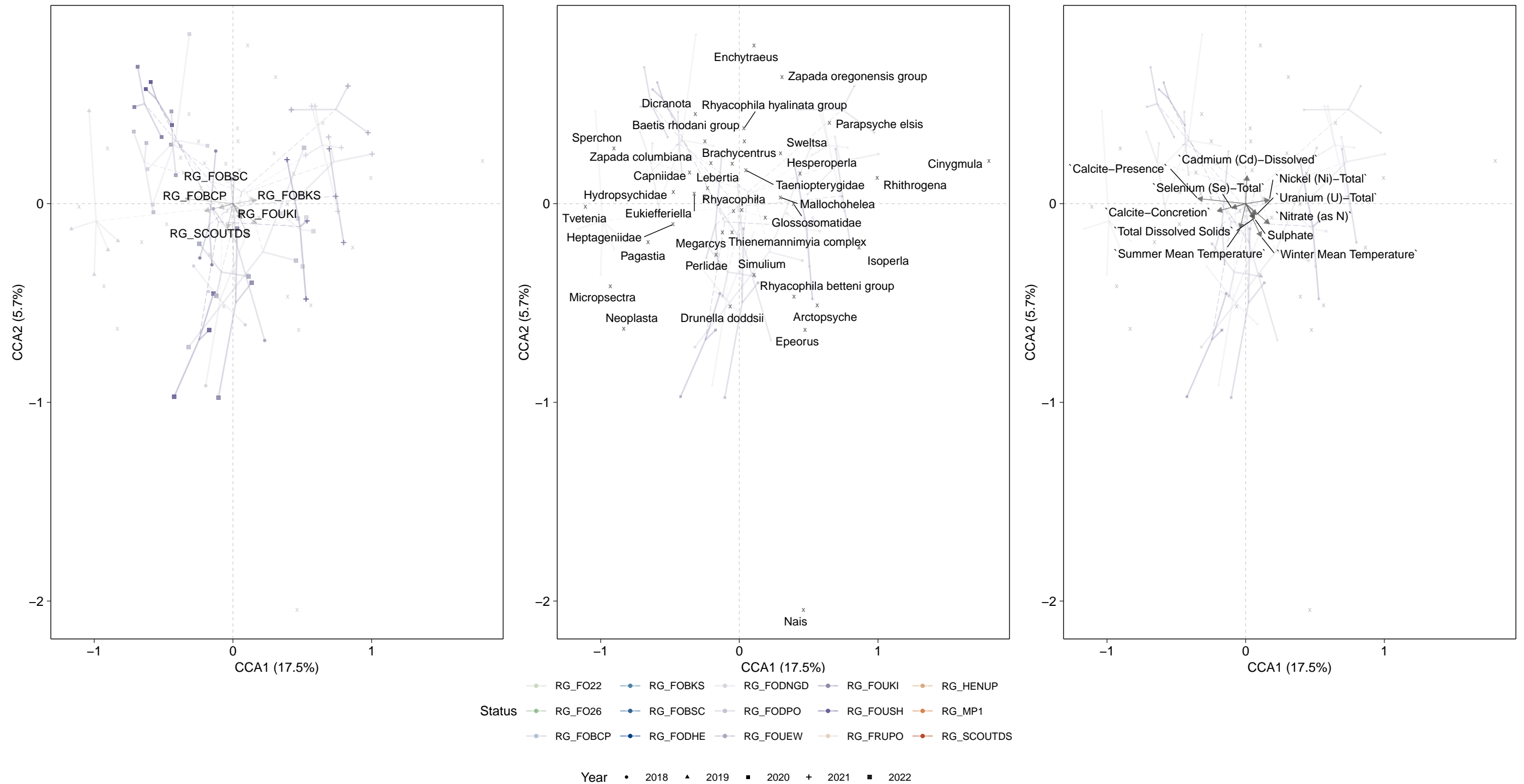


Figure H.10: Partial Canonical Correspondence Analysis of Benthic Invertebrate Communities in September Constrained by Water Chemistry and Calcite Variables After Controlling for Habitat Variables, FRO LAEMP, 2018 to 2022

Notes: Lowest Practical Level taxon abundances were $\ln(x+1)$ transformed prior to analysis. Taxa that made up less than 1% of total abundance (on the $\ln(x+1)$ scale) and occurred in fewer than 10% of samples were excluded from analysis. Mine-exposed areas included in the FRO LAEMP were divided into three sections from upstream to downstream: Upper Study Area, Middle Study Area, and Lower Study Area.

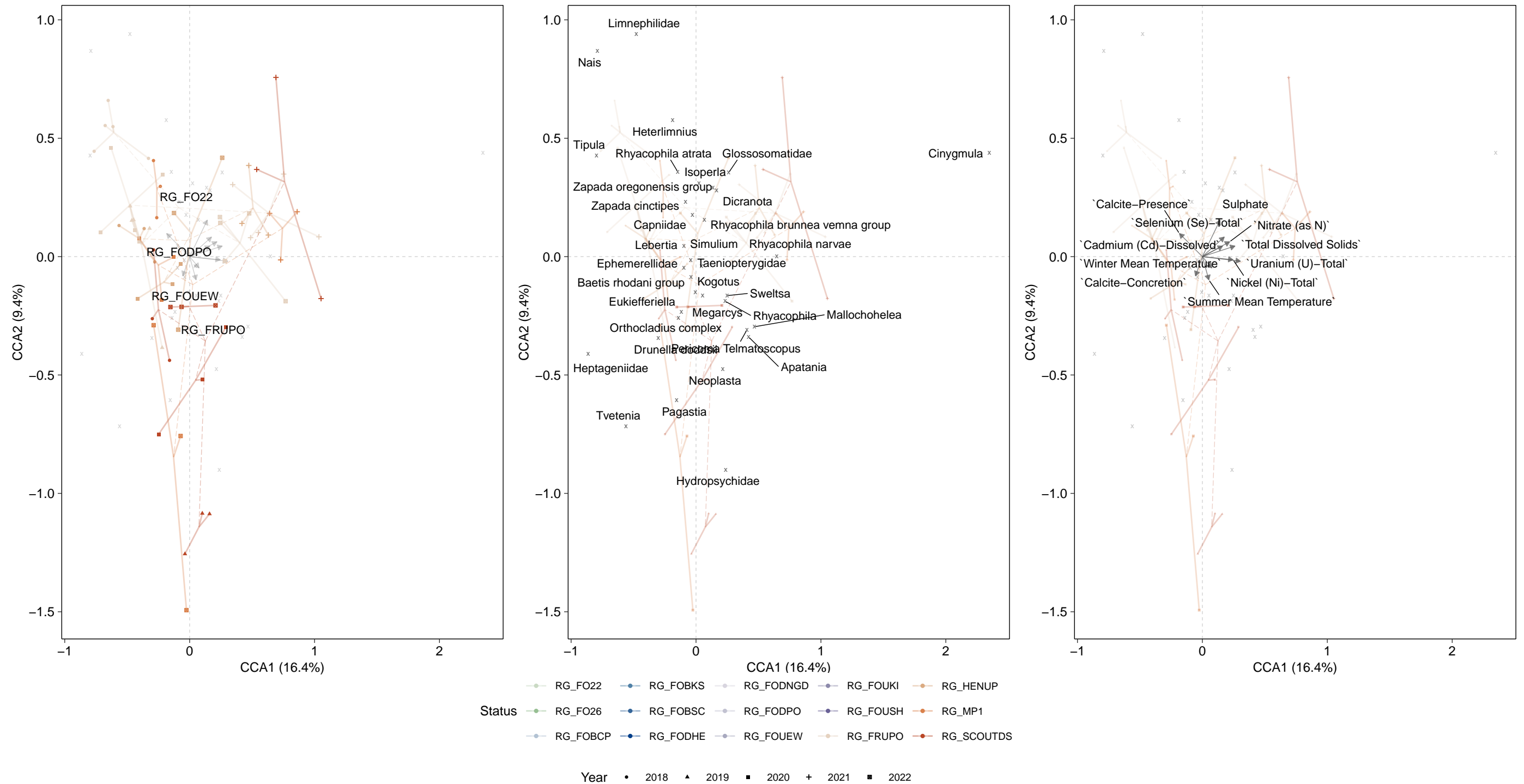


Figure H.10: Partial Canonical Correspondence Analysis of Benthic Invertebrate Communities in September Constrained by Water Chemistry and Calcite Variables After Controlling for Habitat Variables, FRO LAEMP, 2018 to 2022

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Table H.1: Spearman's Correlation Relationships between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, September 2018 to 2022

Parameter	Correlation Rho							
	Abundance (# organisms/ 3 min kick)				Abundance Residuals			
	Full	Upper	Middle	Lower	Full	Upper	Middle	Lower
Calcite Index	-0.0299	-0.161	-0.238	-0.242	-0.159	-0.312	-0.349	-0.0888
Calcite Presence	0.00462	-0.193	-0.235	-0.156	-0.113	-0.351	-0.355	0
Concreted Score	-0.286	-0.124	-0.139	-0.333	-0.404	-0.242	-0.108	-0.338
Embeddedness (%)	-0.191	-0.576	0.0627	-0.265	-0.254	-0.558	0.207	-0.260
D16	-0.140	0.0705	-0.215	-0.0176	-0.269	-0.106	-0.399	0.183
D84	-0.286	-0.523	0.162	-0.372	-0.318	-0.375	0.149	-0.229
Water Velocity (m/s)	-0.0144	-0.301	0.389	0.185	0.0761	-0.287	0.414	0.234
Water Depth (cm)	-0.347	-0.448	0.196	-0.609	-0.294	-0.462	0.105	-0.642
Minimum Winter Temperature (°C)	0.0728	-0.132	0.241	0.511	0.123	-0.0219	-0.0125	0.477
Maximum Summer Temperature (°C)	-0.114	-0.0525	0.180	-0.280	-0.282	-0.0245	0.260	-0.585
Annual PC1	-0.246	-0.574	0.218	0.243	-0.458	-0.736	0.330	0.199
Annual PC2	-0.265	-0.133	0.129	-0.0526	-0.116	-0.273	0.258	0.0630
Annual Temperature (°C)	-0.206	-0.573	0.00263	0.292	-0.404	-0.594	0.0175	0.399
Annual Total Alkalinity as CaCO3 (mg/L)	-0.152	-0.594	-0.0685	0.131	-0.159	-0.776	0.0860	0.352
Annual Nitrate (mg/L as N)	-0.0438	-0.392	0.419	0.164	-0.0937	-0.580	0.477	0.385
Annual Nitrite (mg/L s N)	-0.185	-0.399	0.263	0.174	-0.441	-0.559	0.184	0.0898
Annual Ammonia (mg/L as N)	-0.0333	-0.0699	-0.0254	-0.0753	-0.160	-0.112	-0.125	0.00103
Annual Phosphorus (mg/L)	0.245	0.0559	0.311	0.174	0.122	0.182	0.218	0.0836
Annual Sulphate (mg/L)	-0.214	-0.462	0.154	0.247	-0.263	-0.650	0.305	0.214
Annual Total Dissolved Solids (mg/L)	-0.183	-0.490	0.0465	0.368	-0.221	-0.692	0.202	0.484
Annual Dissolved Aluminum (mg/L)	0.234	0.140	-0.117	0.0640	0.225	0.336	-0.0754	0.0888
Annual Total Antimony (mg/L)	-0.353	-0.671	-0.152	0.335	-0.577	-0.811	-0.0263	0.379
Annual Total Arsenic (mg/L)	0.136	0.0699	0.150	0.424	-0.00818	0.133	0.119	0.276
Annual Total Barium (mg/L)	-0.0958	-0.503	-0.292	-0.329	-0.175	-0.629	-0.335	-0.228
Annual Dissolved Cadmium (µg/L)	-0.0922	-0.545	0.527	0.544	-0.317	-0.720	0.637	0.536
Annual Total Chromium (mg/L)	0.0432	-0.245	-0.371	0.0114	0.00684	-0.0559	-0.379	0.0175
Annual Total Cobalt (µg/L)	-0.172	-0.259	0.109	-0.0753	-0.322	-0.371	0.0105	0.0134
Annual Total Copper (mg/L)	0.148	0.224	0.0290	-0.144	0.00102	0.287	-0.0509	-0.219
Annual Total Iron (mg/L)	0.0295	-0.0350	-0.123	0.0526	-0.128	0.0210	-0.291	-0.0299
Annual Total Lead (mg/L)	0.0689	0.0979	-0.144	-0.0671	-0.0820	0.147	-0.256	-0.168
Annual Total Lithium (mg/L)	-0.167	-0.580	0.439	0.110	-0.308	-0.713	0.498	0.267
Annual Total Manganese (mg/L)	-0.251	-0.217	-0.133	-0.117	-0.408	-0.245	-0.298	-0.203
Annual Total Molybdenum (mg/L)	-0.248	-0.552	0.373	0.300	-0.463	-0.706	0.521	0.129
Annual Total Nickel (µg/L)	-0.288	-0.510	0.0632	0.451	-0.510	-0.727	0.251	0.364
Annual Total Selenium (µg/L)	-0.174	-0.385	-0.0342	0.494	-0.210	-0.601	0.144	0.579
Annual Total Thallium (mg/L)	-0.0442	-0.378	-0.375	0.448	-0.194	-0.224	-0.319	0.383
Annual Total Uranium (mg/L)	-0.256	-0.490	0.0184	0.261	-0.287	-0.692	0.163	0.441
Annual Total Zinc (mg/L)	0.00786	-0.161	0.417	0.187	-0.219	-0.350	0.526	0.132

Bold P-value < 0.05/38 (0.05 Bonferroni Corrected for 38 independent comparisons).

Blue P-value < 0.05/38 and $r_s \leq -0.6$ or $r_s \geq 0.6$.

Table H.1: Spearman's Correlation Relationships between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, September 2018 to 2022

Parameter	Correlation Rho							
	Richness (# taxa)				Richness Residuals			
	Full	Upper	Middle	Lower	Full	Upper	Middle	Lower
Calcite Index	0.230	0.621	-0.398	-0.113	0.0704	0.680	-0.329	-0.0382
Calcite Presence	0.263	0.629	-0.403	-0.116	0.0952	0.670	-0.334	-0.0341
Concreted Score	0.0792	0.576	-0.0251	0.00357	0.0800	0.640	0.0217	0.0851
Embeddedness (%)	0.0141	-0.125	0.104	0.119	0.0615	-0.247	0.0697	0.114
D16	-0.0691	0.488	-0.339	-0.0115	0.0613	0.550	-0.259	0.110
D84	-0.288	0.124	0.238	-0.118	0.0207	0.147	0.402	0.0785
Water Velocity (m/s)	0.0530	-0.0459	0.0866	0.138	0.0950	-0.0559	0.0474	0.0815
Water Depth (cm)	-0.174	-0.127	0.00620	-0.365	-0.207	-0.144	0.0571	-0.388
Minimum Winter Temperature (°C)	-0.0266	-0.521	0.00225	0.344	-0.0296	-0.402	0.0992	0.366
Maximum Summer Temperature (°C)	-0.0339	-0.196	0.236	-0.125	0.00149	-0.137	0.269	-0.150
Annual PC1	0.0142	0.0549	0.0579	0.0633	-0.207	-0.0210	-0.0281	-0.0609
Annual PC2	-0.0135	0.0707	0.190	0.162	0.0533	0	0.167	0.251
Annual Temperature (°C)	0.00501	-0.110	-0.176	0.421	-0.117	-0.133	-0.174	0.373
Annual Total Alkalinity as CaCO3 (mg/L)	0.245	0.233	-0.0742	0.0353	-0.0629	0.112	-0.163	-0.0134
Annual Nitrate (mg/L as N)	0.212	0.152	0.260	0.0820	-0.0521	0.0490	0.284	0.0630
Annual Nitrite (mg/L s N)	0.0435	0.0141	0.323	0.353	-0.112	-0.0559	0.251	0.247
Annual Ammonia (mg/L as N)	-0.0115	-0.0106	0.0778	-0.0747	-0.130	-0.0559	0.0421	-0.0485
Annual Phosphorus (mg/L)	0.131	-0.0954	0.323	0.0540	-0.00877	-0.0420	0.311	0.0196
Annual Sulphate (mg/L)	0.112	0.184	0.115	0.195	-0.132	0.0699	0.0439	0.154
Annual Total Dissolved Solids (mg/L)	0.169	0.226	0.0778	0.279	-0.0841	0.119	0.0316	0.183
Annual Dissolved Aluminum (mg/L)	-0.0969	-0.251	-0.156	-0.238	-0.0502	-0.154	-0.0912	-0.323
Annual Total Antimony (mg/L)	-0.0429	0.113	-0.00972	-0.0343	-0.221	0.0140	-0.0877	-0.172
Annual Total Arsenic (mg/L)	0.0561	-0.148	0.0539	0.148	-0.0608	-0.133	0.0930	0.0857
Annual Total Barium (mg/L)	0.268	0.357	-0.152	-0.440	-0.00620	0.329	-0.0439	-0.311
Annual Dissolved Cadmium (µg/L)	0.124	0.0283	0.261	0.246	-0.0701	-0.0420	0.277	0.197
Annual Total Chromium (mg/L)	-0.0747	-0.117	-0.444	-0.121	-0.144	-0.112	-0.526	-0.234
Annual Total Cobalt (µg/L)	-0.0925	0.0247	0.110	-0.508	-0.249	-0.0280	0.0421	-0.573
Annual Total Copper (mg/L)	0.00979	-0.0353	-0.141	-0.293	-0.103	0.0769	-0.0351	-0.363
Annual Total Iron (mg/L)	0.0737	0.166	-0.127	-0.0519	-0.0717	0.210	-0.0789	-0.137
Annual Total Lead (mg/L)	-0.0202	0.145	-0.208	-0.284	-0.173	0.196	-0.163	-0.362
Annual Total Lithium (mg/L)	0.0900	-0.0389	0.345	0.127	-0.157	-0.154	0.312	0.100
Annual Total Manganese (mg/L)	-0.0935	0.0671	-0.161	-0.181	-0.244	0.0210	-0.144	-0.292
Annual Total Molybdenum (mg/L)	0.157	0.237	0.557	0.436	-0.0428	0.0979	0.442	0.362
Annual Total Nickel (µg/L)	-0.0147	0.0424	0.0442	0.235	-0.183	-0.00699	-0.0439	0.160
Annual Total Selenium (µg/L)	0.151	0.237	-0.0990	0.281	-0.116	0.154	-0.149	0.193
Annual Total Thallium (mg/L)	-0.122	-0.110	-0.371	0.0349	-0.202	-0.0699	-0.432	-0.0579
Annual Total Uranium (mg/L)	0.0761	0.219	0.0141	0.0706	-0.152	0.119	-0.0386	-0.00929
Annual Total Zinc (mg/L)	-0.0204	0.279	0.314	-0.0706	-0.0985	0.329	0.281	-0.189

Bold P-value < 0.05/38 (0.05 Bonferroni Corrected for 38 independent comparisons).

Blue P-value < 0.05/38 and rs ≤ -0.6 or rs ≥ 0.6.

Table H.1: Spearman's Correlation Relationships between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, September 2018 to 2022

Parameter	Correlation Rho							
	% Ephemeroptera				% Ephemeroptera Residuals			
	Full	Upper	Middle	Lower	Full	Upper	Middle	Lower
Calcite Index	-0.414	-0.504	0.294	0.0671	-0.422	-0.609	0.294	-0.143
Calcite Presence	-0.418	-0.547	0.299	0.0237	-0.421	-0.656	0.294	-0.104
Concreted Score	-0.162	-0.290	-0.120	0.277	-0.190	-0.360	-0.121	0.0454
Embeddedness (%)	0.173	-0.198	0.00706	-0.137	0.187	-0.216	-0.0221	-0.125
D16	0.387	-0.233	0.311	0.0849	0.356	-0.247	0.333	-0.268
D84	0.590	-0.165	-0.00702	0.291	0.543	-0.470	-0.0562	-0.0805
Water Velocity (m/s)	-0.158	-0.462	-0.0474	-0.0918	-0.169	-0.483	-0.0614	-0.0630
Water Depth (cm)	-0.353	-0.357	-0.0993	0.295	-0.336	-0.392	-0.0290	0.366
Minimum Winter Temperature (°C)	-0.356	0.219	0.161	-0.243	-0.372	0.0731	0.169	-0.316
Maximum Summer Temperature (°C)	0.284	0.126	0.0650	0.518	0.295	0.0666	-0.0351	0.688
Annual PC1	-0.465	-0.718	-0.741	-0.236	-0.460	-0.630	-0.713	-0.195
Annual PC2	-0.273	-0.336	-0.168	-0.0650	-0.282	-0.154	-0.177	-0.185
Annual Temperature (°C)	-0.142	-0.224	0.0386	-0.234	-0.138	-0.266	0.0211	-0.263
Annual Total Alkalinity as CaCO3 (mg/L)	-0.926	-0.867	-0.547	-0.521	-0.922	-0.748	-0.507	-0.620
Annual Nitrate (mg/L as N)	-0.855	-0.713	-0.718	-0.544	-0.847	-0.524	-0.704	-0.587
Annual Nitrite (mg/L s N)	-0.188	-0.483	-0.144	0.0237	-0.183	-0.350	-0.149	0.0815
Annual Ammonia (mg/L as N)	0.0447	0.0210	0.0316	-0.131	0.0559	0.0420	0.0316	-0.0547
Annual Phosphorus (mg/L)	-0.119	0.245	-0.332	-0.267	-0.101	0.112	-0.307	-0.137
Annual Sulphate (mg/L)	-0.758	-0.769	-0.633	-0.602	-0.747	-0.594	-0.588	-0.383
Annual Total Dissolved Solids (mg/L)	-0.807	-0.839	-0.605	-0.744	-0.797	-0.678	-0.574	-0.575
Annual Dissolved Aluminum (mg/L)	0.455	0.483	0.251	0.0909	0.447	0.224	0.198	0.107
Annual Total Antimony (mg/L)	-0.302	-0.741	-0.328	-0.0712	-0.303	-0.671	-0.314	-0.181
Annual Total Arsenic (mg/L)	-0.156	0.0769	-0.239	0.158	-0.149	0.0699	-0.200	0.218
Annual Total Barium (mg/L)	-0.785	-0.566	0.168	0.544	-0.783	-0.622	0.147	0.370
Annual Dissolved Cadmium (µg/L)	-0.487	-0.608	-0.772	-0.269	-0.490	-0.490	-0.833	-0.282
Annual Total Chromium (mg/L)	0.111	0.238	0.202	-0.0960	0.114	-0.0420	0.239	-0.00103
Annual Total Cobalt (µg/L)	-0.263	-0.469	-0.156	-0.0691	-0.274	-0.343	-0.151	-0.148
Annual Total Copper (mg/L)	0.00474	0.301	-0.109	0.119	0.0184	0.154	-0.0982	0.233
Annual Total Iron (mg/L)	-0.208	0.0699	0.146	-0.0506	-0.206	-0.0769	0.151	0.00516
Annual Total Lead (mg/L)	-0.129	0.161	0.0404	0.117	-0.113	0.0350	0.0649	0.249
Annual Total Lithium (mg/L)	-0.609	-0.720	-0.707	-0.571	-0.597	-0.573	-0.682	-0.556
Annual Total Manganese (mg/L)	-0.235	-0.378	0.261	-0.0361	-0.227	-0.357	0.277	0.117
Annual Total Molybdenum (mg/L)	-0.444	-0.790	-0.607	-0.269	-0.435	-0.678	-0.605	-0.179
Annual Total Nickel (µg/L)	-0.337	-0.727	-0.670	-0.112	-0.335	-0.580	-0.633	-0.150
Annual Total Selenium (µg/L)	-0.817	-0.776	-0.616	-0.573	-0.812	-0.608	-0.584	-0.482
Annual Total Thallium (mg/L)	0.0745	0.0909	-0.182	-0.170	0.0605	-0.147	-0.146	-0.117
Annual Total Uranium (mg/L)	-0.735	-0.811	-0.619	-0.633	-0.737	-0.657	-0.579	-0.610
Annual Total Zinc (mg/L)	-0.0777	-0.601	-0.642	-0.196	-0.0784	-0.552	-0.668	-0.0485

Bold P-value < 0.05/38 (0.05 Bonferroni Corrected for 38 independent comparisons).

Blue P-value < 0.05/38 and rs ≤ -0.6 or rs ≥ 0.6.

Table H.1: Spearman's Correlation Relationships between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, September 2018 to 2022

Parameter	Correlation Rho							
	% Plecoptera				% Trichoptera			
	Full	Upper	Middle	Lower	Full	Upper	Middle	Lower
Calcite Index	0.361	0.827	0.366	0.133	-0.0330	-0.0525	-0.213	-0.378
Calcite Presence	0.336	0.832	0.295	0.130	-0.0293	-0.0561	-0.239	-0.423
Concreted Score	0.148	0.521	0.728	-0.0922	0.0901	-0.00538	0.339	0.0199
Embeddedness (%)	-0.286	0.155	0.00265	-0.0730	0.213	0.590	0.295	0.159
D16	-0.421	0.381	-0.288	0.288	-0.269	-0.413	-0.199	-0.353
D84	-0.547	0.572	-0.341	0.139	-0.167	0.161	0.281	-0.127
Water Velocity (m/s)	0.119	0.587	-0.249	-0.108	0.0553	0.476	-0.326	0.0279
Water Depth (cm)	0.149	0.270	-0.546	-0.684	0.172	0.336	-0.297	0.538
Minimum Winter Temperature (°C)	0.324	-0.0877	-0.779	0.777	-0.122	0.0585	-0.266	-0.441
Maximum Summer Temperature (°C)	-0.550	0.193	-0.482	-0.521	0.0565	0.0595	0.146	0.449
Annual PC1	0.103	0.371	0.627	0.205	0.165	0.760	0.113	-0.104
Annual PC2	0.206	-0.0699	-0.165	0.311	-0.00281	0.252	0.0228	0.00103
Annual Temperature (°C)	-0.251	0.364	-0.721	0.389	-0.0441	0.448	-0.140	-0.294
Annual Total Alkalinity as CaCO3 (mg/L)	0.722	0.434	0.788	0.470	0.239	0.657	0.00526	0.00516
Annual Nitrate (mg/L as N)	0.539	0.280	-0.0351	0.447	0.220	0.671	0.400	-0.0423
Annual Nitrite (mg/L s N)	-0.166	-0.0280	0.151	-0.125	0.0680	0.503	0.156	0.0506
Annual Ammonia (mg/L as N)	-0.0109	-0.238	0.419	0.158	-0.0684	-0.0280	-0.0561	0.00929
Annual Phosphorus (mg/L)	0.0714	0.140	0.0263	-0.0134	0.146	-0.0420	0.374	-0.0114
Annual Sulphate (mg/L)	0.507	0.350	0.523	0.449	0.139	0.671	0.111	0.170
Annual Total Dissolved Solids (mg/L)	0.577	0.399	0.730	0.581	0.137	0.664	0.165	-0.166
Annual Dissolved Aluminum (mg/L)	-0.351	-0.140	0.0579	-0.240	-0.197	-0.434	-0.121	-0.134
Annual Total Antimony (mg/L)	0.00956	0.406	0.812	0.370	0.0670	0.769	0.0807	-0.389
Annual Total Arsenic (mg/L)	0.0881	-0.0350	0.365	0.00516	-0.0305	0.154	0.0579	-0.391
Annual Total Barium (mg/L)	0.596	0.678	-0.0930	-0.102	0.306	0.420	0.451	-0.282
Annual Dissolved Cadmium (µg/L)	0.0570	0.259	-0.0281	0.492	0.0934	0.706	0.307	-0.424
Annual Total Chromium (mg/L)	0.00982	0.231	0.137	-0.0155	-0.185	-0.0280	-0.274	-0.245
Annual Total Cobalt (µg/L)	0.0535	0.175	0.147	0.181	0.108	0.503	0.147	-0.203
Annual Total Copper (mg/L)	-0.0541	-0.0140	0.128	-0.333	-0.0409	-0.259	0.0526	0.0176
Annual Total Iron (mg/L)	0.152	0.392	0.153	-0.156	0.0705	-0.0140	0.123	-0.0960
Annual Total Lead (mg/L)	0.136	0.217	0.391	-0.383	0.0765	-0.147	-0.0105	0.129
Annual Total Lithium (mg/L)	0.153	0.273	-0.133	0.348	0.247	0.839	0.361	0.0547
Annual Total Manganese (mg/L)	-0.0649	0.294	-0.230	-0.509	0.155	0.301	-0.0789	0.257
Annual Total Molybdenum (mg/L)	0.0630	0.336	0.435	0.0361	0.201	0.692	0.347	0.292
Annual Total Nickel (µg/L)	0.00976	0.287	0.698	0.253	0.0816	0.727	0.0123	-0.261
Annual Total Selenium (µg/L)	0.649	0.357	0.809	0.579	0.104	0.629	0.0351	-0.181
Annual Total Thallium (mg/L)	-0.0444	0.455	0.679	0.306	-0.209	0.175	-0.261	-0.425
Annual Total Uranium (mg/L)	0.489	0.371	0.725	0.542	0.0903	0.636	0.121	-0.146
Annual Total Zinc (mg/L)	-0.152	0.573	0.221	-0.0971	0.112	0.378	0.428	0.00516

Bold P-value < 0.05/38 (0.05 Bonferroni Corrected for 38 independent comparisons).

Blue P-value < 0.05/38 and rs ≤ -0.6 or rs ≥ 0.6.

Table H.1: Spearman's Correlation Relationships between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, September 2018 to 2022

Parameter	Correlation Rho							
	% EPT				% EPT Residuals			
	Full	Upper	Middle	Lower	Full	Upper	Middle	Lower
Calcite Index	-0.140	-0.511	0.423	0.252	-0.140	-0.392	0.434	0.170
Calcite Presence	-0.143	-0.537	0.359	0.252	-0.141	-0.421	0.371	0.172
Concreted Score	-0.290	-0.360	0.535	0.00567	-0.286	-0.290	0.511	0.00142
Embeddedness (%)	-0.152	-0.0141	-0.103	0.0449	-0.128	0.113	-0.121	0.0428
D16	-0.0909	-0.342	-0.232	0.374	-0.0744	-0.332	-0.192	0.394
D84	0.0555	-0.0140	-0.149	0.382	0.0741	0.0246	-0.0948	0.422
Water Velocity (m/s)	-0.132	-0.441	-0.177	-0.176	-0.116	-0.364	-0.156	-0.143
Water Depth (cm)	-0.315	-0.179	-0.597	-0.491	-0.322	-0.144	-0.586	-0.522
Minimum Winter Temperature (°C)	0.128	0.205	-0.584	0.651	0.121	0.219	-0.509	0.650
Maximum Summer Temperature (°C)	-0.340	0.0140	-0.320	-0.346	-0.308	0.133	-0.309	-0.348
Annual PC1	-0.649	-0.522	0.135	-0.0795	-0.647	-0.445	0.0527	-0.0815
Annual PC2	-0.0607	-0.441	-0.233	0.478	-0.0831	-0.462	-0.254	0.486
Annual Temperature (°C)	-0.495	-0.196	-0.560	0.255	-0.464	-0.0629	-0.544	0.296
Annual Total Alkalinity as CaCO3 (mg/L)	-0.411	-0.783	0.344	0.265	-0.418	-0.748	0.251	0.288
Annual Nitrate (mg/L as N)	-0.417	-0.706	-0.325	0.187	-0.424	-0.657	-0.360	0.247
Annual Nitrite (mg/L s N)	-0.534	-0.294	0.174	-0.209	-0.523	-0.273	0.167	-0.212
Annual Ammonia (mg/L as N)	0.0248	0.231	0.451	0.166	0.0327	0.224	0.454	0.121
Annual Phosphorus (mg/L)	-0.0826	0.343	-0.256	-0.253	-0.0712	0.406	-0.267	-0.234
Annual Sulphate (mg/L)	-0.503	-0.741	-0.0333	0.315	-0.522	-0.692	-0.116	0.315
Annual Total Dissolved Solids (mg/L)	-0.464	-0.811	0.230	0.276	-0.484	-0.762	0.156	0.255
Annual Dissolved Aluminum (mg/L)	0.144	0.510	0.0649	-0.237	0.154	0.476	0.0947	-0.328
Annual Total Antimony (mg/L)	-0.588	-0.566	0.596	0.148	-0.586	-0.503	0.539	0.0712
Annual Total Arsenic (mg/L)	-0.211	0.175	0.184	-0.226	-0.204	0.203	0.175	-0.212
Annual Total Barium (mg/L)	-0.297	-0.455	0.298	0.0114	-0.290	-0.336	0.321	0.0671
Annual Dissolved Cadmium (µg/L)	-0.633	-0.545	-0.425	0.292	-0.626	-0.455	-0.453	0.261
Annual Total Chromium (mg/L)	0.0739	0.413	0.0702	-0.179	0.0868	0.476	0.0579	-0.201
Annual Total Cobalt (µg/L)	-0.350	-0.301	0.211	-0.0320	-0.353	-0.266	0.200	-0.0980
Annual Total Copper (mg/L)	-0.131	0.385	0.102	-0.493	-0.122	0.385	0.128	-0.498
Annual Total Iron (mg/L)	-0.212	0.175	0.246	-0.389	-0.202	0.266	0.268	-0.377
Annual Total Lead (mg/L)	-0.141	0.266	0.298	-0.474	-0.147	0.329	0.302	-0.496
Annual Total Lithium (mg/L)	-0.615	-0.629	-0.463	0.131	-0.610	-0.580	-0.507	0.172
Annual Total Manganese (mg/L)	-0.549	-0.224	0.154	-0.684	-0.540	-0.182	0.181	-0.682
Annual Total Molybdenum (mg/L)	-0.677	-0.664	-0.0175	-0.0547	-0.670	-0.643	-0.0860	-0.0279
Annual Total Nickel (µg/L)	-0.624	-0.608	0.189	0.0898	-0.621	-0.531	0.109	0.0650
Annual Total Selenium (µg/L)	-0.411	-0.776	0.293	0.253	-0.431	-0.727	0.218	0.282
Annual Total Thallium (mg/L)	-0.129	0.252	0.363	-0.0124	-0.122	0.357	0.318	-0.0372
Annual Total Uranium (mg/L)	-0.514	-0.776	0.226	0.238	-0.533	-0.741	0.139	0.236
Annual Total Zinc (mg/L)	-0.431	-0.552	-0.182	-0.242	-0.433	-0.469	-0.209	-0.296

Bold P-value < 0.05/38 (0.05 Bonferroni Corrected for 38 independent comparisons).

Blue P-value < 0.05/38 and rs ≤ -0.6 or rs ≥ 0.6.

Table H.1: Spearman's Correlation Relationships between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, September 2018 to 2022

Parameter	Correlation Rho							
	% Chironomidae				Ephemeroptera Abundance (#/3 min kick)			
	Full	Upper	Middle	Lower	Full	Upper	Middle	Lower
Calcite Index	0.268	0.683	0.424	0.0744	-0.358	-0.347	-0.154	-0.0537
Calcite Presence	0.283	0.702	0.441	-0.0320	-0.356	-0.382	-0.142	0.00413
Concreted Score	0.0503	0.371	0.218	0.491	-0.214	-0.301	-0.256	-0.0113
Embeddedness (%)	-0.137	-0.382	-0.0909	0.600	0.111	-0.530	0.185	-0.206
D16	0.0613	0.325	0.165	0.305	0.237	-0.0741	-0.0862	-0.0238
D84	-0.0175	0.326	0.220	0.528	0.418	-0.358	0.364	-0.116
Water Velocity (m/s)	0.361	0.147	0.0333	0.653	-0.0884	-0.329	0.526	-0.0485
Water Depth (cm)	0.0672	-0.0350	0.251	-0.210	-0.467	-0.382	0.141	-0.243
Minimum Winter Temperature (°C)	0.236	-0.212	0.226	0.222	-0.257	0.0365	0.405	0.215
Maximum Summer Temperature (°C)	-0.304	-0.196	0.0211	-0.0952	0.242	-0.0280	0.241	0.196
Annual PC1	-0.327	-0.0806	-0.111	0.129	-0.439	-0.785	-0.151	-0.0836
Annual PC2	0.116	-0.336	0.374	0.224	-0.325	-0.224	0.0912	-0.0650
Annual Temperature (°C)	-0.380	-0.462	-0.325	0.379	-0.160	-0.559	0.0772	0.139
Annual Total Alkalinity as CaCO3 (mg/L)	0.0725	-0.0769	0.0860	0.325	-0.844	-0.776	-0.402	-0.451
Annual Nitrate (mg/L as N)	0.00637	-0.189	0.0368	0.205	-0.712	-0.601	0.0702	-0.370
Annual Nitrite (mg/L s N)	-0.366	-0.196	-0.267	-0.00722	-0.173	-0.601	0.307	0.141
Annual Ammonia (mg/L as N)	-0.179	0	-0.170	-0.377	0.0359	-0.119	0.0719	-0.152
Annual Phosphorus (mg/L)	-0.0976	0.224	-0.114	-0.160	-0.0314	0.0979	-0.00526	-0.0506
Annual Sulphate (mg/L)	-0.144	-0.175	0.237	0.158	-0.704	-0.664	-0.274	-0.263
Annual Total Dissolved Solids (mg/L)	-0.0618	-0.0979	0.244	0.203	-0.721	-0.713	-0.270	-0.249
Annual Dissolved Aluminum (mg/L)	-0.0338	0.252	0.395	-0.345	0.476	0.392	0.0807	0.114
Annual Total Antimony (mg/L)	-0.393	-0.154	-0.0965	-0.0960	-0.347	-0.853	-0.256	0.110
Annual Total Arsenic (mg/L)	-0.108	0.119	-0.177	0.0568	-0.0403	0.0140	0.0474	0.461
Annual Total Barium (mg/L)	0.0557	0.189	-0.493	-0.216	-0.693	-0.622	-0.304	0.179
Annual Dissolved Cadmium (µg/L)	-0.333	-0.343	0.0737	0.267	-0.360	-0.755	0.228	0.201
Annual Total Chromium (mg/L)	-0.0118	0.182	-0.504	-0.148	0.0698	-0.0699	-0.300	-0.00103
Annual Total Cobalt (µg/L)	-0.228	-0.00699	-0.498	0.191	-0.260	-0.462	0.00877	-0.286
Annual Total Copper (mg/L)	-0.0859	0.378	-0.207	-0.277	0.0634	0.224	-0.0175	-0.00934
Annual Total Iron (mg/L)	-0.0835	0.357	-0.382	-0.0857	-0.184	-0.0559	-0.116	-0.0217
Annual Total Lead (mg/L)	-0.0566	0.392	-0.205	-0.238	-0.117	0.0699	-0.174	-0.0155
Annual Total Lithium (mg/L)	-0.291	-0.322	-0.0965	0.315	-0.556	-0.734	0.0526	-0.397
Annual Total Manganese (mg/L)	-0.374	0.217	-0.516	-0.278	-0.298	-0.336	-0.0789	-0.170
Annual Total Molybdenum (mg/L)	-0.286	-0.0420	0.0368	0.370	-0.416	-0.734	0.0526	-0.00929
Annual Total Nickel (µg/L)	-0.349	-0.189	0.0614	0.232	-0.346	-0.776	-0.244	0.226
Annual Total Selenium (µg/L)	-0.0622	-0.0629	0.121	0.0836	-0.738	-0.636	-0.326	-0.104
Annual Total Thallium (mg/L)	-0.230	0.0559	-0.0789	-0.0952	0.0592	-0.245	-0.474	0.187
Annual Total Uranium (mg/L)	-0.137	-0.119	0.179	0.335	-0.708	-0.699	-0.423	-0.356
Annual Total Zinc (mg/L)	-0.273	0.378	-0.163	-0.0888	0.0169	-0.448	0.135	-0.0795

Bold P-value < 0.05/38 (0.05 Bonferroni Corrected for 38 independent comparisons).

Blue P-value < 0.05/38 and rs ≤ -0.6 or rs ≥ 0.6.

Table H.1: Spearman's Correlation Relationships between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, September 2018 to 2022

Parameter	Correlation Rho							
	Ephemeroptera Abundance Residuals				Plecoptera Abundance (#/3 min Kick)			
	Full	Upper	Middle	Lower	Full	Upper	Middle	Lower
Calcite Index	-0.352	-0.340	-0.312	0.0548	0.292	0.403	0.101	-0.0795
Calcite Presence	-0.333	-0.375	-0.333	0.107	0.295	0.404	0.0553	-0.0237
Concreted Score	-0.347	-0.301	-0.148	-0.106	-0.0442	0.0753	0.522	-0.296
Embeddedness (%)	0.0148	-0.502	0.229	-0.0647	-0.368	-0.643	0.178	-0.112
D16	0.0152	-0.138	-0.472	0.244	-0.427	0.646	-0.386	0.146
D84	0.149	-0.288	0.146	0.0712	-0.638	0.0175	-0.140	-0.138
Water Velocity (m/s)	0.0931	-0.336	0.470	0.366	0.0893	0.133	-0.0509	0.0898
Water Depth (cm)	-0.353	-0.361	-0.0703	-0.226	-0.0619	-0.0911	-0.384	-0.758
Minimum Winter Temperature (°C)	-0.174	0.00731	-0.0179	-0.117	0.249	-0.0438	-0.563	0.792
Maximum Summer Temperature (°C)	-0.0159	-0.0911	0.127	-0.434	-0.519	0.102	-0.258	-0.442
Annual PC1	-0.564	-0.767	0.139	0.121	-0.111	-0.480	0.645	0.404
Annual PC2	-0.248	-0.301	0.161	-0.0939	0.00222	-0.217	0.0202	0.106
Annual Temperature (°C)	-0.392	-0.615	-0.0684	0.156	-0.393	-0.231	-0.590	0.503
Annual Total Alkalinity as CaCO3 (mg/L)	-0.636	-0.804	-0.0702	0.265	0.529	-0.336	0.659	0.430
Annual Nitrate (mg/L as N)	-0.533	-0.643	0.165	0.288	0.390	-0.399	0.205	0.418
Annual Nitrite (mg/L s N)	-0.375	-0.580	0.402	-0.0815	-0.326	-0.615	0.265	0.110
Annual Ammonia (mg/L as N)	-0.0587	-0.0559	0.125	-0.0691	-0.0616	-0.294	0.293	0.0114
Annual Phosphorus (mg/L)	-0.0155	0.168	0.0509	-0.0980	0.178	0.0629	0.149	0.125
Annual Sulphate (mg/L)	-0.627	-0.706	0.00877	-0.207	0.280	-0.350	0.562	0.443
Annual Total Dissolved Solids (mg/L)	-0.604	-0.755	0.0175	0.117	0.357	-0.350	0.682	0.614
Annual Dissolved Aluminum (mg/L)	0.418	0.434	0	0.120	-0.119	0.231	0.00790	-0.109
Annual Total Antimony (mg/L)	-0.556	-0.846	0.0825	0.162	-0.262	-0.503	0.599	0.422
Annual Total Arsenic (mg/L)	-0.111	0.0769	0.0719	0.185	0.0786	-0.196	0.250	0.304
Annual Total Barium (mg/L)	-0.527	-0.608	-0.346	0.282	0.431	-0.0629	-0.261	-0.255
Annual Dissolved Cadmium (µg/L)	-0.508	-0.797	0.302	0.214	-0.0694	-0.552	0.267	0.662
Annual Total Chromium (mg/L)	0.0776	0.00699	-0.302	0.139	0.0265	0.0210	-0.0711	0.0918
Annual Total Cobalt (µg/L)	-0.325	-0.427	0.0895	0.271	-0.0843	-0.308	0.136	0.0815
Annual Total Copper (mg/L)	0.0391	0.294	-0.121	0.0934	0.0315	0.182	-0.0149	-0.223
Annual Total Iron (mg/L)	-0.196	0.0140	-0.221	0.0444	0.115	0.168	-0.0544	-0.00516
Annual Total Lead (mg/L)	-0.0994	0.147	-0.233	0.0691	0.121	0.154	0.0992	-0.185
Annual Total Lithium (mg/L)	-0.545	-0.762	0.209	0.197	0.000175	-0.531	0.152	0.346
Annual Total Manganese (mg/L)	-0.404	-0.287	-0.174	0.00929	-0.196	-0.105	-0.354	-0.309
Annual Total Molybdenum (mg/L)	-0.578	-0.727	0.430	-0.228	-0.133	-0.483	0.671	0.195
Annual Total Nickel (µg/L)	-0.540	-0.797	0.118	0.0877	-0.237	-0.503	0.634	0.412
Annual Total Selenium (µg/L)	-0.611	-0.678	-0.0333	0.133	0.407	-0.336	0.662	0.699
Annual Total Thallium (mg/L)	-0.112	-0.189	-0.342	0.211	-0.115	0.0699	0.356	0.489
Annual Total Uranium (mg/L)	-0.612	-0.741	-0.137	0.238	0.239	-0.322	0.634	0.531
Annual Total Zinc (mg/L)	-0.147	-0.441	0.396	0.183	-0.171	0.0839	0.431	0.152

Bold P-value < 0.05/38 (0.05 Bonferroni Corrected for 38 independent comparisons).

Blue P-value < 0.05/38 and rs ≤ -0.6 or rs ≥ 0.6.

Table H.1: Spearman's Correlation Relationships between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, September 2018 to 2022

Parameter	Correlation Rho							
	Trichoptera Abundance (#/3 min kick)				EPT Abundance (#/3 min kick)			
	Full	Upper	Middle	Lower	Full	Upper	Middle	Lower
Calcite Index	-0.0201	-0.266	-0.274	-0.403	-0.0477	-0.268	-0.0737	-0.0661
Calcite Presence	0.00595	-0.305	-0.308	-0.395	-0.0272	-0.309	-0.125	-0.0145
Concreted Score	-0.123	-0.124	0.197	-0.261	-0.291	-0.267	0.291	-0.248
Embeddedness (%)	0.0272	0.283	0.335	-0.105	-0.232	-0.501	0.192	-0.199
D16	-0.308	-0.554	-0.281	-0.241	-0.169	-0.0813	-0.296	0.176
D84	-0.339	-0.193	0.384	-0.424	-0.233	-0.373	0.0781	-0.128
Water Velocity (m/s)	-0.0156	0.420	-0.00967	-0.0361	-0.0813	-0.266	0.167	0.0175
Water Depth (cm)	-0.100	-0.0315	0.0330	-0.0300	-0.408	-0.379	-0.152	-0.699
Minimum Winter Temperature (°C)	-0.0000595	0.0292	-0.0681	0.0860	0.140	-0.00366	-0.180	0.759
Maximum Summer Temperature (°C)	-0.0639	0.119	0.240	0.0394	-0.264	0.0105	0.00879	-0.381
Annual PC1	-0.00124	0.371	0.188	0.0465	-0.471	-0.751	0.329	0.309
Annual PC2	-0.0935	0.287	0.210	0.142	-0.250	-0.256	-0.00175	0.123
Annual Temperature (°C)	-0.124	0.112	-0.182	0.0289	-0.387	-0.550	-0.365	0.465
Annual Total Alkalinity as CaCO3 (mg/L)	0.153	0.322	-0.00440	0.213	-0.236	-0.774	0.181	0.267
Annual Nitrate (mg/L as N)	0.209	0.559	0.540	0.239	-0.163	-0.578	0.298	0.292
Annual Nitrite (mg/L s N)	-0.0793	0.112	0.225	0.347	-0.396	-0.595	0.279	0.174
Annual Ammonia (mg/L as N)	-0.0936	-0.308	-0.120	0.132	-0.0478	-0.119	0.154	0.00722
Annual Phosphorus (mg/L)	0.269	-0.0769	0.419	0.152	0.172	0.161	0.298	0.125
Annual Sulphate (mg/L)	0.0441	0.483	0.226	0.459	-0.342	-0.644	0.256	0.325
Annual Total Dissolved Solids (mg/L)	0.0859	0.441	0.199	0.347	-0.283	-0.694	0.284	0.474
Annual Dissolved Aluminum (mg/L)	-0.0270	-0.385	-0.0651	-0.0940	0.249	0.350	-0.0193	-0.0805
Annual Total Antimony (mg/L)	-0.125	0.336	-0.0431	-0.0454	-0.538	-0.841	0.153	0.383
Annual Total Arsenic (mg/L)	0.0569	0.168	0.111	-0.224	0.0310	0.0736	0.270	0.354
Annual Total Barium (mg/L)	0.188	0.0839	-0.00264	-0.658	-0.142	-0.581	-0.174	-0.174
Annual Dissolved Cadmium (µg/L)	0.0522	0.406	0.514	0.0485	-0.355	-0.739	0.344	0.608
Annual Total Chromium (mg/L)	-0.136	-0.245	-0.550	-0.268	0.125	-0.0630	-0.256	0.0547
Annual Total Cobalt (µg/L)	-0.0588	0.252	0.0114	-0.399	-0.320	-0.410	0.0930	-0.0402
Annual Total Copper (mg/L)	0.0181	-0.245	-0.0369	-0.204	0.0912	0.242	0.0632	-0.227
Annual Total Iron (mg/L)	0.0516	-0.119	-0.107	-0.105	-0.0346	0.0140	-0.0123	0.00103
Annual Total Lead (mg/L)	0.0680	-0.210	-0.178	-0.162	0.0215	0.133	0.0316	-0.238
Annual Total Lithium (mg/L)	0.139	0.594	0.516	0.251	-0.391	-0.725	0.242	0.201
Annual Total Manganese (mg/L)	-0.0512	0.0629	-0.265	0.0692	-0.455	-0.273	-0.260	-0.307
Annual Total Molybdenum (mg/L)	0.0357	0.406	0.553	0.504	-0.485	-0.732	0.512	0.172
Annual Total Nickel (µg/L)	-0.0745	0.378	0.0756	0.0836	-0.507	-0.746	0.198	0.404
Annual Total Selenium (µg/L)	0.0452	0.497	0.0105	0.371	-0.248	-0.613	0.188	0.600
Annual Total Thallium (mg/L)	-0.166	-0.133	-0.513	-0.111	-0.0594	-0.210	-0.172	0.451
Annual Total Uranium (mg/L)	-0.0210	0.399	0.114	0.205	-0.375	-0.694	0.223	0.381
Annual Total Zinc (mg/L)	0.0931	0.238	0.527	0.00103	-0.183	-0.371	0.482	0.0372

Bold P-value < 0.05/38 (0.05 Bonferroni Corrected for 38 independent comparisons).

Blue P-value < 0.05/38 and rs ≤ -0.6 or rs ≥ 0.6.

Table H.1: Spearman's Correlation Relationships between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, September 2018 to 2022

Parameter	Correlation Rho							
	EPT Abundance Residuals				Chironomidae Abundance (#/3 min kick)			
	Full	Upper	Middle	Lower	Full	Upper	Middle	Lower
Calcite Index	-0.170	-0.298	-0.225	0.0434	0.168	0.581	0.257	-0.113
Calcite Presence	-0.136	-0.333	-0.283	0.0888	0.192	0.596	0.263	-0.149
Concreted Score	-0.413	-0.301	0.167	-0.207	-0.0715	0.312	0.174	0.197
Embeddedness (%)	-0.253	-0.544	0.253	-0.167	-0.126	-0.505	0.0340	0.435
D16	-0.281	-0.138	-0.545	0.303	-0.00473	0.392	0.112	0.156
D84	-0.269	-0.242	0.0219	-0.00826	-0.138	0.228	0.224	0.115
Water Velocity (m/s)	0.0120	-0.231	0.218	0.146	0.255	0.0280	0.175	0.583
Water Depth (cm)	-0.335	-0.385	-0.174	-0.710	-0.162	-0.147	0.327	-0.578
Minimum Winter Temperature (°C)	0.125	0.0438	-0.360	0.668	0.173	-0.124	0.191	0.520
Maximum Summer Temperature (°C)	-0.373	-0.0105	0.0211	-0.642	-0.276	-0.109	0.0580	-0.239
Annual PC1	-0.589	-0.788	0.424	0.245	-0.380	-0.315	-0.0303	0.271
Annual PC2	-0.139	-0.385	0.139	0.216	-0.0873	-0.322	0.293	0.123
Annual Temperature (°C)	-0.520	-0.594	-0.282	0.538	-0.385	-0.476	-0.283	0.509
Annual Total Alkalinity as CaCO3 (mg/L)	-0.222	-0.846	0.289	0.505	-0.0355	-0.252	0.0369	0.309
Annual Nitrate (mg/L as N)	-0.204	-0.692	0.316	0.496	-0.0868	-0.336	0.142	0.261
Annual Nitrite (mg/L s N)	-0.545	-0.636	0.240	0.0258	-0.400	-0.364	-0.138	0.0857
Annual Ammonia (mg/L as N)	-0.106	-0.105	0.0404	0.0671	-0.169	-0.0769	-0.126	-0.430
Annual Phosphorus (mg/L)	0.0985	0.273	0.207	-0.0155	0.0504	0.175	-0.00966	-0.0444
Annual Sulphate (mg/L)	-0.359	-0.748	0.365	0.292	-0.250	-0.329	0.227	0.311
Annual Total Dissolved Solids (mg/L)	-0.302	-0.790	0.363	0.573	-0.170	-0.259	0.191	0.463
Annual Dissolved Aluminum (mg/L)	0.228	0.469	0.00877	-0.0558	0.117	0.357	0.218	-0.199
Annual Total Antimony (mg/L)	-0.677	-0.867	0.263	0.432	-0.477	-0.371	-0.129	0.0815
Annual Total Arsenic (mg/L)	-0.0576	0.161	0.186	0.181	-0.0159	0.0280	0.00527	0.288
Annual Total Barium (mg/L)	-0.220	-0.636	-0.256	-0.152	-0.0376	0.0210	-0.487	-0.426
Annual Dissolved Cadmium (µg/L)	-0.495	-0.825	0.418	0.579	-0.318	-0.476	0.140	0.564
Annual Total Chromium (mg/L)	0.0730	0.0839	-0.275	-0.0114	0.0211	0.147	-0.450	-0.0423
Annual Total Cobalt (µg/L)	-0.380	-0.406	0.0474	0.0960	-0.278	-0.203	-0.365	0.0196
Annual Total Copper (mg/L)	-0.0116	0.343	-0.0386	-0.317	-0.0119	0.357	-0.136	-0.266
Annual Total Iron (mg/L)	-0.137	0.0909	-0.195	-0.139	-0.0523	0.266	-0.299	-0.0588
Annual Total Lead (mg/L)	-0.0734	0.210	-0.140	-0.280	-0.0000585	0.322	-0.132	-0.195
Annual Total Lithium (mg/L)	-0.451	-0.790	0.323	0.364	-0.340	-0.497	0.0378	0.342
Annual Total Manganese (mg/L)	-0.489	-0.210	-0.293	-0.404	-0.397	0.0559	-0.443	-0.309
Annual Total Molybdenum (mg/L)	-0.603	-0.783	0.647	0.0547	-0.341	-0.252	0.106	0.503
Annual Total Nickel (µg/L)	-0.650	-0.825	0.391	0.325	-0.422	-0.378	0.0615	0.428
Annual Total Selenium (µg/L)	-0.274	-0.720	0.309	0.647	-0.162	-0.217	0.0825	0.389
Annual Total Thallium (mg/L)	-0.209	-0.0909	-0.160	0.353	-0.177	-0.0140	-0.169	0.247
Annual Total Uranium (mg/L)	-0.379	-0.790	0.288	0.552	-0.258	-0.273	0.145	0.422
Annual Total Zinc (mg/L)	-0.338	-0.399	0.579	0.0392	-0.222	0.196	-0.0623	0.0764

Bold P-value < 0.05/38 (0.05 Bonferroni Corrected for 38 independent comparisons).

Blue P-value < 0.05/38 and rs ≤ -0.6 or rs ≥ 0.6.

Table H.1: Spearman's Correlation Relationships between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, September 2018 to 2022

Parameter	Correlation Rho							
	Autotrophic Heterotrophic Index				Shredder Index			
	Full	Upper	Middle	Lower	Full	Upper	Middle	Lower
Calcite Index	-0.174	-0.651	0.477	-0.132	0.315	-0.154	0.570	0.243
Calcite Presence	-0.142	-0.656	0.533	-0.102	0.328	-0.179	0.522	0.361
Concreted Score	-0.232	-0.500	0.123	-0.111	-0.194	-0.231	0.556	-0.360
Embeddedness (%)	0.0125	0.0601	0.00441	-0.227	-0.471	-0.279	-0.133	-0.417
D16	-0.00351	-0.293	0.265	-0.497	-0.394	-0.374	-0.303	-0.161
D84	0.197	-0.330	0.205	-0.444	-0.359	0.309	-0.352	-0.361
Water Velocity (m/s)	-0.140	-0.322	-0.377	-0.255	-0.126	0	-0.188	-0.690
Water Depth (cm)	0.117	-0.133	-0.0439	0.623	-0.0740	-0.112	-0.719	-0.0207
Minimum Winter Temperature (°C)	-0.129	0.585	0.210	-0.681	0.299	0.409	-0.598	0.215
Maximum Summer Temperature (°C)	0.166	0.361	0.128	0.545	-0.454	0.0490	-0.381	0.0259
Annual PC1	-0.448	-0.413	-0.590	-0.0753	-0.361	-0.680	0.400	-0.135
Annual PC2	-0.168	0.0629	-0.0614	-0.463	-0.120	-0.378	-0.298	-0.137
Annual Temperature (°C)	-0.308	0.133	-0.0439	-0.527	-0.581	-0.469	-0.670	-0.197
Annual Total Alkalinity as CaCO3 (mg/L)	-0.545	-0.455	-0.474	-0.531	0.118	-0.657	0.521	-0.492
Annual Nitrate (mg/L as N)	-0.468	-0.301	-0.481	-0.461	0.00695	-0.594	-0.396	-0.379
Annual Nitrite (mg/L s N)	-0.318	-0.231	-0.533	0.139	-0.449	-0.699	0.137	0.00516
Annual Ammonia (mg/L as N)	-0.131	-0.0629	-0.270	0.117	0.00105	-0.266	0.461	0.300
Annual Phosphorus (mg/L)	-0.0216	-0.105	-0.0404	0.255	0.0719	0.238	-0.0561	0.148
Annual Sulphate (mg/L)	-0.467	-0.364	-0.249	-0.329	-0.0739	-0.657	0.254	-0.127
Annual Total Dissolved Solids (mg/L)	-0.498	-0.406	-0.314	-0.463	0.00660	-0.650	0.440	-0.0733
Annual Dissolved Aluminum (mg/L)	0.350	0.385	0.504	0.263	0.176	0.811	0.353	0.390
Annual Total Antimony (mg/L)	-0.417	-0.441	-0.468	-0.146	-0.429	-0.734	0.642	0.0650
Annual Total Arsenic (mg/L)	-0.178	-0.126	-0.200	0.102	0.0223	0.0699	0.274	0.0712
Annual Total Barium (mg/L)	-0.333	-0.497	0.105	0.104	0.231	-0.406	-0.121	0.158
Annual Dissolved Cadmium (µg/L)	-0.534	-0.133	-0.421	-0.434	-0.403	-0.748	-0.111	-0.127
Annual Total Chromium (mg/L)	0.117	0.0210	-0.0140	0.160	0.221	0.336	0.160	0.271
Annual Total Cobalt (µg/L)	-0.405	-0.441	-0.456	-0.0444	-0.267	-0.573	0.126	-0.243
Annual Total Copper (mg/L)	0.0993	-0.0559	-0.0316	0.516	0.169	0.294	0.214	0.162
Annual Total Iron (mg/L)	-0.0906	-0.350	0.0421	0.340	0.112	0.0559	0.254	0.0671
Annual Total Lead (mg/L)	0.0164	-0.280	0.0281	0.474	0.171	0.119	0.430	0.160
Annual Total Lithium (mg/L)	-0.506	-0.238	-0.547	-0.389	-0.414	-0.622	-0.458	-0.445
Annual Total Manganese (mg/L)	-0.151	-0.455	-0.0298	0.651	-0.251	-0.259	-0.0526	0.0464
Annual Total Molybdenum (mg/L)	-0.456	-0.497	-0.523	-0.117	-0.446	-0.587	0.233	-0.461
Annual Total Nickel (µg/L)	-0.389	-0.294	-0.444	-0.181	-0.454	-0.790	0.453	-0.259
Annual Total Selenium (µg/L)	-0.496	-0.378	-0.323	-0.459	0.0833	-0.608	0.575	-0.0506
Annual Total Thallium (mg/L)	-0.142	-0.133	-0.0930	-0.0497	-0.0890	0.0699	0.618	0.213
Annual Total Uranium (mg/L)	-0.516	-0.392	-0.311	-0.509	-0.138	-0.664	0.435	-0.360
Annual Total Zinc (mg/L)	-0.231	-0.587	-0.395	0.204	-0.317	-0.427	0.125	0.0258

Bold P-value < 0.05/38 (0.05 Bonferroni Corrected for 38 independent comparisons).

Blue P-value < 0.05/38 and rs ≤ -0.6 or rs ≥ 0.6.

Table H.1: Spearman's Correlation Relationships between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, September 2018 to 2022

Parameter	Correlation Rho							
	Filtering Collector Index				Hyporheic Benthic Index			
	Full	Upper	Middle	Lower	Full	Upper	Middle	Lower
Calcite Index	0.0757	0.357	0.168	0.0496	-0.0794	-0.0876	-0.642	-0.282
Calcite Presence	0.0763	0.414	0.168	0.0888	-0.110	-0.0842	-0.585	-0.379
Concreted Score	0.0609	-0.0753	0.256	-0.0652	0.255	0.113	-0.746	0.00993
Embeddedness (%)	-0.0933	-0.0212	0.000883	-0.0876	0.353	0.541	0.0124	-0.207
D16	-0.0750	0.0988	-0.0809	0.0611	0.284	-0.169	-0.00616	-0.0766
D84	-0.0482	0.116	0.264	0.0599	0.264	-0.102	0.134	0.0403
Water Velocity (m/s)	-0.0707	0.336	-0.204	-0.284	-0.123	0.252	0.211	-0.0155
Water Depth (cm)	0.212	0.0841	0.298	0.294	-0.0730	0.172	0.470	0.493
Minimum Winter Temperature (°C)	-0.0279	0.285	0.0563	-0.429	-0.349	0.0438	0.580	-0.335
Maximum Summer Temperature (°C)	0.00442	0.431	-0.0246	0.249	0.575	0.147	0.366	0.135
Annual PC1	-0.00815	-0.161	0.219	-0.154	0.627	0.753	-0.0781	-0.245
Annual PC2	-0.0734	-0.168	0.218	-0.354	-0.0888	0.517	0.128	0.311
Annual Temperature (°C)	-0.258	0.126	-0.291	-0.383	0.706	0.594	0.774	-0.176
Annual Total Alkalinity as CaCO3 (mg/L)	0.129	-0.0280	0.188	-0.482	-0.00450	0.755	-0.393	0.257
Annual Nitrate (mg/L as N)	0.000234	-0.140	0.212	-0.389	0.0347	0.804	0.379	0.0836
Annual Nitrite (mg/L s N)	-0.235	-0.154	-0.395	-0.0237	0.649	0.601	0.00877	-0.0568
Annual Ammonia (mg/L as N)	-0.331	-0.0909	-0.311	-0.300	0.210	-0.0559	-0.393	0.271
Annual Phosphorus (mg/L)	0.149	0.217	0.305	0.0568	0.0494	-0.308	0.256	-0.393
Annual Sulphate (mg/L)	0.0816	-0.105	0.500	-0.649	0.248	0.797	-0.123	0.0485
Annual Total Dissolved Solids (mg/L)	0.0802	0	0.421	-0.711	0.156	0.797	-0.381	-0.226
Annual Dissolved Aluminum (mg/L)	0.177	0.329	0.304	0.410	0.0454	-0.615	-0.228	-0.129
Annual Total Antimony (mg/L)	-0.110	-0.182	-0.105	-0.271	0.703	0.811	-0.561	-0.00516
Annual Total Arsenic (mg/L)	0.153	0.147	0.195	0.0547	0.158	-0.0559	-0.189	-0.571
Annual Total Barium (mg/L)	0.0618	-0.147	-0.396	0.449	-0.0922	0.399	0.0298	-0.0526
Annual Dissolved Cadmium (µg/L)	-0.0701	-0.0699	0.263	-0.356	0.638	0.916	0.470	-0.441
Annual Total Chromium (mg/L)	0.00240	0.210	-0.349	0.166	-0.0769	-0.280	-0.0175	-0.434
Annual Total Cobalt (µg/L)	-0.113	-0.112	-0.444	-0.294	0.427	0.420	0.0456	-0.0464
Annual Total Copper (mg/L)	0.158	-0.0629	0.0596	0.384	0.0794	-0.427	-0.00702	-0.313
Annual Total Iron (mg/L)	0.110	0.0140	-0.246	0.191	0.0749	-0.238	-0.144	-0.412
Annual Total Lead (mg/L)	0.134	0.0420	-0.0807	0.432	0.0225	-0.357	-0.346	-0.172
Annual Total Lithium (mg/L)	-0.0733	-0.133	0.119	-0.397	0.519	0.909	0.561	-0.0134
Annual Total Manganese (mg/L)	0.195	0.287	-0.428	0.375	0.487	0.105	0.181	-0.117
Annual Total Molybdenum (mg/L)	-0.0539	-0.210	0.254	-0.342	0.648	0.734	0.0298	0.0691
Annual Total Nickel (µg/L)	-0.0289	-0.0909	0.339	-0.278	0.685	0.860	-0.251	-0.259
Annual Total Selenium (µg/L)	0.0592	-0.105	0.374	-0.519	0.0944	0.783	-0.416	-0.0980
Annual Total Thallium (mg/L)	-0.0194	0.105	-0.00351	-0.0662	0.343	-0.0769	-0.475	-0.529
Annual Total Uranium (mg/L)	0.0621	-0.112	0.395	-0.647	0.276	0.783	-0.351	-0.0568
Annual Total Zinc (mg/L)	0.0355	-0.0350	0.189	0.0919	0.550	0.336	0.302	-0.221

Bold P-value < 0.05/38 (0.05 Bonferroni Corrected for 38 independent comparisons).

Blue P-value < 0.05/38 and rs ≤ -0.6 or rs ≥ 0.6.

Table H.1: Spearman's Correlation Relationships between Benthic Invertebrate Community Metrics and Physical and Chemical Parameters, Fording River, September 2018 to 2022

Parameter	Correlation Rho			
	Predator Index			
	Full	Upper	Middle	Lower
Calcite Index	0.396	0.0806	0.355	-0.140
Calcite Presence	0.390	0.0140	0.340	-0.195
Concreted Score	0.115	0.0269	0.489	-0.0426
Embeddedness (%)	-0.210	0.00353	0.00706	0.178
D16	-0.261	-0.434	-0.369	0.341
D84	-0.420	0.239	-0.394	0.378
Water Velocity (m/s)	0.116	0.413	-0.384	0.278
Water Depth (cm)	0.0914	0.305	-0.551	-0.169
Minimum Winter Temperature (°C)	0.139	0.0511	-0.768	0.0569
Maximum Summer Temperature (°C)	-0.301	-0.231	-0.387	-0.225
Annual PC1	0.175	0.123	0.435	0.207
Annual PC2	0.150	0.0629	-0.0474	0.350
Annual Temperature (°C)	-0.121	-0.287	-0.481	0.214
Annual Total Alkalinity as CaCO3 (mg/L)	0.605	0.161	0.681	0.792
Annual Nitrate (mg/L as N)	0.464	0.252	-0.158	0.688
Annual Nitrite (mg/L s N)	-0.0489	-0.0839	0	0.0712
Annual Ammonia (mg/L as N)	0.0553	-0.266	0.189	0.0753
Annual Phosphorus (mg/L)	0.0557	-0.00699	-0.105	-0.154
Annual Sulphate (mg/L)	0.399	0.196	0.523	0.370
Annual Total Dissolved Solids (mg/L)	0.445	0.196	0.591	0.337
Annual Dissolved Aluminum (mg/L)	-0.239	0.00699	0.121	-0.405
Annual Total Antimony (mg/L)	0.0663	0.0490	0.658	0.0898
Annual Total Arsenic (mg/L)	-0.00999	0.0909	0.111	-0.377
Annual Total Barium (mg/L)	0.500	0.133	0.0228	-0.0691
Annual Dissolved Cadmium (µg/L)	0.0588	-0.0979	-0.130	0.203
Annual Total Chromium (mg/L)	-0.0290	-0.217	0.149	-0.251
Annual Total Cobalt (µg/L)	0.0656	0.0909	0.0175	0.195
Annual Total Copper (mg/L)	0.0319	-0.0629	0.00877	-0.257
Annual Total Iron (mg/L)	0.0995	-0.0280	0.0333	-0.191
Annual Total Lead (mg/L)	0.0880	-0.0629	0.251	-0.321
Annual Total Lithium (mg/L)	0.272	0.210	-0.132	0.639
Annual Total Manganese (mg/L)	-0.0229	0.0769	-0.146	-0.207
Annual Total Molybdenum (mg/L)	0.138	0.224	0.346	0.203
Annual Total Nickel (µg/L)	0.0885	0.0420	0.607	0.135
Annual Total Selenium (µg/L)	0.484	0.217	0.682	0.375
Annual Total Thallium (mg/L)	-0.0617	-0.0909	0.665	-0.196
Annual Total Uranium (mg/L)	0.399	0.175	0.654	0.591
Annual Total Zinc (mg/L)	-0.124	0.217	0.0632	-0.0578

Bold P-value < 0.05/38 (0.05 Bonferroni Corrected for 38 independent comparisons).

Blue P-value < 0.05/38 and rs ≤ -0.6 or rs ≥ 0.6.

Table H.2: Pseudo F-Statistics from Permutation Based ANOVA Analysis on Canonical Correspondence Analysis of Benthic Invertebrate Community Data Constrained by Habitat and Stressor Variables, FRO LAEMP, 2018 to 2022


Model	Term	Full		Upper		Middle		Lower	
		Single	Marginal	Single	Marginal	Single	Marginal	Single	Marginal
Habitat	Substrate-D16	19.1	9.79	0.941	1.54	1.96	1.16	6.33	4.18
	Depth-mean	8.51	3.27	0.511	0.477	3.14	1.92	3.61	1.43
	Velocity-mean	2.39	2.15	1.55	1.61	2.14	1.46	0.894	1.3
	Width-Bankfull	2.4	2.36	1.6	2.44	1.9	1.89	2.31	0.767
	Station Gradient	4.44	2.03	4.39	2.33	2.29	3.01	2.77	2.24
	Watershed Area	40	33.5	5.09	2.31	2.37	2.66	5.75	3.49
Stressor	Summer Mean Temperature	7.32	4.59	3.29	0.879	3.04	0.923	1.52	2.16
Stressor after Habitat		6.96	3.49	2.82	1.39	1.52	1.03	2.12	1.77
Stressor	Winter Mean Temperature	14.6	2.42	2.31	1.06	5.91	2.52	6.93	7.06
Stressor after Habitat		5.02	3.23	2.59	1.52	4.15	2.7	2.99	2.07
Stressor	Calcite-Presence	14.6	6.16	3.04	2.48	9.08	2.63	2.25	1.05
Stressor after Habitat		10.6	4.23	3.67	1	9.48	2.05	3.51	1.45
Stressor	Calcite-Concretion	3.1	1.66	1.1	0.845	4.65	1.92	1.78	1.5
Stressor after Habitat		3.64	1.63	1.19	1.09	3.65	1.47	1.08	1.3
Stressor	Nickel (Ni)-Total	10.4	7.83	5.99	0.641	3.37	3.69	4.28	1.97
Stressor after Habitat		10.6	7.03	3.08	0.923	2.79	2.33	5.25	1.32
Stressor	Nitrate (as N)	32	4.14	5.72	1.01	5.14	3.46	4.97	6.96
Stressor after Habitat		2.5	3.81	2.9	2.81	4	2.35	5.65	2.28
Stressor	Selenium (Se)-Total	33.4	4.26	5.24	5.25	2.47	3.02	4.61	3.36
Stressor after Habitat		2.74	4.99	1.54	0.951	2	1.83	4.35	2.33
Stressor	Sulphate	32.3	2.67	5.66	2.21	2.05	2.07	4.41	2.14
Stressor after Habitat		3.82	2.91	1.98	1.13	1.98	1.8	4.29	1.79
Stressor	Uranium (U)-Total	31.4	4.62	6.13	1.44	2.02	1.7	8.65	1.56
Stressor after Habitat		3.91	3.51	3.32	1.9	1.92	1.12	8.97	1.47
Stressor	Cadmium (Cd)-Dissolved	18.6	2.74	3.95	0.997	2.34	2.67	3.36	1.63
Stressor after Habitat		4.39	2.25	2.25	1.36	1.89	2.24	3.05	1.6
Stressor	Total Dissolved Solids	37.4	7.21	5.17	1.67	2.03	1.36	7.17	3.91
Stressor after Habitat		3.35	3.4	0.903	1.44	1.93	1.4	6.99	1.44

- 0-25th Percentile & P-Value < 0.05.
- 25th-50th Percentile & P-Value < 0.05.
- 50th-75th Percentile & P-Value < 0.05
- 75th-100th Percentile & P-Value < 0.05.

Notes: Cells are shaded only if the associated p-value from permutation based ANOVA was < 0.05. Shading is arranged from lightest to darkest according to percentile of F-Statistic distributions within each model to highlight which predictors most strongly influence Benthic Invertebrate Community responses. F-Statistics are shown for each term as Single and Marginal. Single represents the importance of the predictor in isolation of other predictors, while Marginal represents the unique contribution of the predictor to a model containing all other predictors. Predictors were analyzed in one of three Canonical Correspondence Analysis (CCA) models, a Habitat model containing landscape and site specific variables relating to instream and landscape habitat, a Stressor model containing water quality analyte concentrations and calcite variables, and a Stressor after Habitat model, which uses partial Canonical Correspondence Analysis (pCCA) to remove the effects of habitat differences, and explains the remaining variability using variables from the Stressor model. Taxa that made up less than 1% of total abundance (on the ln(x+1) scale) and occurred in fewer than 10% of samples were excluded from analysis. Only water quality analytes which contained fewer than 15% of values below Laboratory Reporting Limits (LRL) were included in the final model. Values below LRL were included at the LRL. All predictors were scaled by subtracting the mean and dividing by the standard deviation prior to analysis.

Table H.3: Pearson Correlations of Annual Water Analytes and PCA Axis Scores, FRO LAEMP, 2018 to 2022

Variable	PCA1 (50%)		PCA2 (25%)	
	P-value	r _s	P-value	r _s
Temperature (C)	<0.001	0.661	0.182	0.176
Total Dissolved Solids (mg/L)	<0.001	0.893	0.006	0.352
Alkalinity (mg/L as CaCO ₃)	<0.001	0.804	0.009	0.338
Nitrate (mg/L)	<0.001	0.890	0.012	0.326
Nitrite (mg/L)	<0.001	0.866	0.542	0.0810
Ammonia (mg/L)	0.025	0.292	0.035	-0.276
Phosphorus (mg/L)	0.058	0.249	<0.001	-0.818
Sulphate (mg/L)	<0.001	0.884	0.003	0.381
Dissolved Aluminum (mg/L)	0.053	-0.253	<0.001	-0.478
Total Antimony (mg/L)	<0.001	0.925	0.394	0.113
Total Arsenic (mg/L)	0.004	0.372	<0.001	-0.806
Total Barium (mg/L)	<0.001	0.747	0.711	0.0492
Dissolved Cadmium (mg/L)	<0.001	0.937	0.098	0.218
Total Chromium (mg/L)	0.970	0.00505	<0.001	-0.805
Total Cobalt (mg/L)	<0.001	0.725	0.003	-0.382
Total Copper (mg/L)	0.003	0.382	<0.001	-0.765
Total Iron (mg/L)	<0.001	0.506	<0.001	-0.799
Total Lead (mg/L)	0.002	0.397	<0.001	-0.847
Total Lithium (mg/L)	<0.001	0.956	0.072	0.236
Total Manganese (mg/L)	<0.001	0.784	<0.001	-0.497
Total Molybdenum (mg/L)	<0.001	0.834	0.084	0.227
Total Nickel (mg/L)	<0.001	0.921	0.472	0.0956
Total Selenium (mg/L)	<0.001	0.914	0.029	0.285
Total Thallium (mg/L)	<0.001	0.463	<0.001	-0.736
Total Uranium (mg/L)	<0.001	0.883	0.003	0.380
Total Zinc (mg/L)	<0.001	0.584	<0.001	-0.575

 r_s ≥ 0.6 or ≤ -0.6.

 Significant correlation (p-value < 0.05).

Notes: Annual water summary calculated as the average of seasonal means (Winter, Spring, Summer, and Fall). Stations without data for all four seasons in a given year were excluded.

APPENDIX

HABITAT

Table I.1: In Situ Water Quality Taken at Biological Monitoring Areas, FRO LAEMP, 2022

Area	Date	Temperature	Dissolved Oxygen	Dissolved Oxygen	Conductivity	Specific Conductivity	pH		
	Units	°C	mg/L	%	µS/cm	µS/cm	-		
Reference	RG_HENUP	Sep-22	5.7	10.23	81.6	175.8	278.6	8.37	
		Sep-22	6.2	10.09	81.4	177.9	278	8.41	
		Sep-22	6.4	9.87	80.2	179.1	277.9	8.45	
	RG_FO26	Jun-22	4.7	10.66	82.7	154.4	252.8	7.81	
		Sep-22	8.1	10.28	87	322.9	476.9	8.7	
		Sep-22	8.3	9.71	82.1	322.3	477.1	8.47	
		Sep-22	8.1	9.71	82.1	322.3	477.1	8.47	
	RG_UFR1	Jan-22	0	11.87	81.2	209.6	400.5	8.08	
		Feb-22	0.1	11.83	81.2	184.5	350.8	8.23	
		Mar-22	0.2	12.43	85.6	162.4	308.8	8.2	
		Jun-22	6.2	10.31	83.1	161.6	252.9	7.91	
		Sep-22	8.5	9.7	83	190.3	277.7	8.46	
	Mine-Exposed	RG_FRGHSC	Dec-22	0	11.8	80.9	203	392	7.84
			Jan-22	4.8	10.05	78.7	887	1445	7.65
			Feb-22	4.9	10.08	79.2	919	1489	7.5
Mar-22			5.1	9.93	78.1	774	1250	7.37	
Jun-22			4.5	9.9	76.9	678	1114	7.29	
Sep-22			7.7	9.77	82.3	1076	1606	-	
RG_FODHE		Dec-22	5.8	9.93	79.7	998	1578	7.41	
		Jun-22	3.8	13.14	99.8	151	254.1	8.18	
		Sep-22	8.4	10.06	85.8	280.4	410.7	8.42	
		Sep-22	9.2	9.89	85.2	287.6	411.7	8.38	
RG_FOUCL		Sep-22	8.9	9.74	84.1	285.6	412.5	8.38	
		Jun-22	4	13.1	101	166.8	278.5	8.15	
		Sep-22	7.7	9.1	76.5	445.5	665	7.85	
		Sep-22	8	9.45	79.9	446.5	662	7.88	
		Sep-22	8.8	9.42	81.2	427	621	7.95	
RG_FOUNGD	Dec-22	2	11.11	80.6	276	436	7.69		
	Jun-22	4.2	10.08	80	-	-	8.05		
	Sep-22	8.5	9.19	78.9	841	1227	7.81		
	Sep-22	8.8	9.29	80.3	847	1226	7.86		
	Sep-22	9.5	7.44	82.9	86.6	1232	7.94		
RG_FODNGD	Dec-22	1.6	11.7	84.1	680	1229	7.96		
	Jun-22	4.2	10.17	80.4	-	-	8.04		
	Sep-22	10.7	9.4	85.1	1037	1426	8.11		
	Sep-22	11.3	9.22	84.6	925	1252	8.33		
	Sep-22	11.2	9.11	83.2	924	1255	7.97		
RG_MP1	Dec-22	1.7	12.33	88.7	704	1270	-		
	Jun-22	4.2	13.22	101.6	207.6	344	8.16		
	Sep-22	9.6	9.54	83.7	674	956	8.21		
	Sep-22	9.7	9.6	84.7	635	847	8.19		
	Sep-22	9.7	9.47	83.5	672	950	8.15		
RG_FOUSH	Dec-22	2	12.18	88.4	723	1290			
	Jun-22	4.3	13.2	101.6	208	344	8.22		
	Sep-22	9.4	9.91	86.8	673	958	8.24		
	Sep-22	9.3	9.88	86.4	672	959	8.22		
	Sep-22	9.1	9.83	85.4	667	959	8.21		
RG_FOUKI	Dec-22	1.3	12.18	86.9	732	1336			
	Jan-22	0.5	12.44	86.4	785	1476	8.16		
	Feb-22	2.1	11.5	83.7	768	1366	8.01		
	Mar-22	1.3	12.06	85.7	-	1152	7.94		
	Jun-22	9.6	9.75	85.1	354.1	505	7.96		
	Sep-22	9.2	9.42	85.6	662	947	8.33		
	Sep-22	10.1	9.67	86.2	676	943	8.43		
	Sep-22	11.3	9.42	86.4	592	936	8.48		
	Sep-22	8.5	9.19	78.9	841	1227	7.81		
	Sep-22	8.8	9.29	80.3	847	1226	7.86		
RG_FOBKS	Sep-22	9.5	7.44	82.9	86.6	1232	7.94		
	Dec-22	1.2	12.23	87	750	1374	8.03		
	Jan-22	0	9.92	68.3	691	1325	8.23		
	Feb-22	2.2	11.45	83.6	768	1359	8.21		
	Mar-22	1.2	12.1	85.7	625	1148	8.08		
	Jun-22	4	13.57	103.6	214.5	358.2	8.25		
	Sep-22	10.3	9.28	83.3	676	939	8.46		
	Sep-22	9.2	9.63	84	728	1044	8.29		
	Sep-22	11.1	9.4	85.6	762	1037	8.35		
RG_SCDSB	Dec-22	-0.1	11.59	79.4	667	1282	7.88		
	Dec-22	-0.1	12.14	83.3	581	1116	8.38		
	Dec-22	0.2	12.43	86	835	1507	7.96		

Table I.1: In Situ Water Quality Taken at Biological Monitoring Areas, FRO LAEMP, 2022

Area	Date	Temperature	Dissolved Oxygen	Dissolved Oxygen	Conductivity	Specific Conductivity	pH
	Units	°C	mg/L	%	µS/cm	µS/cm	-
RG_SCOUTDS	Jan-22	0.4	12.26	85.5	1032	1944	8.14
	Feb-22	0.2	12.25	84.6	873	1660	8.18
	Mar-22	1.9	12.03	87.2	773	1383	8.19
	Jun-22	3.7	13.72	103.9	231.5	390.7	8.27
	Sep-22	13	9.13	86.7	886	1152	8.74
	Sep-22	8.4	10	85.6	820	1200	8.32
	Sep-22	9.8	9.62	85.2	821	1156	8.59
	Nov-22	0.4	12.6	87.8	1000	1885	8.16
	Dec-22	0.5	12.32	86	984	1849	7.97
RG_FOBSC	Jan-22	0.3	12.06	83.7	1028	1948	8.15
	Feb-22	0.1	12.2	89	878	1675	8.19
	Mar-22	1.1	12.09	85.3	744	1376	8.22
	Jun-22	4.7	10.87	84.7	546	892	7.4
	Sep-22	12.8	9.36	88.8	954	1245	8.46
	Sep-22	8	9.92	84.2	845	1251	8.37
	Sep-22	8.9	10.3	89.2	915	1322	8.29
	Nov-22	0.1	12.88	89	998	1900	8.22
	Dec-22	0.4	12.81	89.3	966	1820	8.12
RG_FOBCP	Mar-22	1.8	12.31	88.9	761	1368	8.34
	Jun-22	5.4	10.72	85	368.9	589	7.7
	Sep-22	12	9.99	93.2	933	1240	8.44
	Sep-22	12	9.81	91.4	966	1286	8.49
	Sep-22	8.7	9.67	83.3	837	1216	8.28
	Sep-22	9.1	10.23	89.1	851	1221	8.34
	Sep-22	9.4	10.11	88.3	855	1219	8.35
RG_FRCP1SW	Jun-22	8.6	10.08	86.6	432.4	629	7.74
	Sep-22	7.1	10.54	87.4	839	1275	8.25
	Sep-22	7.4	11.22	93.7	841	1267	8.39
	Sep-22	8.3	11.57	98.7	858	1261	8.47
RG_FRSCH2	Jan-22	4.3	8.37	64.7	925	1527	7.54
	Feb-22	4.6	8.41	65.5	916	1500	7.35
	Mar-22	3.3	9.66	72.5	752	1286	7.94
	Jun-22	7.2	9.99	82.8	481.4	730	7.62
	Sep-22	8.7	8.76	75.5	753	1093	7.97
	Sep-22	9.6	8.57	75.4	767	1084	8.24
	Sep-22	10.3	8.37	75	776	1079	8.17
	Dec-22	5.3	7.7	61.1	877	1405	7.22
RG_FRUPO	Jan-22	5.2	10.25	81.1	998	1605	7.79
	Feb-22	3.6	10.64	80.6	895	1520	7.64
	Mar-22	5.2	11.13	87.9	799	1287	7.73
	Jun-22	5.5	10.62	84.4	414.9	661	7.62
	Sep-22	6.1	9.49	77	1026	1603	8.47
	Sep-22	6.6	9.81	80.5	1038	1599	8.91
	Sep-22	6.9	9.8	81.1	1048	1600	9.44
	Dec-22	5.6	10.36	82.8	964	1531	7.55
RG_FODPO	Jan-22	2.2	10.21	74.6	865	1535	7.75
	Feb-22	3.7	10.44	79.5	880	1483	7.66
	Mar-22	3.6	10.67	80.9	738	1249	7.65
	Jun-22	5.8	10.35	82.9	438.6	693	7.58
	Sep-22	6.3	9.45	76.5	612	951	7.82
	Sep-22	6.7	9.97	81.8	621	953	7.9
	Sep-22	7.2	10.06	83.4	628	952	7.91
	Dec-22	4.4	9.76	75.7	837	1379	7.46
RG_FO22	Jan-22	1.8	11.38	82.2	846	1520	8.01
	Feb-22	3.3	11	82.7	782	1337	7.92
	Mar-22	1.5	11.23	80.5	674	1222	7.69
	Sep-22	7.2	8.86	73.9	685	1038	8.08
	Sep-22	7.4	9	74.8	694	1045	8.15
	Sep-22	8.1	9.1	77.3	702	1039	8.14
	Sep-22	8.4	9.24	78.8	707	1037	8.17
	Sep-22	8.5	9.03	77.7	707	1032	8.17
	Nov-22	1.2	10.92	77.8	774	1419	7.82
Dec-22	2	11.7	87.9	741	1322	7.95	
RG_FOU EW	Jan-22	1.4	11.48	82.1	708	1290	8.15
	Feb-22	1.3	11.52	82.1	769	1404	8.04
	Mar-22	1.5	11.38	81.5	666	1208	8.09
	Sep-22	5.5	9.97	79.1	570	908	8.17
	Sep-22	5.7	10.52	84.5	610	964	8.15
	Sep-22	6.5	10.65	86.9	636	984	8.27
	Dec-22	0.3	11.33	78.4	690	1308	7.91

Mine-Exposed

Table I.2: Channel Depth and Velocity at Kick and Sweep Sampling Locations in Reference and Mine-exposed Areas, FRO LAEMP, September 2022

Replicate		1	2	3	4	5	Mean	
Reference	RG_HENUP							
	1	Depth (cm)	14	19	11	27	20	18.2
		Velocity (m/s)	0.387	0.856	0.972	0.42	0.689	0.665
		Bankfull Width (m)	21.7					-
		Wetted Width (m)	8.8					-
		Bankfull-Wetted Depth (cm)	-					-
	2	Depth (cm)	16	19	21	22	13	18.2
		Velocity (m/s)	0.324	1.201	0.581	0.602	0.35	0.612
		Bankfull Width (m)	46.9					-
		Wetted Width (m)	5.6					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	24	26	25	24	19	23.6
		Velocity (m/s)	0.192	0.491	0.212	0.289	0.371	0.311
		Bankfull Width (m)	51.2					-
		Wetted Width (m)	5.9					-
Bankfull-Wetted Depth (cm)		-					-	
Reference	RG_F026							
	1	Depth (cm)	15.5	17.5	22.5	19	14.5	17.8
		Velocity (m/s)	0.107	0.415	0.227	0.396	0.39	0.307
		Bankfull Width (m)	8.1					-
		Wetted Width (m)	4.3					-
		Bankfull-Wetted Depth (cm)	-					-
	2	Depth (cm)	14	14.5	18.5	15.5	14.5	15.4
		Velocity (m/s)	0.154	0.442	0.767	0.773	0.631	0.553
		Bankfull Width (m)	6.8					-
		Wetted Width (m)	4.2					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	18	15.5	19	19.5	12.5	16.9
		Velocity (m/s)	0.768	0.389	0.423	0.574	0.404	0.512
		Bankfull Width (m)	9.5					-
		Wetted Width (m)	4.1					-
Bankfull-Wetted Depth (cm)		-					-	
Mine-Exposed	RG_FODHE							
	1	Depth (cm)	11.5	13.5	22	13.5	11	14.3
		Velocity (m/s)	0.259	0.295	0.668	0.175	0.077	0.295
		Bankfull Width (m)	40					-
		Wetted Width (m)	2.9					-
		Bankfull-Wetted Depth (cm)	100					-
	2	Depth (cm)	19	13	20.5	15	8	15.1
		Velocity (m/s)	0.764	0.634	0.85	0.303	0.536	0.617
		Bankfull Width (m)	47					-
		Wetted Width (m)	4.18					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	11	15	24	17	11.5	15.7
		Velocity (m/s)	0.618	0.552	0.284	0.505	0.312	0.454
		Bankfull Width (m)	18					-
		Wetted Width (m)	3.9					-
Bankfull-Wetted Depth (cm)		-					-	
Mine-Exposed	RG_FOUCL							
	1	Depth (cm)	18	28	16	16	15.5	18.7
		Velocity (m/s)	0.923	0.376	0.637	0.425	0.447	0.562
		Bankfull Width (m)	32.5					-
		Wetted Width (m)	11.2					-
		Bankfull-Wetted Depth (cm)	50					-
	2	Depth (cm)	12	21	20	17.5	14.5	17
		Velocity (m/s)	0.509	0.568	0.729	0.764	0.678	0.650
		Bankfull Width (m)	18.6					-
		Wetted Width (m)	7.5					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	22.5	21.5	21	19	13.5	19.5
		Velocity (m/s)	0.452	0.55	0.453	1.191	0.95	0.719
		Bankfull Width (m)	18.5					-
		Wetted Width (m)	6.1					-
Bankfull-Wetted Depth (cm)		-					-	

Table I.2: Channel Depth and Velocity at Kick and Sweep Sampling Locations in Reference and Mine-exposed Areas, FRO LAEMP, September 2022

Replicate		1	2	3	4	5	Mean	
Mine-Exposed	RG_FOUNGD							
	1	Depth (cm)	13.5	27.5	30	28.5	21.5	24.2
		Velocity (m/s)	0.381	0.253	0.415	0.55	0.477	0.415
		Bankfull Width (m)	12.4					-
		Wetted Width (m)	8.9					-
		Bankfull-Wetted Depth (cm)	-					-
	2	Depth (cm)	24	21.5	20	20	15.5	20.2
		Velocity (m/s)	0.571	0.686	0.494	1.006	0.807	0.713
		Bankfull Width (m)	12.3					-
		Wetted Width (m)	11.1					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	10	17	21	19	22.5	17.9
		Velocity (m/s)	0.588	0.511	1.468	1.261	1.182	1.002
		Bankfull Width (m)	16.4					-
		Wetted Width (m)	11.9					-
Bankfull-Wetted Depth (cm)		-					-	
Mine-Exposed	RG_FODNGD							
	1	Depth (cm)	27	21	25	17	10	20
		Velocity (m/s)	0.786	0.336	0.538	0.839	0.218	0.543
		Bankfull Width (m)	11.9					-
		Wetted Width (m)	11.5					-
		Bankfull-Wetted Depth (cm)	-					-
	2	Depth (cm)	12.5	15	16	15	17.5	15.2
		Velocity (m/s)	0.474	0.359	0.481	0.529	0.578	0.484
		Bankfull Width (m)	12					-
		Wetted Width (m)	9.6					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	18	26	24	16.5	24.5	21.8
		Velocity (m/s)	0.562	0.507	0.546	0.721	0.662	0.600
		Bankfull Width (m)	10.8					-
		Wetted Width (m)	8.8					-
Bankfull-Wetted Depth (cm)		-					-	
Mine-Exposed	RG_MP1							
	1	Depth (cm)	25	21	20	20	20	21.2
		Velocity (m/s)	0.75	0.265	0.35	0.55	0.4	0.463
		Bankfull Width (m)	18.5					-
		Wetted Width (m)	12.6					-
		Bankfull-Wetted Depth (cm)	-					-
	2	Depth (cm)	28	28	37	41	35	33.8
		Velocity (m/s)	0.03	0.18	0.39	0.32	0.25	0.234
		Bankfull Width (m)	16.3					-
		Wetted Width (m)	12.6					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	16	15	26	29	35	24.2
		Velocity (m/s)	0.25	0.35	0.36	0.32	0.42	0.340
		Bankfull Width (m)	21.8					-
		Wetted Width (m)	19.2					-
Bankfull-Wetted Depth (cm)		-					-	
Mine-Exposed	RG_FOUSH							
	1	Depth (cm)	28	21.5	25	28	28	26.1
		Velocity (m/s)	0.48	0.72	0.72	0.52	0.58	0.604
		Bankfull Width (m)	23					-
		Wetted Width (m)	10.5					-
		Bankfull-Wetted Depth (cm)	-					-
	2	Depth (cm)	36	29	28	29	27	29.8
		Velocity (m/s)	0.29	0.37	0.42	0.42	0.55	0.410
		Bankfull Width (m)	11.7					-
		Wetted Width (m)	10					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	28	26	28	31.5	24	27.5
		Velocity (m/s)	0.51	0.39	0.5	0.56	0.75	0.542
		Bankfull Width (m)	11.4					-
		Wetted Width (m)	7.6					-
Bankfull-Wetted Depth (cm)		-					-	

Table I.2: Channel Depth and Velocity at Kick and Sweep Sampling Locations in Reference and Mine-exposed Areas, FRO LAEMP, September 2022

Replicate		1	2	3	4	5	Mean	
Mine-Exposed	RG_FOUKI							
	1	Depth (cm)	27	14.5	17.5	22.5	16.5	19.6
		Velocity (m/s)	0.536	0.629	0.338	0.543	0.756	0.560
		Bankfull Width (m)	20					-
		Wetted Width (m)	14.9					-
		Bankfull-Wetted Depth (cm)	-					-
	2	Depth (cm)	26.5	35.5	23.5	27.5	23.5	27.3
		Velocity (m/s)	0.694	0.516	0.891	1.186	0.641	0.786
		Bankfull Width (m)	11.7					-
		Wetted Width (m)	6.3					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	15	35	30.5	31.5	21	26.6
		Velocity (m/s)	0.623	0.414	0.622	0.607	0.463	0.5458
		Bankfull Width (m)	17.4					-
		Wetted Width (m)	10.5					-
Bankfull-Wetted Depth (cm)		-					-	
Mine-Exposed	RG_FOBKS							
	1	Depth (cm)	15	29	31	26	28	25.8
		Velocity (m/s)	0.353	0.796	0.611	0.624	0.407	0.558
		Bankfull Width (m)	22					-
		Wetted Width (m)	7					-
		Bankfull-Wetted Depth (cm)	-					-
	2	Depth (cm)	30	22	22	20	13	21.4
		Velocity (m/s)	0.412	0.688	0.663	0.451	0.347	0.512
		Bankfull Width (m)	17.1					-
		Wetted Width (m)	14.9					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	-	-	-	-	-	-
		Velocity (m/s)	-	-	-	-	-	-
		Bankfull Width (m)	25.4					-
		Wetted Width (m)	13.2					-
Bankfull-Wetted Depth (cm)		-					-	
Mine-Exposed	RG_SCOUTDS							
	1	Depth (cm)	21.5	38	33	24.5	26.5	28.7
		Velocity (m/s)	0.211	0.475	0.5	0.434	0.646	0.453
		Bankfull Width (m)	10.3					-
		Wetted Width (m)	7.4					-
		Bankfull-Wetted Depth (cm)	-					-
	2	Depth (cm)	13	12.5	19	18	24	17.3
		Velocity (m/s)	0.37	0.512	0.513	0.614	0.445	0.4908
		Bankfull Width (m)	11.9					-
		Wetted Width (m)	7.9					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	17	16	22	23	19	19.4
		Velocity (m/s)	0.47	0.671	0.625	0.564	0.92	0.650
		Bankfull Width (m)	11.2					-
		Wetted Width (m)	7.6					-
Bankfull-Wetted Depth (cm)		-					-	
Mine-Exposed	RG_FOBSC							
	1	Depth (cm)	22	16	14	18	16	17.2
		Velocity (m/s)	0.292	0.438	0.487	0.298	0.335	0.370
		Bankfull Width (m)	64.9					-
		Wetted Width (m)	17.5					-
		Bankfull-Wetted Depth (cm)	-					-
	2	Depth (cm)	23	26	31	20	13.5	22.7
		Velocity (m/s)	0.479	0.426	0.785	0.715	0.177	0.516
		Bankfull Width (m)	72.3					-
		Wetted Width (m)	15.3					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	23	22	24	17	14	20
		Velocity (m/s)	0.224	0.42	0.39	0.57	0.201	0.361
		Bankfull Width (m)	68.2					-
		Wetted Width (m)	13					-
Bankfull-Wetted Depth (cm)		72					-	

Table I.2: Channel Depth and Velocity at Kick and Sweep Sampling Locations in Reference and Mine-exposed Areas, FRO LAEMP, September 2022

Replicate		1	2	3	4	5	Mean	
Mine-Exposed	RG_FOBCP							
	1	Depth (cm)	12	20	21	31	24	21.6
		Velocity (m/s)	0.219	0.198	0.377	0.405	0.519	0.344
		Bankfull Width (m)	22.6					-
		Wetted Width (m)	14.4					-
		Bankfull-Wetted Depth (cm)	130					-
	2	Depth (cm)	16	19.5	20	12	34	20.3
		Velocity (m/s)	0.198	0.359	0.375	0.438	0.175	0.309
		Bankfull Width (m)	60.2					-
		Wetted Width (m)	10.9					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	19	17.5	23	29	24.5	22.6
		Velocity (m/s)	0.214	0.294	0.281	0.167	0.577	0.307
		Bankfull Width (m)	62.2					-
		Wetted Width (m)	6.7					-
		Bankfull-Wetted Depth (cm)	-					-
	4	Depth (cm)	16	14	14	13	25	16.4
		Velocity (m/s)	0.237	0.382	0.738	0.341	0.728	0.485
		Bankfull Width (m)	52					-
		Wetted Width (m)	8.9					-
Bankfull-Wetted Depth (cm)		-					-	
5	Depth (cm)	15	19	21	22	22	19.8	
	Velocity (m/s)	0.415	0.408	0.866	0.666	0.573	0.586	
	Bankfull Width (m)	45.7					-	
	Wetted Width (m)	10.1					-	
	Bankfull-Wetted Depth (cm)	-					-	
Mine-Exposed	RG_FRCP1SW							
	1	Depth (cm)	18.5	19	11	18	14.5	16.2
		Velocity (m/s)	0.542	1.308	0.499	0.715	0.579	0.729
		Bankfull Width (m)	14					-
		Wetted Width (m)	7.1					-
		Bankfull-Wetted Depth (cm)	-					-
	2	Depth (cm)	11	8.5	14.5	5.5	8	9.5
		Velocity (m/s)	0.468	0.325	1.046	0.272	0.666	0.555
		Bankfull Width (m)	14					-
		Wetted Width (m)	7.6					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	8.5	13.5	11.5	13	16.5	12.6
		Velocity (m/s)	0.299	0.476	0.55	0.314	0.494	0.427
		Bankfull Width (m)	13.5					-
		Wetted Width (m)	9.7					-
Bankfull-Wetted Depth (cm)		-					-	
Mine-Exposed	RG_FRSCH2							
	1	Depth (cm)	12	24.5	28.5	25.5	22.5	22.6
		Velocity (m/s)	0.565	0.809	0.633	0.699	0.941	0.729
		Bankfull Width (m)	7.8					-
		Wetted Width (m)	7					-
		Bankfull-Wetted Depth (cm)	-					-
	2	Depth (cm)	24	19	24	15	16	19.6
		Velocity (m/s)	0.639	0.338	0.246	0.599	0.277	0.420
		Bankfull Width (m)	9.3					-
		Wetted Width (m)	5.7					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	14	16	20	24	16	18
		Velocity (m/s)	1.122	1.256	0.971	0.927	0.648	0.985
		Bankfull Width (m)	9.5					-
		Wetted Width (m)	6.2					-
Bankfull-Wetted Depth (cm)		-					-	

Table I.2: Channel Depth and Velocity at Kick and Sweep Sampling Locations in Reference and Mine-exposed Areas, FRO LAEMP, September 2022

Replicate		1	2	3	4	5	Mean	
Mine-Exposed	RG_FRUPO							
	1	Depth (cm)	17.5	20.5	22	17	19.5	19.3
		Velocity (m/s)	0.894	0.714	0.803	0.675	0.573	0.732
		Bankfull Width (m)	14					-
		Wetted Width (m)	12.6					-
		Bankfull-Wetted Depth (cm)	-					-
	2	Depth (cm)	23	24	26	25.5	26.5	25
		Velocity (m/s)	0.616	0.71	0.434	0.898	0.512	0.634
		Bankfull Width (m)	16					-
		Wetted Width (m)	8.3					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	12.5	17	18.5	21	16.5	17.1
		Velocity (m/s)	0.471	0.575	0.635	0.889	0.95	0.704
		Bankfull Width (m)	13					-
		Wetted Width (m)	6					-
Bankfull-Wetted Depth (cm)		-					-	
Mine-Exposed	RG_FODPO							
	1	Depth (cm)	21	35	26.5	17.5	15	23
		Velocity (m/s)	0.484	0.517	0.599	0.794	0.543	0.587
		Bankfull Width (m)	15					-
		Wetted Width (m)	8.3					-
		Bankfull-Wetted Depth (cm)	30					-
	2	Depth (cm)	17	33	20	16	10	19.2
		Velocity (m/s)	0.865	0.638	0.685	0.514	0.024	0.545
		Bankfull Width (m)	13.9					-
		Wetted Width (m)	12.2					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	14.5	19	28.5	19	9	18
		Velocity (m/s)	0.589	0.95	0.774	0.424	0.394	0.626
		Bankfull Width (m)	12.7					-
		Wetted Width (m)	11.2					-
Bankfull-Wetted Depth (cm)		-					-	
Mine-Exposed	RG_FO22							
	1	Depth (cm)	51	25	61	23	25	37
		Velocity (m/s)	0.069	0.113	0.552	0.364	0.257	0.271
		Bankfull Width (m)	19.9					-
		Wetted Width (m)	19.1					-
		Bankfull-Wetted Depth (cm)	-					-
	2	Depth (cm)	40	31	36	33	34	34.8
		Velocity (m/s)	0.292	0.423	0.589	0.736	0.649	0.538
		Bankfull Width (m)	16.55					-
		Wetted Width (m)	15.6					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	25	30	28	21	41	29
		Velocity (m/s)	0.91	0.655	0.757	0.769	0.393	0.697
		Bankfull Width (m)	15.48					-
		Wetted Width (m)	14.7					-
		Bankfull-Wetted Depth (cm)	-					-
	4	Depth (cm)	25	34	26	30	22	27.4
		Velocity (m/s)	0.494	0.709	0.665	0.508	0.429	0.561
		Bankfull Width (m)	23.5					-
		Wetted Width (m)	21.6					-
Bankfull-Wetted Depth (cm)		-					-	
5	Depth (cm)	31	38	42	20	20	30.2	
	Velocity (m/s)	0.361	0.979	0.577	0.895	0.876	0.738	
	Bankfull Width (m)	16.89					-	
	Wetted Width (m)	16.4					-	
	Bankfull-Wetted Depth (cm)	-					-	

Table I.2: Channel Depth and Velocity at Kick and Sweep Sampling Locations in Reference and Mine-exposed Areas, FRO LAEMP, September 2022

Replicate		1	2	3	4	5	Mean	
Mine-Exposed	RG_FOU EW							
	1	Depth (cm)	11	20	32	42	31	27.2
		Velocity (m/s)	0.31	0.425	0.78	0.891	0.439	0.569
		Bankfull Width (m)	29.9					-
		Wetted Width (m)	12.6					-
		Bankfull-Wetted Depth (cm)	120					-
	2	Depth (cm)	37	24	29	32	39	32.2
		Velocity (m/s)	0.009	0.147	0.47	0.612	1.046	0.457
		Bankfull Width (m)	17.8					-
		Wetted Width (m)	17					-
		Bankfull-Wetted Depth (cm)	-					-
	3	Depth (cm)	12	13	17	46	43	26.2
		Velocity (m/s)	0.167	0.206	0.882	1.432	0.953	0.728
		Bankfull Width (m)	19.5					-
		Wetted Width (m)	17.1					-
Bankfull-Wetted Depth (cm)		-					-	

Table I.3: Visual Periphyton Coverage Scores, FRO LAEMP, September 2022

Area Type	Biological Area Code	Station					Mean	Standard Deviation
		1	2	3	4	5		
Reference	RG_HENUP	3	3	3	-	-	3.0	0.00
Reference	RG_FO26	4	3	2	-	-	3.0	1.00
Mine-Exposed	RG_FODHE	2	2	2	-	-	2.0	0.00
Mine-Exposed	RG_FOUNGD	2	3	2	-	-	2.3	0.58
Mine-Exposed	RG_FODNGD	2	3	2	-	-	2.3	0.58
Mine-Exposed	RG_MP1	2	2	2	-	-	2.0	0.00
Mine-Exposed	RG_FOUSH	2	2	2	-	-	2.0	0.00
Mine-Exposed	RG_FOUKI	2	3	2	-	-	2.3	0.58
Mine-Exposed	RG_FOBKS	2	2	2	-	-	2.0	0.00
Mine-Exposed	RG_SCOUTDS	2	3	2	-	-	2.3	0.58
Mine-Exposed	RG_FOBSC	2	2	2	-	-	2.0	0.00
Mine-Exposed	RG_FOBBCP	3	3	3	3	3	3.0	0.00
Mine-Exposed	RG_FRCP1SW	1	2	2	-	-	1.7	0.58
Mine-Exposed	RG_FRSCH2	3	3	3	-	-	3.0	0.00
Mine-Exposed	RG_FRUPO	2	3	3	-	-	2.7	0.58
Mine-Exposed	RG_FODPO	3	2	3	-	-	2.7	0.58
Mine-Exposed	RG_FO22	1	1	1	1	1	1.0	0.00
Mine-Exposed	RG_FOU EW	2	3	2	-	-	2.3	0.58

Note: "-" indicates no data.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_HENUP-1					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	4.9	-
2	0	0	0	9.1	-
3	0	0	0	6.1	-
4	0	0	0	0.2	-
5	0	0	0	1.4	-
6	0	0	0	0.2	-
7	0	0	0	1.7	-
8	0	0	0	5	-
9	0	0	0	7.1	-
10	0	0	0	5.9	0.25
11	0	0	0	2.9	-
12	0	0	0	6.4	-
13	0	0	0	14	-
14	0	0	0	7.8	-
15	0	0	0	0.5	-
16	0	0	0	16.1	-
17	0	0	0	24.5	-
18	0	0	0	1.8	-
19	0	0	0	5.9	-
20	0	0	0	11.5	0.75
21	0	0	0	18	-
22	0	0	0	13.5	-
23	0	0	0	10	-
24	0	0	0	9.1	-
25	0	0	0	8.5	-
26	0	0	0	15	-
27	0	0	0	6.5	-
28	0	0	0	11.6	-
29	0	0	0	5.6	-
30	0	0	0	18.3	0.5
31	0	0	0	5.3	-
32	0	0	0	13.4	-
33	0	0	0	8.5	-
34	0	0	0	11.2	-
35	0	0	0	0.2	-
36	0	0	0	4.2	-
37	0	0	0	4.8	-
38	0	0	0	10.3	-
39	0	0	0	10.9	-
40	0	0	0	9.6	0.25
41	0	0	0	8.3	-
42	0	0	0	13.5	-
43	0	0	0	10.3	-
44	0	0	0	4.8	-
45	0	0	0	7.2	-
46	0	0	0	5.9	-
47	0	0	0	8.2	-
48	0	0	0	5.8	-
49	0	0	0	3.3	-
50	0	0	0	5.2	0.75
51	0	0	0	5.1	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_HENUP-1					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	7.3	-
53	0	0	0	3.6	-
54	0	0	0	3.2	-
55	0	0	0	5	-
56	0	0	0	7.9	-
57	0	0	0	9.2	-
58	0	0	0	19.5	-
59	0	0	0	3.3	-
60	0	0	0	7.5	0.5
61	0	0	0	4.6	-
62	0	0	0	0.2	-
63	0	0	0	4.2	-
64	0	0	0	18.4	-
65	0	0	0	12	-
66	0	0	0	28	-
67	0	0	0	5	-
68	0	0	0	8.1	-
69	0	0	0	2.7	-
70	0	0	0	7.5	0.5
71	0	0	0	1.4	-
72	0	0	0	4.8	-
73	0	0	0	6.2	-
74	0	0	0	32.4	-
75	0	0	0	7	-
76	0	0	0	3.2	-
77	0	0	0	9.5	-
78	0	0	0	4.8	-
79	0	0	0	8.8	-
80	0	0	0	6.1	0.25
81	0	0	0	0.2	-
82	0	0	0	4	-
83	0	0	0	4.6	-
84	0	0	0	11.2	-
85	0	0	0	4.9	-
86	0	0	0	9.2	-
87	0	0	0	0.2	-
88	0	0	0	2.8	-
89	0	0	0	8.6	-
90	0	0	0	11.5	0.5
91	0	0	0	3.5	-
92	0	0	0	11	-
93	0	0	0	4	-
94	0	0	0	9.9	-
95	0	0	0	12	-
96	0	0	0	8.5	-
97	0	0	0	2.1	-
98	0	0	0	7.9	-
99	0	0	0	9.5	-
100	0	0	0	2.7	0.5
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.00	0.00	7.75	0.48
Binary Calcite Index (CI)	0.00				
Proportional Calcite Index (CI')	0.00				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_HENUP-2					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	11	-
2	0	0	0	7.6	-
3	0	0	0	6.2	-
4	0	0	0	5.9	-
5	0	0	0	8.1	-
6	0	0	0	4.5	-
7	0	0	0	3.3	-
8	0	0	0	8	-
9	0	0	0	16.5	-
10	0	0	0	5.9	0.25
11	0	0	0	5.5	-
12	0	0	0	11	-
13	0	0	0	5.2	-
14	0	0	0	6.1	-
15	0	0	0	10	-
16	0	0	0	7.8	-
17	0	0	0	6.8	-
18	0	0	0	4.9	-
19	0	0	0	8.2	-
20	0	0	0	8.4	0.5
21	0	0	0	6.5	-
22	0	0	0	19	-
23	0	0	0	6.1	-
24	0	0	0	7.4	-
25	0	0	0	9.7	-
26	0	0	0	7.2	-
27	0	0	0	8.1	-
28	0	0	0	6	-
29	0	0	0	6.6	-
30	0	0	0	7.8	-
31	0	0	0	5.6	0.25
32	0	0	0	7.7	-
33	0	0	0	7.3	-
34	0	0	0	24.5	-
35	0	0	0	10.4	-
36	0	0	0	8	-
37	0	0	0	5.8	-
38	0	0	0	5.5	-
39	0	0	0	8.8	-
40	0	0	0	6.5	0.25
41	0	0	0	5.5	-
42	0	0	0	3.5	-
43	0	0	0	5	-
44	0	0	0	7.6	-
45	0	0	0	13.2	-
46	0	0	0	32	-
47	0	0	0	7.9	-
48	0	0	0	30.5	-
49	0	0	0	4.4	-
50	0	0	0	5	0.25
51	0	0	0	4.5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_HENUP-2					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	7	-
53	0	0	0	8	-
54	0	0	0	5.6	-
55	0	0	0	17.5	-
56	0	0	0	6.8	-
57	0	0	0	7.5	-
58	0	0	0	6.4	-
59	0	0	0	6.7	-
60	0	0	0	6.5	0.5
61	0	0	0	19	-
62	0	0	0	6.4	-
63	0	0	0	5.6	-
64	0	0	0	7.3	-
65	0	0	0	6	-
66	0	0	0	7.4	-
67	0	0	0	2.1	-
68	0	0	0	3.2	-
69	0	0	0	1.5	-
70	0	0	0	0.2	1
71	0	0	0	1.9	-
72	0	0	0	6.4	-
73	0	0	0	5	-
74	0	0	0	11.5	-
75	0	0	0	6.1	-
76	0	0	0	4.8	-
77	0	0	0	7.5	-
78	0	0	0	19	-
79	0	0	0	5	-
80	0	0	0	7.2	0.25
81	0	0	0	6.2	-
82	0	0	0	4.5	-
83	0	0	0	10	-
84	0	0	0	7.2	-
85	0	0	0	5.2	-
86	0	0	0	4.1	-
87	0	0	0	8.9	-
88	0	0	0	7.3	-
89	0	0	0	8	-
90	0	0	0	11.5	0.25
91	0	0	0	2.8	-
92	0	0	0	2.5	-
93	0	0	0	10.5	-
94	0	0	0	6.9	-
95	0	0	0	7.6	-
96	0	0	0	6.9	-
97	0	0	0	6.5	-
98	0	0	0	18	-
99	0	0	0	8	-
100	0	0	0	11.9	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.00	0.00	8.04	0.38
Binary Calcite Index (CI)	0.00				
Proportional Calcite Index (CI')	0.00				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_HENUP-3					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	6.2	-
2	0	0	0	8.5	-
3	0	0	0	18	-
4	0	0	0	25.5	-
5	0	0	0	10.5	-
6	0	0	0	0.2	-
7	0	0	0	6.9	-
8	0	0	0	8	-
9	0	0	0	8.3	-
10	0	0	0	10.4	0.25
11	0	0	0	6.5	-
12	0	0	0	11.8	-
13	0	0	0	0.2	-
14	0	0	0	0.5	-
15	0	0	0	4.2	-
16	0	0	0	3	-
17	0	0	0	4.9	-
18	0	0	0	28	-
19	0	0	0	7	-
20	0	0	0	13	0.25
21	0	0	0	10.6	-
22	0	0	0	14.5	-
23	0	0	0	24.5	-
24	0	0	0	9.6	-
25	0	0	0	6.5	-
26	0	0	0	26	-
27	0	0	0	26.5	-
28	0	0	0	10.2	-
29	0	0	0	11.7	-
30	0	0	0	7	0
31	0	0	0	14.6	-
32	0	0	0	9	-
33	0	0	0	12.7	-
34	0	0	0	8.5	-
35	0	0	0	16.2	-
36	0	0	0	9.9	-
37	0	0	0	10.1	-
38	0	0	0	8.5	-
39	0	0	0	7.7	-
40	0	0	0	36	0.75
41	0	0	0	8.9	-
42	0	0	0	9	-
43	0	0	0	12	-
44	0	0	0	8.5	-
45	0	0	0	8.9	-
46	0	0	0	9	-
47	0	0	0	13.6	-
48	0	0	0	12	-
49	0	0	0	9.6	-
50	0	0	0	12.4	0.25
51	0	0	0	6.2	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_HENUP-3					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	9.7	-
53	0	0	0	6.5	-
54	0	0	0	11	-
55	0	0	0	8.2	-
56	0	0	0	12.4	-
57	0	0	0	9.2	-
58	0	0	0	6.2	-
59	0	0	0	6	-
60	0	0	0	7.4	-
61	0	0	0	9	0.25
62	0	0	0	9.5	-
63	0	0	0	4.5	-
64	0	0	0	2.5	-
65	0	0	0	5.1	-
66	0	0	0	12.5	-
67	0	0	0	10.3	-
68	0	0	0	7.1	-
69	0	0	0	5.8	-
70	0	0	0	6	0.25
71	0	0	0	13	-
72	0	0	0	5.2	-
73	0	0	0	8.5	-
74	0	0	0	8.2	-
75	0	0	0	12.5	-
76	0	0	0	5.2	-
77	0	0	0	13.5	-
78	0	0	0	7.6	-
79	0	0	0	16.6	-
80	0	0	0	5.5	-
81	0	0	0	10.1	0.5
82	0	0	0	5.5	-
83	0	0	0	7.3	-
84	0	0	0	7	-
85	0	0	0	11.7	-
86	0	0	0	6.8	-
87	0	0	0	10.5	-
88	0	0	0	5.9	-
89	0	0	0	8	-
90	0	0	0	6.1	-
91	0	0	0	8.2	-
92	0	0	0	6.7	0.25
93	0	0	0	13.3	-
94	0	0	0	9.7	-
95	0	0	0	12.5	-
96	0	0	0	5.1	-
97	0	0	0	15	-
98	0	0	0	4.8	-
99	0	0	0	21	-
100	0	0	0	8.5	0.5
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.00	0.00	10.0	0.33
Binary Calcite Index (CI)	0.00				
Proportional Calcite Index (CI')	0.00				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FO26-1					
16-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	8.5	-
2	0	0	0	5.5	-
3	0	0	0	2.5	-
4	0	0	0	7	-
5	0	0	0	9	-
6	0	0	0	2	-
7	0	0	0	9	-
8	0	0	0	9	-
9	0	0	0	6	-
10	0	0	0	8	0
11	0	0.2	1	4.5	-
12	0	0	0	17	-
13	0	0	0	9	-
14	0	0	0	1.5	-
15	0	0	0	10	-
16	0	0	0	5	-
17	0	0	0	4.5	-
18	0	0	0	10.5	-
19	0	0.1	1	8	-
20	0	0	0	6.5	0.5
21	0	0	0	6	-
22	0	0	0	6.5	-
23	0	0	0	7.5	-
24	0	0	0	6.5	-
25	0	0	0	7	-
26	0	0	0	6	-
27	0	0	0	3	-
28	0	0	0	8	-
29	0	0	0	1.5	-
30	0	0	0	7	0.25
31	0	0	0	20	-
32	0	0	0	5	-
33	0	0	0	4.5	-
34	0	0	0	16	-
35	0	0	0	11	-
36	0	0	0	23	-
37	0	0	0	18	-
38	0	0	0	4	-
39	0	0	0	4	-
40	0	0	0	6.5	0
41	0	0	0	10	-
42	0	0	0	8.5	-
43	0	0	0	9	-
44	0	0	0	8.5	-
45	0	0	0	12	-
46	0	0	0	6.5	-
47	0	0	0	3.5	-
48	0	0	0	7.5	-
49	0	0	0	6	-
50	0	0	0	6	0.5
51	0	0	0	5.5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FO26-1					
16-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	5.5	-
53	0	0	0	8	-
54	0	0	0	7.5	-
55	0	0	0	6	-
56	0	0	0	4	-
57	0	0	0	5	-
58	0	0	0	7.5	-
59	0	0	0	3.5	-
60	0	0	0	5.5	0.5
61	0	0	0	7.5	-
62	0	0	0	8	-
63	0	0	0	6	-
64	0	0	0	9	-
65	0	0	0	4.5	-
66	0	0	0	0.5	-
67	0	0	0	8.5	-
68	0	0	0	7	-
69	0	0	0	13.5	-
70	0	0	0	6.5	0.5
71	0	0	0	6.5	-
72	0	0	0	6	-
73	0	0	0	1	-
74	0	0	0	6	-
75	0	0	0	0.5	-
76	0	0	0	8	-
77	0	0	0	8	-
78	0	0	0	23	-
79	0	0	0	7	-
80	0	0	0	10	0.25
81	0	0	0	6	-
82	0	0	0	8	-
83	0	0	0	11	-
84	0	0	0	7	-
85	0	0	0	8	-
86	0	0	0	16	-
87	0	0	0	6.5	-
88	0	0	0	12	-
89	0	0	0	11	-
90	0	0	0	16	0
91	0	0	0	8	-
92	0	0	0	5	-
93	0	0	0	6	-
94	0	0.1	1	10	-
95	0	0	0	8.5	-
96	0	0	0	8	-
97	0	0	0	21	-
98	0	0	0	8.1	-
99	0	0	0	6	-
100	0	0	0	5.5	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.00	0.03	7.841	0.28
Binary Calcite Index (CI)	0.03				
Proportional Calcite Index (CI')	0.00				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FO26-2					
16-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	6.5	-
2	0	0	0	12	-
3	0	0	0	7	-
4	0	0	0	6.5	-
5	0	0	0	3	-
6	0	0	0	3	-
7	0	0	0	6.5	-
8	0	0	0	4	-
9	0	0	0	4.5	-
10	0	0	0	6.5	0.25
11	0	0	0	4.5	-
12	0	0	0	5.5	-
13	0	0	0	8.5	-
14	0	0	0	7.5	-
15	0	0	0	8.5	-
16	0	0	0	6.5	-
17	0	0	0	4	-
18	0	0	0	5.5	-
19	0	0	0	4	-
20	0	0	0	6.5	0.25
21	0	0	0	5.5	-
22	0	0	0	3.5	-
23	0	0.1	1	11	-
24	0	0	0	6	-
25	0	0	0	6	-
26	0	0	0	5.5	-
27	0	0	0	8	-
28	0	0	0	5.5	-
29	0	0	0	8	-
30	0	0	0	4.5	0.75
31	0	0	0	6.5	-
32	0	0	0	8	-
33	0	0	0	4.5	-
34	0	0	0	7	-
35	0	0	0	8.5	-
36	0	0	0	6.5	-
37	0	0	0	8	-
38	0	0	0	12	-
39	0	0	0	8.5	-
40	0	0	0	6.5	0.25
41	0	0.1	1	11.5	-
42	0	0	0	6.5	-
43	0	0	0	7	-
44	0	0.1	1	8.5	-
45	0	0	0	8.5	-
46	0	0	0	7	-
47	0	0	0	5	-
48	0	0	0	8	-
49	0	0	0	6	-
50	0	0	0	8.5	0.25
51	0	0	0	10.5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FO26-2					
16-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	6.5	-
53	0	0	0	6.5	-
54	0	0	0	6	-
55	0	0	0	10.5	-
56	0	0	0	6.5	-
57	0	0	0	3.5	-
58	0	0	0	1	-
59	0	0	0	7	-
60	0	0	0	6	0
61	0	0	0	1.5	-
62	0	0	0	6	-
63	0	0	0	4.5	-
64	0	0	0	5.5	-
65	0	0	0	5	-
66	0	0	0	10	-
67	0	0	0	10	-
68	0	0	0	7	-
69	0	0	0	6.5	-
70	0	0	0	7	0.25
71	0	0	0	7.5	-
72	0	0	0	5.5	-
73	0	0	0	5	-
74	0	0	0	4	-
75	0	0	0	7	-
76	0	0	0	7	-
77	0	0	0	8	-
78	0	0	0	7.5	-
79	0	0.1	1	8	-
80	0	0	0	7	0.25
81	0	0	0	3.5	-
82	0	0	0	7	-
83	0	0	0	7.5	-
84	0	0	0	5	-
85	0	0	0	7.5	-
86	0	0	0	4.5	-
87	0	0	0	0.2	-
88	0	0	0	5	-
89	0	0	0	2.5	-
90	0	0	0	4	0.25
91	0	0	0	1	-
92	0	0	0	9	-
93	0	0	0	4.5	-
94	0	0	0	8	-
95	0	0	0	12	-
96	0	0	0	6.5	-
97	0	0	0	6	-
98	0	0	0	4.5	-
99	0	0	0	7	-
100	0	0	0	7	0.75
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.00	0.04	6.422	0.33
Binary Calcite Index (CI)	0.04				
Proportional Calcite Index (CI')	0.00				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_F026-3					
16-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	11	-
2	0	0	0	5.5	-
3	0	0	0	6	-
4	0	0.1	1	11	-
5	0	0	0	9	-
6	0	0	0	8.5	-
7	0	0	0	11	-
8	0	0	0	7.5	-
9	0	0	0	7	-
10	0	0	0	11	0.25
11	0	0	0	3.5	-
12	0	0	0	7	-
13	0	0	0	5	-
14	0	0	0	7	-
15	0	0	0	13.5	-
16	0	0	0	8	-
17	0	0	0	6	-
18	0	0	0	7	-
19	0	0	0	11	-
20	0	0	0	11	0.5
21	0	0	0	10	-
22	0	0	0	5	-
23	0	0	0	8	-
24	0	0	0	9.5	-
25	0	0	0	7	-
26	0	0	0	8.5	-
27	0	0	0	3.5	-
28	0	0	0	6.5	-
29	0	0	0	3	-
30	0	0	0	5	0.25
31	0	0	0	16	-
32	0	0	0	5.5	-
33	0	0	0	8.5	-
34	0	0	0	10	-
35	0	0	0	8	-
36	0	0	0	10	-
37	0	0	0	7.5	-
38	0	0	0	9	-
39	0	0	0	5.5	-
40	0	0	0	11	0.25
41	0	0	0	5	-
42	0	0	0	8	-
43	0	0	0	6	-
44	0	0	0	8	-
45	0	0	0	10.5	-
46	0	0	0	5	-
47	0	0	0	7	-
48	0	0	0	10	-
49	0	0	0	5.5	-
50	0	0	0	6.5	0.25
51	0	0	0	11	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FO26-3					
16-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	4	-
53	0	0	0	6.5	-
54	0	0	0	4.5	-
55	0	0	0	11	-
56	0	0	0	4.5	-
57	0	0	0	14	-
58	0	0	0	7.5	-
59	0	0	0	5.5	-
60	0	0	0	7.5	0.75
61	0	0	0	9	-
62	0	0	0	9.5	-
63	0	0	0	6	-
64	0	0	0	7	-
65	0	0	0	9	-
66	0	0	0	6	-
67	0	0	0	5.5	-
68	0	0	0	8.5	-
69	0	0	0	6	-
70	0	0	0	9	0.5
71	0	0	0	10.5	-
72	0	0	0	4	-
73	0	0	0	7	-
74	0	0	0	6.5	-
75	0	0	0	7	-
76	0	0	0	4	-
77	0	0	0	9.5	-
78	0	0	0	5	-
79	0	0	0	5.5	-
80	0	0	0	8.5	0.25
81	0	0	0	14	-
82	0	0	0	4	-
83	0	0	0	10	-
84	0	0	0	5.5	-
85	0	0	0	13	-
86	0	0	0	6	-
87	0	0	0	9	-
88	0	0	0	13	-
89	0	0	0	8	-
90	0	0	0	6	0
91	0	0	0	5.5	-
92	0	0	0	9	-
93	0	0	0	8	-
94	0	0	0	7	-
95	0	0	0	7	-
96	0	0	0	8	-
97	0	0	0	2.5	-
98	0	0	0	4.5	-
99	0	0	0	5	-
100	0	0	0	9	0.5
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.00	0.01	7.68	0.35
Binary Calcite Index (CI)	0.01				
Proportional Calcite Index (CI')	0.00				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODHE-1					
19-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.4	1	11	-
2	0	0	0	9.4	-
3	0	0	0	4.7	-
4	0	0.1	1	8.5	-
5	0	0.2	1	7.1	-
6	0	0	0	3.1	-
7	0	0	0	0.7	-
8	0	0.1	1	17	-
9	0	0.1	1	12.4	-
10	0	0	0	7	-
11	0	0.2	1	7.2	-
12	0	0	0	8	0.5
13	0	0.2	1	9.2	-
14	0	0	0	1.2	-
15	0	0	0	7.1	-
16	0	0	0	12	-
17	0	0	0	3.9	-
18	0	0	0	10.2	-
19	0	0	0	12.7	-
20	0	0	0	4.2	0
21	0	0	0	11	-
22	0	0	0	8.2	-
23	0	0	0	10.1	-
24	0	0	0	6.1	-
25	0	0	0	14.5	-
26	0	0	0	9.7	-
27	0	0	0	12.5	-
28	0	0	0	7.4	-
29	0	0	0	7.1	-
30	0	0	0	9.6	0.25
31	0	0	0	4.9	-
32	0	0.3	1	19	-
33	0	0	0	7.5	-
34	0	0	0	17	-
35	0	0	0	7.7	-
36	0	0	0	8	-
37	0	0	0	5.4	-
38	0	0	0	6.7	-
39	0	0	0	6.4	-
40	0	0	0	8.5	0.5
41	0	0	0	6.6	-
42	0	0	0	6	-
43	0	0.1	1	10.4	-
44	0	0	0	9.2	-
45	0	0	0	14.9	-
46	0	0	0	9.5	-
47	0	0	0	8.1	-
48	0	0	0	5.2	-
49	0	0	0	6.4	-
50	0	0	0	12.5	0.75
51	0	0	0	4.9	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODHE-1					
19-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0.3	1	7.2	-
53	0	0.3	1	17.4	-
54	0	0	0	5.6	-
55	0	0	0	5.1	-
56	0	0.1	1	10.4	-
57	0	0	0	8.9	-
58	0	0	0	7.9	-
59	0	-	-	0.2	-
60	0	0	0	6.9	0.5
61	0	0	0	1.7	-
62	0	0	0	2.9	-
63	0	0	0	6.6	-
64	0	0	0	4.2	-
65	0	0	0	6.4	-
66	0	0	0	10.7	-
67	0	0.1	1	4.4	-
68	0	0	0	6.2	-
69	0	0	0	6.9	-
70	0	0	0	3.6	0.25
71	0	0	0	8	-
72	0	0	0	3.4	-
73	0	0.1	1	7.9	-
74	0	0.1	1	9.9	-
75	0	0	0	13	-
76	0	0	0	4.2	-
77	0	0	0	9	-
78	0	0	0	0.9	-
79	0	0	0	16	-
80	0	0	0	6.9	0.25
81	0	0	0	9.6	-
82	0	0	0	9.5	-
83	0	0	0	5	-
84	0	0.1	1	5.6	-
85	0	0	0	20.4	-
86	0	0.2	1	5.2	-
87	0	0	0	4.7	-
88	0	0	0	4.1	-
89	0	0	0	7.6	-
90	0	0	0	6.5	0.75
91	0	0	0	9.4	-
92	0	0	0	15.5	-
93	0	0	0	9.2	-
94	0	0	0	8.5	-
95	0	0	0	8.7	-
96	0	0	0	6.5	-
97	0	0	0	8.2	-
98	0	0	0	7.1	-
99	0	0	0	10.8	-
100	0	0	0	7.6	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.03	0.17	8.097	0.40
Binary Calcite Index (CI)	0.17				
Proportional Calcite Index (CI')	0.03				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODHE-2					
19-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	7.7	-
2	0	0.1	1	9.2	-
3	0	0	0	13.5	-
4	0	0	0	4.5	-
5	0	0	0	10.1	-
6	0	0	0	4.9	-
7	0	0	0	15.4	-
8	0	0	0	2.3	-
9	0	0	0	14.2	-
10	0	0	0	7.3	0
11	0	0	0	5.6	-
12	0	0	0	7.5	-
13	0	0	0	5.4	-
14	0	0.1	1	2.2	-
15	0	0	0	14.2	-
16	0	0	0	5.1	-
17	0	0	0	1.5	-
18	0	0	0	1.6	-
19	0	0	0	3.8	-
20	0	0	0	11	-
21	0	0	0	4.6	-
22	0	0	0	26.5	0.5
23	0	0	0	8.5	-
24	0	0	0	13.5	-
25	0	0	0	5.5	-
26	0	0	0	4.8	-
27	0	0	0	3.4	-
28	0	0	0	4.2	-
29	0	0	0	3	-
30	0	0	0	8	0
31	0	0	0	9.9	-
32	0	0	0	5.6	-
33	0	0	0	8.4	-
34	0	0	0	15.5	-
35	0	0	0	25.3	-
36	0	0	0	2.8	-
37	0	0	0	8.4	-
38	0	0	0	11.6	-
39	0	0	0	3.2	-
40	0	0	0	6.9	0.25
41	0	0	0	14	-
42	0	0	0	7.9	-
43	0	0	0	9.9	-
44	0	0	0	7.1	-
45	0	0	0	17.5	-
46	0	0.1	1	6.1	-
47	0	0	0	17	-
48	0	0	0	10.2	-
49	0	0	0	0.2	-
50	0	0	0	8.5	0.25
51	0	0	0	2.5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODHE-2					
19-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	7.2	-
53	0	0	0	11.6	-
54	0	0	0	5.6	-
55	0	0	0	9.7	-
56	0	0	0	9.9	-
57	0	0	0	13.5	-
58	0	0.1	1	7.1	-
59	0	0	0	8.9	-
60	0	0.3	1	6.8	0.5
61	0	0.1	1	5.1	-
62	0	0	0	6.2	-
63	0	0	0	11.5	-
64	0	0	0	6.1	-
65	0	0	0	2.2	-
66	0	0	0	22.5	-
67	0	0	0	11.3	-
68	0	0	0	6.8	-
69	0	0	0	5.8	-
70	0	0	0	21	-
71	0	0	0	6.6	0.25
72	0	0.1	1	5.9	-
73	0	0	0	6.2	-
74	0	0	0	3.4	-
75	0	0	0	2.3	-
76	0	0	0	5.6	-
77	0	0	0	16	-
78	0	0	0	13.8	-
79	0	0	0	10.1	-
80	0	0	0	7	0
81	0	0	0	5.1	-
82	0	0	0	15.5	-
83	0	0	0	0.2	-
84	0	0	0	4.8	-
85	0	0	0	11.2	-
86	0	0	0	5.5	-
87	0	0	0	14	-
88	0	0	0	7.9	-
89	0	0	0	6.5	-
90	0	0	0	5.5	0
91	0	0	0	14.5	-
92	0	0	0	7.8	-
93	0	0	0	4.6	-
94	0	0.2	1	12.6	-
95	0	0.1	1	9.5	-
96	0	0	0	5.2	-
97	0	0	0	8.1	-
98	0	0	0	7.1	-
99	0	0	0	9.6	-
100	0	0	0	8.4	0
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.01	0.09	8.47	0.18
Binary Calcite Index (CI)	0.09				
Proportional Calcite Index (CI')	0.01				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODHE-3					
19-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	6.4	-
2	0	0	0	19	-
3	0	0	0	9.5	-
4	0	0	0	1.3	-
5	0	0	0	0.8	-
6	0	0	0	7	-
7	0	0	0	15	-
8	0	0	0	7.1	-
9	0	0	0	13.8	-
10	0	0	0	12	0.25
11	0	0	0	4.5	-
12	0	0	0	9.6	-
13	0	0	0	17.5	-
14	0	0	0	17.5	-
15	0	0	0	7.6	-
16	0	0	0	10.8	-
17	0	0	0	9.5	-
18	0	0	0	6.5	-
19	0	0	0	14.7	-
20	0	0	0	8.7	0.25
21	0	0.1	1	10.5	-
22	0	0	0	4.1	-
23	0	0	0	15.6	-
24	0	0	0	4.6	-
25	0	0	0	7.9	-
26	0	0	0	9.9	-
27	0	0	0	21.2	-
28	0	0	0	3.5	-
29	0	0	0	2.3	-
30	0	0	0	11.9	0.25
31	0	0	0	15.5	-
32	0	0	0	6.1	-
33	0	0	0	8.1	-
34	0	0	0	6.3	-
35	0	0	0	3.2	-
36	0	0	0	9.3	-
37	0	0	0	14	-
38	0	0	0	11.9	-
39	0	0	0	4.8	-
40	0	0	0	9.2	0.25
41	0	0	0	4.8	-
42	0	0	0	5.2	-
43	0	0	0	16.5	-
44	0	0	0	13.3	-
45	0	0	0	13	-
46	0	0	0	11.2	-
47	0	0	0	22	-
48	0	0	0	11.3	-
49	0	0	0	0.8	-
50	0	0	0	10.2	0.25
51	0	0	0	5.3	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODHE-3					
19-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	13	-
53	0	0	0	8.7	-
54	0	0	0	11	-
55	0	0	0	2.4	-
56	0	0	0	14.5	-
57	0	0	0	1.7	-
58	0	0	0	11	-
59	0	0	0	29.6	-
60	0	0	0	9.2	0
61	0	0	0	4.7	-
62	0	0	0	21.5	-
63	0	0	0	6.1	-
64	0	0	0	3.9	-
65	0	0	0	9.3	-
66	0	0	0	13.4	-
67	0	0	0	0.2	-
68	0	0	0	13	-
69	0	0	0	1.4	-
70	0	0	0	6.1	0.25
71	0	0	0	7.9	-
72	0	0	0	9.3	-
73	0	0	0	3.6	-
74	0	0	0	11.5	-
75	0	0	0	9.6	-
76	0	0	0	11.5	-
77	0	0	0	12.2	-
78	0	0	0	9.9	-
79	0	0	0	6.4	-
80	0	0	0	10.1	0.5
81	0	0	0	6.4	-
82	0	0	0	9.4	-
83	0	0	0	10.5	-
84	0	0	0	6.2	-
85	0	0	0	10	-
86	0	0	0	3.9	-
87	0	0	0	5.1	-
88	0	0	0	21.5	-
89	0	0	0	19.7	-
90	0	0	0	5.8	0
91	0	0	0	9.3	-
92	0	0	0	13.5	-
93	0	0	0	5.4	-
94	0	0	0	11.9	-
95	0	0	0	7.4	-
96	0	0	0	7.2	-
97	0	0	0	10.2	-
98	0	0	0	11.9	-
99	0	0	0	7.3	-
100	0	0	0	6	0
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.00	0.01	9.54	0.20
Binary Calcite Index (CI)	0.01				
Proportional Calcite Index (CI')	0.00				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUCL-1					
16-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	12.6	-
2	0	0	0	2.4	-
3	0	0	0	7.9	-
4	0	0	0	7.2	-
5	0	0	0	6.9	-
6	0	0	0	5.8	-
7	0	0	0	3.2	-
8	0	0	0	4.3	-
9	0	0	0	7.2	-
10	0	0	0	8.1	0.25
11	0	0	0	8.2	-
12	0	0	0	9	-
13	0	0	0	4.9	-
14	0	0	0	3	-
15	0	0	0	5.6	-
16	0	0	0	11.6	-
17	0	0	0	10.8	-
18	0	0	0	0.2	-
19	0	0	0	4.5	-
20	0	0	0	6.3	0.25
21	0	0	0	3.2	-
22	0	0	0	11.2	-
23	0	0	0	20.8	-
24	0	0	0	13	-
25	0	0	0	10	-
26	0	0	0	3.4	-
27	0	0	0	7.5	-
28	0	0	0	17.5	-
29	0	0	0	12.1	-
30	0	0	0	2.7	0.5
31	0	0	0	12.1	-
32	0	0	0	12.8	-
33	0	0	0	9.9	-
34	0	0	0	9.3	-
35	0	0	0	7.2	-
36	0	0	0	6.6	-
37	0	0	0	2.2	-
38	0	0	0	3.6	-
39	0	0	0	14.5	-
40	0	0	0	10.6	0.5
41	0	0	0	3.2	-
42	0	0	0	3.6	-
43	0	0	0	8.5	-
44	0	0	0	9	-
45	0	0	0	7.2	-
46	0	0	0	3.5	-
47	0	0	0	5.5	-
48	0	0	0	1.9	-
49	0	0	0	12.5	-
50	0	0	0	10.9	0.25
51	0	0	0	12.6	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUCL-1					
16-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	2.2	-
53	0	0	0	6.1	-
54	0	0	0	8	-
55	0	0	0	4.2	-
56	0	0	0	9.2	-
57	0	0	0	12	-
58	0	0	0	6.9	-
59	0	0	0	9	-
60	0	0	0	6.1	0.25
61	0	0	0	6.4	-
62	0	0	0	8	-
63	0	0	0	3.9	-
64	0	0	0	6.2	-
65	0	0	0	6.2	-
66	0	0	0	2.2	-
67	0	0	0	8.6	-
68	0	0	0	8	-
69	0	0	0	10.1	-
70	0	0	0	2.5	0.5
71	0	0	0	5.3	-
72	0	0	0	4.2	-
73	0	0	0	7	-
74	0	0	0	10.5	-
75	0	0	0	12.5	-
76	0	0	0	17.8	-
77	0	0	0	2.3	-
78	0	0	0	0.2	-
79	0	0	0	10.4	-
80	0	0	0	3.3	0.25
81	0	0	0	18.8	-
82	0	0	0	6.4	-
83	0	0	0	2.4	-
84	0	0	0	7.1	-
85	0	0	0	17.3	-
86	0	0	0	9.5	-
87	0	0	0	6.2	-
88	0	0	0	8.3	-
89	0	0	0	7.1	-
90	0	0	0	10.6	-
91	0	0	0	6	0.25
92	0	0	0	12.5	-
93	0	0	0	16	-
94	0	0	0	3.5	-
95	0	0	0	7	-
96	0	0	0	6.5	-
97	0	0	0	10.5	-
98	0	0	0	9	-
99	0	0	0	9.9	-
100	0	0	0	6.5	0.75
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.00	0.00	7.79	0.38
Binary Calcite Index (CI)	0.00				
Proportional Calcite Index (CI')	0.00				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUCL-2					
16-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	6	-
2	0	0	0	5.6	-
3	0	0	0	6.7	-
4	0	0	0	8.1	-
5	0	0	0	5.9	-
6	0	0	0	5.4	-
7	0	0	0	4.9	-
8	0	0	0	3.6	-
9	0	0	0	7.2	-
10	0	0	0	4.5	0.25
11	0	0	0	7.5	-
12	0	0	0	7.8	-
13	0	0	0	8.8	-
14	0	0	0	6	-
15	0	0	0	4.7	-
16	0	0	0	8.5	-
17	0	0	0	6.5	-
18	0	0	0	7.4	-
19	0	0	0	5.6	-
20	0	0	0	7	0
21	0	0	0	8.8	-
22	0	0	0	9.3	-
23	0	0	0	4.3	-
24	0	0	0	6.1	-
25	0	0	0	9	-
26	0	0	0	9.1	-
27	0	0	0	8	-
28	0	0	0	8.1	-
29	0	0	0	6	-
30	0	0	0	6.9	-
31	0	0	0	7.2	-
32	0	0	0	10.6	-
33	0	0	0	4.4	-
34	0	0	0	5.7	-
35	0	0	0	9.4	-
36	0	0	0	8.8	-
37	0	0	0	7	-
38	0	0	0	9.9	-
39	0	0	0	6.2	-
40	0	0	0	9	-
41	0	0	0	5.2	-
42	0	0	0	10.4	-
43	0	0	0	13.6	0.25
44	0	0	0	7.9	-
45	0	0	0	14.5	-
46	0	0	0	4.2	-
47	0	0	0	14	0.5
48	0	0	0	3.5	0.25
49	0	0	0	9.4	-
50	0	0	0	12.1	-
51	0	0	0	2.7	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUCL-2					
16-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	4	-
53	0	0	0	7.4	-
54	0	0	0	12.4	-
55	0	0	0	9	-
56	0	0	0	4.5	-
57	0	0	0	10.2	-
58	0	0	0	5.1	-
59	0	0	0	8.8	-
60	0	0	0	7.4	0.5
61	0	0	0	9.8	-
62	0	0	0	7.7	-
63	0	0	0	8.9	-
64	0	0	0	8	-
65	0	0	0	3.7	-
66	0	0	0	5.1	-
67	0	0	0	5.6	-
68	0	0	0	4.1	-
69	0	0	0	3.6	-
70	0	0	0	5.5	0.25
71	0	0	0	4	-
72	0	0	0	8.4	-
73	0	0	0	5.5	-
74	0	0	0	6.9	-
75	0	0	0	11.6	-
76	0	0	0	10.4	-
77	0	0	0	6.5	-
78	0	0	0	5.1	-
79	0	0	0	5.4	-
80	0	0	0	5.9	0
81	0	0	0	10.4	-
82	0	0	0	6.5	-
83	0	0	0	6.3	-
84	0	0	0	7	-
85	0	0	0	6.3	-
86	0	0	0	6.2	-
87	0	0	0	3.1	-
88	0	0	0	8.2	-
89	0	0	0	5.5	-
90	0	0	0	7.7	0
91	0	0	0	15.4	-
92	0	0	0	9.3	-
93	0	0	0	18.5	-
94	0	0	0	6.6	-
95	0	0	0	7	-
96	0	0	0	2.6	-
97	0	0	0	7.2	-
98	0	0	0	6.9	-
99	0	0	0	12.2	-
100	0	0	0	14	0.75
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.00	0.00	7.46	0.28
Binary Calcite Index (CI)	0.00				
Proportional Calcite Index (CI')	0.00				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUCL-3					
16-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	7	-
2	0	0	0	1.5	-
3	0	0	0	6	-
4	0	0.1	1	10	-
5	0	0	0	2.6	-
6	0	0	0	6.7	-
7	0	0	0	2	-
8	0	0	0	6.8	-
9	0	0	0	11.3	-
10	0	0	0	8	0
11	0	0	0	10.3	-
12	0	0	0	13.6	-
13	0	0	0	2.3	-
14	0	0	0	6.5	-
15	0	0.1	1	10.8	-
16	0	0	0	4.1	-
17	0	0	0	5	-
18	0	0	0	9.8	-
19	0	0	0	3.8	-
20	0	0	0	6	0.25
21	0	0	0	14.8	-
22	0	0	0	9.2	-
23	0	0	0	8.2	-
24	0	0	0	12.4	-
25	0	0	0	11.5	-
26	0	0.1	1	3.4	-
27	0	0.1	1	10.5	-
28	0	0	0	12	-
29	0	0	0	7	-
30	0	0	0	3.9	0.5
31	0	0	0	6	-
32	0	0	0	1.1	-
33	0	0	0	9.8	-
34	0	0	0	8	-
35	0	0	0	1.1	-
36	0	0	0	5	-
37	0	0	0	8.4	-
38	0	0	0	8	-
39	0	0	0	4.8	-
40	0	0	0	2.9	0.5
41	0	0	0	16	-
42	0	0	0	5.7	-
43	0	0	0	11	-
44	0	0	0	7.1	-
45	0	0	0	10.4	-
46	0	0	0	8	-
47	0	0	0	5.4	-
48	0	0	0	6.4	-
49	0	0	0	4.2	-
50	0	0	0	8.4	0.5
51	0	0	0	7.4	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUCL-3					
16-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	3.6	-
53	0	0	0	2.4	-
54	0	0	0	2.4	-
55	0	0	0	2.5	-
56	0	0	0	4.7	-
57	0	0	0	6.8	-
58	0	0	0	8.1	-
59	0	0	0	4.6	-
60	0	0	0	13	0.5
61	0	0	0	8.2	-
62	0	0	0	4.6	-
63	0	0	0	3.1	-
64	0	0	0	2.5	-
65	0	0	0	8	-
66	0	0	0	5.6	-
67	0	0	0	1.1	-
68	0	0	0	5.6	-
69	0	0	0	3.8	-
70	0	0	0	1.6	0.25
71	0	0	0	2.4	-
72	0	0	0	4.3	-
73	0	0	0	4.1	-
74	0	0	0	1.9	-
75	0	0	0	2.1	-
76	0	0	0	4	-
77	0	0	0	4.9	-
78	0	0	0	6	-
79	0	0	0	2	-
80	0	0	0	4	0
81	0	0	0	4.1	-
82	0	0	0	2	-
83	0	0	0	3.8	-
84	0	0	0	4.2	-
85	0	0	0	4.2	-
86	0	0	0	5	-
87	0	0	0	3.6	-
88	0	0	0	5.3	-
89	0	0	0	3.3	-
90	0	0	0	6.2	0.5
91	0	0	0	2.7	-
92	0	0	0	3.1	-
93	0	0	0	2.2	-
94	0	0	0	4.3	-
95	0	0	0	4.9	-
96	0	0	0	3.4	-
97	0	0	0	4.4	-
98	0	0	0	5.5	-
99	0	0	0	10	-
100	0	0	0	4.2	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.00	0.04	5.86	0.33
Binary Calcite Index (CI)	0.04				
Proportional Calcite Index (CI')	0.00				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUNGD-1					
15-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.4	1	8.5	-
2	0	0.1	1	6	-
3	0	0.5	1	13.5	-
4	0	0.6	1	10.5	-
5	0	0.2	1	8.5	-
6	0	0	0	5.5	-
7	0	0.4	1	10	-
8	0	0.8	1	12	-
9	0	0.3	1	6.5	0.25
10	0	0.8	1	10	-
11	0	0.5	1	9.5	-
12	0	0.6	1	13	-
13	0	0.5	1	8	-
14	0	0.7	1	8.5	-
15	0	0.6	1	9	-
16	0	0.4	1	11	-
17	0	0.1	1	6.5	-
18	0	0	0	6.5	-
19	0	0.1	1	13	-
20	0	0.5	1	11	0.75
21	0	0.6	1	9	-
22	0	0.3	1	5	-
23	0	0	0	6	-
24	0	0.7	1	7.5	-
25	0	0.4	1	8	-
26	0	0.5	1	8	-
27	0	0.1	1	6.5	-
28	0	0	0	7	-
29	0	0	0	9.5	-
30	0	0.1	1	7.5	0.25
31	0	0.7	1	9.5	-
32	0	0	0	8	-
33	0	0.1	1	9	-
34	0	0.2	1	9.5	-
35	0	0	0	3.5	-
36	0	0.2	1	13	-
37	0	0.1	1	19	-
38	0	0	0	9.5	-
39	0	0	0	7	-
40	0	0	0	5.5	-
41	0	0.1	1	9.5	0.25
42	0	0.1	1	7	-
43	0	0.2	1	9	-
44	0	0	0	9	-
45	0	0	0	9	-
46	0	0.2	1	8	-
47	0	0	0	12.5	-
48	0	0	0	7	-
49	0	0.2	1	13.5	0.5
50	0	0	0	4	-
51	0	0.1	1	7.5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUNGD-1					
15-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	4.5	-
53	0	0	0	9	-
54	0	0.1	1	12.5	-
55	0	0.2	1	13	-
56	0	0	0	9.5	-
57	0	0.1	1	8	-
58	0	0	0	9	-
59	0	0.1	1	10	-
60	0	0	0	2.5	-
61	0	0	0	3.5	-
62	0	0.1	1	12.5	-
63	0	0	0	2.5	-
64	0	0	0	3	0.5
65	0	0	0	7	-
66	0	0	0	14.5	-
67	0	0.5	1	16.5	-
68	0	0	0	5.5	-
69	0	0	0	6	-
70	0	0.1	1	9.5	0.5
71	0	0	0	5.5	-
72	0	0.1	1	8	-
73	0	0	0	5	-
74	0	0.3	1	21	-
75	0	0.1	1	8	-
76	0	0	0	7	-
77	0	0.4	1	15	-
78	0	0.1	1	9	-
79	0	0	0	7	-
80	0	0.1	1	8	0.5
81	0	0.7	1	15	-
82	0	0	0	9	-
83	0	0.1	1	5.5	-
84	0	0.9	1	7	-
85	0	0.1	1	8	-
86	0	0.2	1	7	-
87	0	0	0	9	-
88	0	0.1	1	9	-
89	0	0.9	1	7	0
90	0	0.1	1	9	-
91	0	0	0	6.5	-
92	0	0	0	6	-
93	0	0	0	8	-
94	0	1	1	8	-
95	0	0.8	1	6	-
96	0	0.2	1	7.5	-
97	0	0.8	1	7.5	-
98	0	0.2	1	7.5	-
99	0	0.1	1	6.5	-
100	0	0.3	1	12	0
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.22	0.64	8.64	0.35
Binary Calcite Index (CI)					0.64
Proportional Calcite Index (CI')					0.22

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUNGD-2					
15-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	4.5	-
2	0	0	0	5	-
3	0	0	0	6.5	-
4	0	0	0	7	-
5	0	0.1	1	7.5	-
6	0	0.1	1	8	-
7	0	0.1	1	9	-
8	0	0.1	1	7	-
9	0	0	0	10.5	-
10	0	0.1	1	6.5	-
11	0	0	0	7	-
12	0	0	0	5.5	-
13	0	0.1	1	9.5	-
14	0	0.1	1	12.5	-
15	0	0	0	5.5	-
16	0	0.1	1	9	-
17	0	0	0	6.5	-
18	0	0	0	7	-
19	0	0	0	7.5	-
20	0	0	0	9.5	-
21	0	0	0	6.5	-
22	0	0.2	1	5.5	-
23	0	0.1	1	7	-
24	0	0.2	1	14	-
25	0	0	0	5.5	0.25
26	0	0.1	1	8.5	0.25
27	0	0.3	1	5.5	0.25
28	0	0	0	5.5	-
29	0	0.3	1	6.5	-
30	0	0	0	6.5	-
31	0	0.1	1	7.5	-
32	0	0.3	1	10	-
33	0	0.3	1	10.5	-
34	0	0.4	1	8.5	-
35	0	0.3	1	11	-
36	0	0	0	2.5	-
37	0	0.4	1	8.5	-
38	0	0	0	7	-
39	0	0	0	7.5	0.25
40	0	0.3	1	9.5	-
41	0	0.4	1	6	-
42	0	0	0	3.5	-
43	0	0.3	1	9.5	-
44	0	0	0	7.5	-
45	0	0.2	1	11.5	-
46	0	0.5	1	10.5	-
47	0	0.2	1	6	-
48	0	0.2	1	13	-
49	0	0.1	1	7	0.25
50	0	0	0	8	-
51	0	0	0	11.5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUNGD-2					
15-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	6	-
53	0	0.1	1	6	-
54	0	0	0	5.5	-
55	0	0	0	8	-
56	0	0	0	8	-
57	0	0.3	1	13	-
58	0	0	0	5.5	-
59	0	0.1	1	8.5	0
60	0	0.1	1	10	-
61	0	0.4	1	15	-
62	0	0.1	1	7	-
63	0	0	0	7	-
64	0	0	0	6	-
65	0	0	0	9	-
66	0	0	0	9	-
67	0	0.1	1	13	-
68	0	0.1	1	10.5	-
69	0	0	0	7	-
70	0	0	0	7	0
71	0	0	0	9	-
72	0	0	0	2.5	-
73	0	0.1	1	7.5	-
74	0	0.1	1	11	-
75	0	0.3	1	26	-
76	0	0.1	1	7	-
77	0	0	0	8	-
78	0	0.1	1	8	-
79	0	0	0	3.5	-
80	0	0	0	5	-
81	0	0	0	5.5	-
82	0	0.1	1	9	0.25
83	0	0	0	6	-
84	0	0.1	1	7	-
85	0	0.1	1	10.5	-
86	0	0.2	1	8	-
87	0	0	0	4.5	-
88	0	0	0	7.5	-
89	0	0	0	5	-
90	0	0.1	1	8	0.5
91	0	0.2	1	10	-
92	0	0.1	1	10	-
93	0	0	0	9.5	-
94	0	0	0	4	-
95	0	0	0	5.5	-
96	0	0	0	6.5	-
97	0	0.1	1	9	-
98	0	0	0	10	-
99	0	0	0	4	0
100	0	0.2	1	7	-
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.09	0.50	7.94	0.20
Binary Calcite Index (CI)					0.50
Proportional Calcite Index (CI')					0.09

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUNGD-3					
15-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	7	-
2	0	0	0	6.5	-
3	0	0	0	7.5	-
4	0	0.1	1	7.5	-
5	0	0	0	5	-
6	0	0	0	5	-
7	0	0	0	2	-
8	0	0	0	3.5	-
9	0	0	0	6	-
10	0	0	0	3.5	0
11	0	0	0	4.5	-
12	0	0	0	6	-
13	0	0	0	4.5	-
14	0	0	0	5.5	-
15	0	0	0	9	-
16	0	0	0	1.5	-
17	0	0	0	8	-
18	0	0	0	11.5	-
19	0	0	0	3	-
20	0	0	0	9.5	0.25
21	0	0	0	3	-
22	0	0	0	4	-
23	0	0	0	5.5	-
24	0	0	0	6.5	-
25	0	0	0	9	-
26	0	0	0	2.5	-
27	0	0	0	9	-
28	0	0	0	9.5	-
29	0	0	0	5.5	-
30	0	0	0	8	0.25
31	0	0	0	7	-
32	0	0	0	4	-
33	0	0	0	3.5	-
34	0	0	0	5	-
35	0	0	0	5	-
36	0	0	0	3.5	-
37	0	0	0	11	-
38	0	0	0	11.5	-
39	0	0	0	3.5	-
40	0	0	0	2.5	0
41	0	0	0	7	-
42	0	0	0	4	-
43	0	0	0	5.5	-
44	0	0	0	5.5	-
45	0	0	0	13	-
46	0	0	0	6	-
47	0	0	0	3	-
48	0	0	0	4	-
49	0	0	0	5	-
50	0	0	0	7	0
51	0	0	0	8	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUNGD-3					
15-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	11	-
53	0	0	0	8.5	-
54	0	0	0	10.5	-
55	0	0	0	6	-
56	0	0	0	4	-
57	0	0	0	4.5	-
58	0	0	0	7	-
59	0	0	0	7	-
60	0	0	0	6	0.5
61	0	0	0	9	-
62	0	0	0	2.5	-
63	0	0	0	4	-
64	0	0	0	7.5	-
65	0	0	0	8.5	-
66	0	0	0	5	-
67	0	0	0	2.5	-
68	0	0	0	5.5	-
69	0	0	0	5	-
70	0	0	0	7.5	0.75
71	0	0	0	6	-
72	0	0	0	4.5	-
73	0	0	0	6.5	-
74	0	0	0	6.5	-
75	0	0	0	4.5	-
76	0	0	0	6.5	-
77	0	0.4	1	12.5	-
78	0	0	0	9	-
79	0	0.3	1	18.5	-
80	0	0	0	5	0
81	0	0	0	3.5	-
82	0	0	0	5	-
83	0	0	0	6	-
84	0	0	0	6	-
85	0	0	0	6	-
86	0	0	0	4.5	-
87	0	0	0	3	-
88	0	0	0	8	-
89	0	0	0	3	-
90	0	0	0	9.5	0
91	0	0	0	5	-
92	0	0	0	3	-
93	0	0	0	7.5	-
94	0	0	0	4	-
95	0	0	0	5	-
96	0	0	0	5	-
97	0	0	0	6	-
98	0	0	0	1	-
99	0	0	0	5.5	-
100	0	0	0	4.5	0.5
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.01	0.03	6.06	0.23
Binary Calcite Index (CI)	0.03				
Proportional Calcite Index (CI')	0.01				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODNGD-1					
15-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.6	1	8	-
2	0	0.4	1	9	-
3	0	0.1	1	9	-
4	0	0.1	1	7	-
5	0	0.4	1	9.5	-
6	0	0	0	6	-
7	0	0.4	1	12	-
8	0	0.1	1	10	-
9	0	0.4	1	22	-
10	0	0.1	1	8.5	0
11	0	0	0	5.5	-
12	0	0.2	1	10.5	-
13	0	0	0	17.5	-
14	0	0	0	6	-
15	0	0.1	1	9	-
16	0	0.2	1	13	-
17	0	0	0	2.5	-
18	0	0.1	1	9.5	-
19	0	0.2	1	18	-
20	0	0.1	1	5	0.25
21	0	0	0	5	-
22	0	0.1	1	7.5	-
23	0	0	0	6	-
24	0	0.1	1	10	-
25	0	0.2	1	12.5	-
26	0	0	0	5	-
27	0	0	0	5.5	-
28	0	0	0	4	-
29	0	0	0	5.5	-
30	0	0.2	1	11	0.5
31	0	0	0	14	-
32	0	0	0	5	-
33	0	0.1	1	6	-
34	0	0	0	6	-
35	0	0.1	1	9.5	-
36	0	0	0	4.5	-
37	0	0.3	1	12	-
38	0	0	0	1	-
39	0	0.2	1	8.5	-
40	0	0.3	1	9	0.25
41	0	0	0	9	-
42	0	0.3	1	10.5	-
43	0	0.2	1	9.5	-
44	0	0.1	1	7.5	-
45	0	0	0	7	-
46	0	0.4	1	5	-
47	0	0.2	1	8	-
48	0	0	0	7	-
49	0	0	0	8	-
50	0	0	0	9	0.25
51	0	0	0	7	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODNGD-1					
15-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	5.5	-
53	0	0.2	1	8	-
54	0	0	0	7	-
55	0	0	0	10.5	-
56	0	0	0	4	-
57	0	0	0	10	-
58	0	0.2	1	13.5	-
59	0	0.2	1	6.5	-
60	0	0	0	5	0.5
61	0	0	0	8.5	-
62	0	0	0	7.5	-
63	0	0	0	3	-
64	0	0	0	7	-
65	0	0.1	1	8.5	-
66	0	0	0	2.5	-
67	0	0.1	1	8.5	-
68	0	0.1	1	15	-
69	0	0.2	1	12	-
70	0	0	0	4	-
71	0	0.4	1	5.5	-
72	0	0	0	7	0
73	0	0	0	7.5	-
74	0	0	0	4	-
75	0	0.1	1	8	-
76	0	0.1	1	14	-
77	0	0.4	1	11	-
78	0	0	0	9	-
79	0	0	0	5	-
80	0	0.1	1	5	0.25
81	0	0	0	9	-
82	0	0.2	1	6	-
83	0	0	0	6	-
84	0	0.1	1	7	-
85	0	0.3	1	10	-
86	0	0	0	8.5	-
87	0	0	0	3	-
88	0	0.1	1	7	-
89	0	0.1	1	6.5	-
90	0	0	0	7	0
91	0	0.1	1	13	-
92	0	0.1	1	10	-
93	0	0	0	5.5	-
94	0	0.2	1	5	-
95	0	0.2	1	10.5	-
96	0	0.1	1	6.5	-
97	0	0	0	4.5	-
98	0	0.3	1	7	-
99	0	0.7	1	7	-
100	0	0.4	1	8	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.11	0.54	8.02	0.23
Binary Calcite Index (CI)	0.54				
Proportional Calcite Index (CI')	0.11				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODNGD-2					
15-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.2	1	8	-
2	0	0.1	1	12	-
3	0	0.2	1	7.5	-
4	0	0.1	1	10	-
5	0	0.1	1	7	-
6	0	0	0	9	-
7	0	0.1	1	8	-
8	0	0	0	0.5	-
9	0	0.1	1	7.5	-
10	0	0.2	1	9.5	-
11	0	0	0	11	0.25
12	0	0.1	1	8	-
13	0	0.4	1	7	-
14	0	0.1	1	5.5	-
15	0	0	0	8.5	-
16	0	0.4	1	19	-
17	0	0.4	1	6	-
18	0	0	0	3	-
19	0	0.3	1	9	0.25
20	0	0	0	12.5	-
21	0	0	0	3.5	-
22	0	0.4	1	7.5	-
23	0	0	0	5	-
24	0	0.2	1	5	-
25	0	0.2	1	6.5	-
26	0	0	0	6	-
27	0	0	0	6.5	-
28	0	0	0	9	-
29	0	0.4	1	11	-
30	0	0.3	1	15	0.25
31	0	0	0	5	-
32	0	0	0	13	-
33	0	0.5	1	8	-
34	0	0	0	6	-
35	0	0	0	4.5	-
36	0	0	0	6.5	-
37	0	0.1	1	6.5	-
38	0	0.1	1	10	-
39	0	0.1	1	4.5	-
40	0	0.1	1	12	0.25
41	0	0.1	1	10	-
42	0	0	0	8.5	-
43	0	0	0	5.5	-
44	0	0	0	6	-
45	0	0.3	1	6.5	-
46	0	0	0	6	-
47	0	0.2	1	11	-
48	0	0	0	7	-
49	0	0.1	1	7	-
50	0	0.2	1	12	0.25
51	0	0.1	1	8.4	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODNGD-2					
15-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	5	-
53	0	0	0	3	-
54	0	0.1	1	8	-
55	0	0	0	7	-
56	0	0.1	1	10.5	-
57	0	0	0	8.5	-
58	0	0.3	1	8	-
59	0	0.4	1	11.5	0.25
60	0	0	0	8.5	-
61	0	0.1	1	8	-
62	0	0.2	1	7	-
63	0	0.2	1	9	-
64	0	0.6	1	7.5	-
65	0	0.2	1	8.5	-
66	0	0.2	1	8.5	-
67	0	0.3	1	4	-
68	0	0	0	4.5	-
69	0	0.1	1	8.5	-
70	0	0.4	1	9	-
71	0	0.8	1	11.5	0.25
72	0	0	0	10	-
73	0	0.1	1	6.5	-
74	0	0.1	1	9.5	-
75	0	0.4	1	9	-
76	0	0.3	1	10	-
77	0	0.1	1	9	-
78	0	0.2	1	9.5	-
79	0	0	0	9	-
80	0	0.3	1	9	0.5
81	0	0	0	8	-
82	0	0.1	1	6.5	-
83	0	0.4	1	10	-
84	0	0	0	6	-
85	0	0	0	6	-
86	0	0	0	9	-
87	0	0.3	1	12	-
88	0	0	0	10	-
89	0	0	0	4	-
90	0	0.3	1	11	0
91	0	0.5	1	10.5	-
92	0	0.1	1	9	-
93	0	0.1	1	7	-
94	0	0	0	8	-
95	0	0.1	1	9.5	-
96	0	0	0	6.5	-
97	0	0.1	1	8.5	-
98	0	0	0	5	-
99	0	0.2	1	8	-
100	0	0.1	1	9.5	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.14	0.62	8.09	0.25
Binary Calcite Index (CI)					0.62
Proportional Calcite Index (CI')					0.14

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODNGD-3					
15-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.1	1	18.5	-
2	0	0.2	1	8.5	-
3	0	0	0	7	-
4	0	0	0	10	-
5	0	0	0	5	-
6	0	0	0	8	-
7	0	0	0	6	-
8	0	0	0	6	-
9	0	0	0	7	-
10	0	0	0	8	0
11	0	0.3	1	12	-
12	0	0	0	5.5	-
13	0	0	0	8	-
14	0	0	0	8	-
15	0	0	0	2.5	-
16	0	0	0	9.5	-
17	0	0.2	1	8	-
18	0	0.1	1	10	-
19	0	0.2	1	12	-
20	0	0	0	9.5	0.25
21	0	0	0	11	-
22	0	0	0	5	-
23	0	0.3	1	12	-
24	0	0.1	1	9.5	-
25	0	0.1	1	8.5	-
26	0	0.2	1	15	-
27	0	0.1	1	8	-
28	0	0	0	6	-
29	0	0.4	1	13	0.25
30	0	0.3	1	10	-
31	0	0.3	1	11	-
32	0	0.1	1	13	-
33	0	0.3	1	8	-
34	0	0	0	10.5	-
35	0	0	0	7	-
36	0	0.1	1	8.5	-
37	0	0.1	1	13.5	-
38	0	0.2	1	8.5	-
39	0	0	0	4.5	-
40	0	0.3	1	8.5	0.25
41	0	0.3	1	9.5	-
42	0	0	0	8.5	-
43	0	0.5	1	15	-
44	0	0.3	1	14	-
45	0	0.4	1	10.5	-
46	0	0.4	1	8	-
47	0	0.2	1	7	-
48	0	0.2	1	9	-
49	0	0.1	1	9	-
50	0	0	0	13	0.25
51	0	0.1	1	9	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODNGD-3					
15-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0.1	1	9	-
53	0	0.2	1	17	-
54	0	0.1	1	12	-
55	0	0.1	1	6	-
56	0	0.1	1	8	-
57	0	0	0	6	-
58	0	0.1	1	10.5	-
59	0	0.1	1	10.5	0.25
60	0	0.2	1	7.5	-
61	0	0	0	4.5	-
62	0	0.2	1	14	-
63	0	0	0	8	-
64	0	0.1	1	9	-
65	0	0	0	6.5	-
66	0	0.2	1	8.5	-
67	0	0.2	1	12.5	-
68	0	0	0	6	-
69	0	0	0	7	-
70	0	0.2	1	14	0.25
71	0	0.3	1	8.5	-
72	0	0	0	6	-
73	0	0	0	6	-
74	0	0.2	1	13	-
75	0	0.2	1	9	-
76	0	0.1	1	13	-
77	0	0	0	6	-
78	0	0.1	1	11	-
79	0	0.1	1	7.5	0
80	0	0.2	1	7.5	-
81	0	0.1	1	9	-
82	0	0	0	4.5	-
83	0	0.1	1	4	-
84	0	0.3	1	11	-
85	0	0	0	7	-
86	0	0.1	1	11	-
87	0	0	0	20	-
88	0	0	0	8	-
89	0	0	0	5	-
90	0	0.1	1	8.5	0.25
91	0	0.2	1	11	-
92	0	0	0	6	-
93	0	0.2	1	11.7	-
94	0	0	0	6.5	-
95	0	0	0	10	-
96	0	0.2	1	10	-
97	0	0.1	1	9.5	-
98	0	0.1	1	10.5	-
99	0	0	0	5.1	-
100	0	0	0	7.5	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.11	0.59	9.12	0.20
Binary Calcite Index (CI)	0.59				
Proportional Calcite Index (CI')	0.11				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_MP1-1					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.3	1	4	-
2	0	0	0	6	-
3	0	0.2	1	7	-
4	0	0.1	1	8	-
5	0	0.1	1	10	-
6	0	0	0	9	-
7	0	0	0	5	-
8	0	0	0	6	-
9	0	0.3	1	10	-
10	0	0	0	9	0.25
11	0	0	0	10	-
12	0	0.3	1	3	-
13	0	0	0	1	-
14	0	0	0	5.5	-
15	0	0	0	7.5	-
16	0	0	0	8.5	-
17	0	0.1	1	8	-
18	0	0.1	1	8.5	-
19	0	0	0	9	-
20	0	0	0	13.5	0
21	0	0	0	10	-
22	0	0.4	1	11	-
23	0	0.5	1	11	-
24	0	0	0	10.5	-
25	0	0	0	10.5	-
26	0	0	0	6.5	-
27	0	0.5	1	11.5	-
28	0	0	0	7	-
29	0	0.4	1	18	-
30	0	0.4	1	13	0.5
31	0	0.2	1	9	-
32	0	0.6	1	12	-
33	0	0.3	1	11	-
34	0	0.2	1	11.9	-
35	0	0.5	1	12	-
36	0	0.3	1	9	-
37	0	0.2	1	13	-
38	0	0.2	1	8	-
39	0	0	0	4	-
40	0	0	0	8	0.25
41	0	0.1	1	6.5	-
42	0	0	0	10	-
43	0	0.2	1	7.5	-
44	0	0.3	1	1.1	-
45	0	0	0	10	-
46	0	0	0	8.5	-
47	0	0.1	1	6	-
48	0	0	0	9	-
49	0	0	0	6.5	-
50	0	0	0	6.5	0.25
51	0	0	0	7	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_MP1-1					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	14	-
53	0	0	0	9	-
54	0	0.5	1	17	-
55	0	0.1	1	6.5	-
56	0	0	0	6	-
57	0	0.3	1	9	-
58	0	0	0	8	-
59	0	0.2	1	10	-
60	0	0.4	1	18	0.5
61	0	0.3	1	8	-
62	0	0	0	6	-
63	0	0.1	1	8	-
64	0	0.2	1	10.9	-
65	0	0.1	1	11	-
66	0	0	0	8	-
67	0	0	0	6	-
68	0	0	0	8	-
69	0	0	0	7.5	-
70	0	0.1	1	2.5	0
71	0	0.1	1	8	-
72	0	0	0	9	-
73	0	0.2	1	10.5	-
74	0	0	0	10	-
75	0	0	0	3	-
76	0	0.1	1	11.1	-
77	0	0	0	8	-
78	0	0	0	9	-
79	0	0	0	10	-
80	0	0	0	7	0.25
81	0	0	0	6	-
82	0	0.1	1	8.5	-
83	0	0	0	9	-
84	0	0.1	1	12	-
85	0	0	0	9.5	-
86	0	0.3	1	11	-
87	0	0	0	9	-
88	0	0.5	1	2.5	-
89	0	0	0	6	-
90	0	0.4	1	13.5	0.25
91	0	0	0	8	-
92	0	0	0	1	-
93	0	0	0	10	-
94	0	0.3	1	24	-
95	0	0	0	7.5	-
96	0	0	0	7	-
97	0	0	0	10	-
98	0	0	0	10.5	-
99	0	0	0	9.5	-
100	0	0	0	9.5	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.11	0.44	8.77	0.25
Binary Calcite Index (CI)	0.44				
Proportional Calcite Index (CI')	0.11				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_MP1-2					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	10	-
2	0	0	0	2.5	-
3	0	0.1	1	13.1	-
4	0	0	0	10	-
5	0	0	0	8	-
6	0	0.4	1	12.5	-
7	0	0.4	1	29.5	-
8	0	0	0	9	-
9	0	0	0	3.5	-
10	0	0	0	10	0
11	0	0	0	4	-
12	0	0.3	1	22	-
13	0	0.1	1	3.5	-
14	0	0	0	6	-
15	0	0	0	11	-
16	0	0.1	1	20	-
17	0	0	0	7.5	-
18	0	0	0	7	-
19	0	0.1	1	25.5	-
20	0	0.2	1	14	0.25
21	0	0	0	9	-
22	0	0	0	7	-
23	0	0.2	1	6	-
24	0	0	0	2.5	-
25	0	0	0	7	-
26	0	0.2	1	9	-
27	0	0.2	1	12	-
28	0	1	1	9	-
29	0	1	1	2	-
30	0	0.1	1	4	0.25
31	0	0	0	5	-
32	0	0.3	1	10.5	-
33	0	0.1	1	7.5	-
34	0	0	0	1.5	-
35	0	0	0	9.5	-
36	0	0	0	17.5	-
37	0	0.2	1	28	-
38	0	0.4	1	13	-
39	0	0.3	1	21	-
40	0	0.1	1	11	0.25
41	0	0	0	4.5	-
42	0	0	0	13.5	-
43	0	0.1	1	15	-
44	0	0	0	5	-
45	0	0	0	11.5	-
46	0	0	0	6.5	-
47	0	0.1	1	6	-
48	0	0	0	1.5	-
49	0	0.3	1	11	-
50	0	0.1	1	35	0.25
51	0	0.2	1	5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_MP1-2					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0.1	1	17	-
53	0	0.2	1	10	-
54	0	0	0	4	-
55	0	0	0	14	-
56	0	0	0	2.5	-
57	0	0	0	4.5	-
58	0	0.4	1	3	-
59	0	0.3	1	10	-
60	0	0	0	2.5	0.25
61	0	0	0	2.5	-
62	0	0.1	1	5	-
63	0	0	0	9.5	-
64	0	0	0	4.5	-
65	0	0	0	6.6	-
66	0	0	0	6.5	-
67	0	0.1	1	4	-
68	0	0	0	5	-
69	0	0.2	1	25	-
70	0	0.4	1	25	-
71	0	0.2	1	10.5	-
72	0	0	0	3.5	-
73	0	0	0	11	-
74	0	0	0	3	-
75	0	0.1	1	8	-
76	0	0	0	5.5	-
77	0	0	0	5	-
78	0	0	0	8	-
79	0	0	0	10	-
80	0	0.3	1	8.5	0.25
81	0	0	0	30	-
82	0	0	0	7	-
83	0	0.2	1	12.5	-
84	0	0.1	1	12	-
85	0	0	0	11	-
86	0	0	0	6	-
87	0	0	0	12	-
88	0	0	0	9.5	-
89	0	0	0	6	-
90	0	0.1	1	12	0.25
91	0	0.2	1	13	-
92	0	0.1	1	6	-
93	0	0	0	4.5	-
94	0	0.1	1	7	-
95	0	0	0	2	-
96	0	0	0	5	-
97	0	0	0	7	-
98	0	0	0	28	-
99	0	0.1	1	14	-
100	0	0.1	1	10.5	0.5
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.10	0.44	9.84	0.25
Binary Calcite Index (CI)	0.44				
Proportional Calcite Index (CI')	0.10				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_MP1-3					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	7.5	-
2	0	0	0	5.5	-
3	0	0.1	1	5	-
4	0	0	0	8	-
5	0	0	0	8	-
6	0	0	0	6.5	-
7	0	0	0	4.5	-
8	0	0	0	7.5	-
9	0	0.1	1	5.5	-
10	0	0.1	1	4.5	0.25
11	0	0	0	7.5	-
12	0	0	0	6.5	-
13	0	0	0	6	-
14	0	0.2	1	12	-
15	0	0	0	6	-
16	0	0.1	1	5	-
17	0	0	0	6	-
18	0	0.1	1	7	-
19	0	0	0	7	-
20	0	0	0	6	0.25
21	0	0.2	1	4	-
22	0	0	0	8	-
23	0	0	0	5	-
24	0	0.2	1	8	-
25	0	0	0	6	-
26	0	0.1	1	6	-
27	0	0	0	8	-
28	0	0	0	10	-
29	0	0	0	9.5	-
30	0	0	0	12	0.25
31	0	0	0	7	-
32	0	0.1	1	8	-
33	0	0	0	4	-
34	0	0.1	1	7.5	-
35	0	0	0	8	-
36	0	0	0	6.5	-
37	0	0.1	1	5.5	-
38	0	0.2	1	7.5	-
39	0	0.2	1	27	-
40	0	0.2	1	4.5	0.25
41	0	0	0	7	-
42	0	0	0	8	-
43	0	0.1	1	7.5	-
44	0	0.1	1	8	-
45	0	0	0	9	-
46	0	0.1	1	9	-
47	0	0.1	1	6	-
48	0	0.1	1	7.5	-
49	0	0.1	1	6.5	-
50	0	0.1	1	6	0
51	0	0	0	6	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_MP1-3					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0.2	1	6.5	-
53	0	0	0	11.5	-
54	0	0	0	5	-
55	0	0	0	8	-
56	0	0.2	1	6.5	-
57	0	0.2	1	5.5	-
58	0	0	0	5.5	-
59	0	0	0	3.5	-
60	0	0	0	9.5	0.25
61	0	0.5	1	9.5	-
62	0	0.3	1	9.5	-
63	0	0.1	1	6.5	-
64	0	0.1	1	6	-
65	0	0.1	1	7.5	-
66	0	0	0	3.5	-
67	0	0	0	6	-
68	0	0.1	1	7	-
69	0	0	0	4.5	-
70	0	0	0	6	0
71	0	0	0	10	-
72	0	0	0	5.5	-
73	0	0	0	6	-
74	0	0	0	2	-
75	0	0	0	1	-
76	0	0.1	1	8.5	-
77	0	0.4	1	9.5	-
78	0	0.1	1	6.5	-
79	0	0	0	8	-
80	0	0	0	5	0.25
81	0	0	0	2.5	-
82	0	0.2	1	8.5	-
83	0	0	0	5	-
84	0	0	0	2	-
85	0	0	0	9	-
86	0	0.1	1	7.5	-
87	0	0.2	1	7	-
88	0	0	0	7	-
89	0	0	0	4.5	-
90	0	0.2	1	10	0.25
91	0	0	0	5.5	-
92	0	0	0	5	-
93	0	0.1	1	8	-
94	0	0	0	4	-
95	0	0	0	7	-
96	0	0	0	4.5	-
97	0	0	0	9.5	-
98	0	0	0	7	-
99	0	0	0	9	-
100	0	0	0	4.5	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.06	0.39	6.91	0.20
Binary Calcite Index (CI)	0.39				
Proportional Calcite Index (CI')	0.06				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUSH-1					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	11	-
2	0	0	0	4	-
3	0	0	0	7.5	-
4	0	0	0	12.5	-
5	0	0	0	6	-
6	0	0	0	3.5	-
7	0	0.1	1	5	-
8	0	0	0	5.5	-
9	0	0	0	14	-
10	0	0.2	1	21	0.25
11	0	0	0	7	-
12	0	0	0	10	-
13	0	0	0	10.5	-
14	0	0	0	6	-
15	0	0	0	9.5	-
16	0	0	0	10.5	-
17	0	0.1	1	11.5	-
18	0	0	0	10	-
19	0	0	0	15	-
20	0	0	0	11	0.25
21	0	0.1	1	13.5	-
22	0	0	0	14	-
23	0	0.1	1	12	-
24	0	0	0	9.5	-
25	0	0	0	12	-
26	0	0.2	1	8.5	-
27	0	0	0	8.5	-
28	0	0	0	8	-
29	0	0	0	8.5	-
30	0	0	0	13	0.5
31	0	0.1	1	10.5	-
32	0	0	0	6	-
33	0	0	0	8.5	-
34	0	0	0	10	-
35	0	0	0	3	-
36	0	0.1	1	11	-
37	0	0	0	10	-
38	0	0	0	4	-
39	0	0.2	1	17	-
40	0	0	0	7	0
41	0	0	0	5	-
42	0	0	0	6	-
43	0	0	0	7.5	-
44	0	0	0	5	-
45	0	0	0	12.5	-
46	0	0	0	7.5	-
47	0	0	0	10	-
48	0	0	0	11	-
49	0	0	0	7.5	-
50	0	0	0	10.5	0.25
51	0	0	0	11	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUSH-1					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	11	-
53	0	0	0	9.5	-
54	0	0.1	1	11	-
55	0	0	0	4.5	-
56	0	0.1	1	10	-
57	0	0	0	6.5	-
58	0	0	0	8.5	-
59	0	0.1	1	11	-
60	0	0	0	4.5	0.25
61	0	0	0	8.5	-
62	0	0	0	4.5	-
63	0	0	0	24	-
64	0	0	0	18.5	-
65	0	0	0	5.5	-
66	0	0	0	15	-
67	0	0.1	1	13.5	-
68	0	0	0	8	-
69	0	0.1	1	16	-
70	0	0.1	1	15.5	0.25
71	0	0	0	13.5	-
72	0	0	0	10	-
73	0	0	0	11	-
74	0	0.1	1	7.5	-
75	0	0	0	11.5	-
76	0	0	0	5	-
77	0	0	0	4	-
78	0	0.1	1	9	-
79	0	0	0	7.5	-
80	0	0.1	1	6	0
81	0	0	0	8.5	-
82	0	0	0	6	-
83	0	0	0	10	-
84	0	0	0	12.5	-
85	0	0	0	9	-
86	0	0	0	15	-
87	0	0.1	1	9	-
88	0	0.1	1	9	-
89	0	0	0	15	-
90	0	0	0	3.5	0.25
91	0	0	0	3	-
92	0	0	0	9.5	-
93	0	0	0	8	-
94	0	0.1	1	5.5	-
95	0	0	0	12	-
96	0	0	0	4.5	-
97	0	0	0	8.5	-
98	0	0	0	11.5	-
99	0	0	0	11	-
100	0	0	0	7.5	0
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.02	0.21	9.48	0.20
Binary Calcite Index (CI)	0.21				
Proportional Calcite Index (CI')	0.02				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUSH-2					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.7	1	6	-
2	0	0.1	1	9.5	-
3	0	0	0	6	-
4	0	0.2	1	6	-
5	0	0	0	5.5	-
6	0	0.1	1	3.5	-
7	0	0.6	1	3	-
8	0	0.5	1	7.5	-
9	0	0.1	1	5.5	-
10	0	0.4	1	5.4	0.25
11	0	0	0	9	-
12	0	0.1	1	4.5	-
13	0	0	0	8	-
14	0	0.1	1	8	-
15	0	0.1	1	9	-
16	0	0	0	11	-
17	0	0.1	1	6	-
18	0	0.2	1	14.5	-
19	0	0.1	1	12.5	-
20	0	0	0	3	0
21	0	0	0	15	-
22	0	0	0	5	-
23	0	0	0	6	-
24	0	0.1	1	8.5	-
25	0	0	0	5.5	-
26	0	0.3	1	19	-
27	0	0	0	3.5	-
28	0	0	0	2	-
29	0	0.3	1	9	-
30	0	0	0	4	0
31	0	0	0	15	-
32	0	0	0	12.5	-
33	0	0.1	1	8	-
34	0	0.3	1	9	-
35	0	0.1	1	6	-
36	0	0	0	8	-
37	0	0	0	7.5	-
38	0	0.2	1	13	-
39	0	0	0	7.5	-
40	0	0.2	1	15.5	0.25
41	0	0	0	6	-
42	0	0	0	7	-
43	0	0.1	1	9	-
44	0	0	0	7	-
45	0	0.1	1	15	-
46	0	0	0	13.5	-
47	0	0.2	1	14	-
48	0	0.1	1	15	-
49	0	0.1	1	11	-
50	0	0.2	1	5.5	0
51	0	0	0	6	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUSH-2					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0.1	1	8	-
53	0	0.2	1	7	-
54	0	0.1	1	5	-
55	0	0.2	1	8	-
56	0	0.2	1	11	-
57	0	0.5	1	25.5	-
58	0	0.3	1	11	-
59	0	0.3	1	16	-
60	0	0.7	1	11	0.25
61	0	0	0	12	-
62	0	0.1	1	9	-
63	0	0.1	1	12	-
64	0	0.2	1	13	-
65	0	0.1	1	14	-
66	0	0	0	7.5	-
67	0	0	0	5.5	-
68	0	0	0	10.5	-
69	0	0	0	7	-
70	0	0.1	1	7	0.5
71	0	0	0	7	-
72	0	0	0	9	-
73	0	0.2	1	8.5	-
74	0	0	0	4.5	-
75	0	0	0	13	-
76	0	0.1	1	17	-
77	0	0	0	8	-
78	0	0.1	1	8	-
79	0	0.1	1	9	-
80	0	0	0	6	0
81	0	0.2	1	7.5	-
82	0	0.1	1	17	-
83	0	0	0	7.5	-
84	0	0.1	1	6.5	-
85	0	0	0	11	-
86	0	0.1	1	11	-
87	0	0	0	4	-
88	0	0.1	1	12	-
89	0	0.1	1	12	-
90	0	0	0	8.5	0.75
91	0	0.1	1	8.5	-
92	0	0.1	1	7.5	-
93	0	0.4	1	19	-
94	0	0.2	1	15	-
95	0	0	0	10	-
96	0	0	0	8.5	-
97	0	0	0	6	-
98	0	0	0	6.5	-
99	0	0	0	6	-
100	0	0.2	1	11.5	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.11	0.57	9.17	0.23
Binary Calcite Index (CI)	0.57				
Proportional Calcite Index (CI')	0.11				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUSH-3					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.7	1	5.5	-
2	0	0.1	1	10.5	-
3	0	0.1	1	8.5	-
4	0	0.3	1	8	-
5	0	0.9	1	11.5	-
6	0	0.1	1	9	-
7	0	0.1	1	5	-
8	0	0	0	14.5	-
9	0	0.5	1	5	-
10	0	0.1	1	12	0.25
11	0	0.4	1	11.5	-
12	0	0.1	1	8.5	-
13	0	0	0	5	-
14	0	0.1	1	14.5	-
15	0	0.1	1	13	-
16	0	0	0	4.5	-
17	0	0.8	1	15	-
18	0	0.3	1	18	-
19	0	0.1	1	9	-
20	0	0	0	7	0.25
21	0	0	0	5	-
22	0	0	0	10	-
23	0	0	0	5.5	-
24	0	0	0	15	-
25	0	0.4	1	5	-
26	0	0.1	1	10.5	-
27	0	0.1	1	8	-
28	0	0	0	5	-
29	0	0	0	7	-
30	0	0.2	1	14.5	0.5
31	0	0	0	4.5	-
32	0	0	0	11	-
33	0	0	0	1	-
34	0	0.1	1	7	-
35	0	0.4	1	8	-
36	0	0	0	8	-
37	0	0	0	7	-
38	0	0	0	8	-
39	0	0	0	9.5	-
40	0	0	0	7	0
41	0	0.8	1	9	-
42	0	0.2	1	15	-
43	0	0.7	1	9	-
44	0	0.1	1	9	-
45	0	0	0	9	-
46	0	0	0	9	-
47	0	0	0	7	-
48	0	0.6	1	7.5	-
49	0	0	0	6	-
50	0	0.1	1	7.5	0
51	0	0	0	5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUSH-3					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	9.5	-
53	0	0	0	9	-
54	0	0.1	1	9	-
55	0	0	0	5.5	-
56	0	0	0	4.5	-
57	0	0.3	1	7.5	-
58	0	0.2	1	11.5	-
59	0	0	0	4	-
60	0	0.1	1	7.5	0.25
61	0	0.2	1	7.5	-
62	0	0.6	1	10	-
63	0	0.1	1	8.5	-
64	0	0	0	13	-
65	0	0	0	6	-
66	0	0.3	1	12	-
67	0	0.6	1	14	-
68	0	0	0	3.5	-
69	0	0.1	1	9	-
70	0	0	0	8	0.25
71	0	0	0	9	-
72	0	0	0	8	-
73	0	0	0	9.5	-
74	0	0.1	1	11.5	-
75	0	0.1	1	3.5	-
76	0	0	0	10	-
77	0	0.2	1	16	-
78	0	0.1	1	9	-
79	0	0	0	10	-
80	0	0	0	7.5	0.5
81	0	0	0	7.5	-
82	0	0	0	8	-
83	0	0.2	1	8	-
84	0	0.2	1	15	-
85	0	0	0	4.5	-
86	0	0.1	1	5	-
87	0	0	0	10	-
88	0	0	0	6.5	-
89	0	0.1	1	10	-
90	0	0.1	1	9	0.25
91	0	0.2	1	7	-
92	0	0	0	21	-
93	0	0	0	7	-
94	0	0	0	5.5	-
95	0	0	0	6.5	-
96	0	0	0	21	-
97	0	0	0	7	-
98	0	0.1	1	14	-
99	0	0.1	1	9	-
100	0	0	0	7	0
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.13	0.50	8.87	0.23
Binary Calcite Index (CI)	0.50				
Proportional Calcite Index (CI')	0.13				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUKI-1					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	1	1	10	-
2	0	0	0	6.5	-
3	0	0.5	1	8	-
4	0	0.1	1	8	-
5	0	0	0	8	-
6	0	0.1	1	9.5	-
7	0	0	0	6	-
8	0	0	0	4	-
9	0	0	0	12	-
10	0	0	0	106.5	0.25
11	0	0.1	1	10	-
12	0	0.2	1	9	-
13	0	0	0	8.5	-
14	0	0	0	8	-
15	0	0.5	1	12	-
16	0	0	0	7.5	-
17	0	0	0	5	-
18	0	0	0	4.5	-
19	0	0	0	13	-
20	0	0	0	9	0.25
21	0	0	0	9.5	-
22	0	0	0	3	-
23	0	0	0	7	-
24	0	0	0	4	-
25	0	0	0	13	-
26	0	0	0	4	-
27	0	0	0	10.5	-
28	0	0	0	5	-
29	0	0.1	1	12.5	-
30	0	0	0	10	0.25
31	0	0	0	7	-
32	0	0	0	6	-
33	0	0	0	9	-
34	0	0	0	7	-
35	0	0.1	1	8.5	-
36	0	0	0	4	-
37	0	0	0	10.5	-
38	0	0	0	11	-
39	0	0	0	7	-
40	0	0	0	5	0.25
41	0	0	0	5	-
42	0	0	0	4.5	-
43	0	0	0	12	-
44	0	0	0	7	-
45	0	0	0	7.5	-
46	0	0	0	7.5	-
47	0	0	0	9.5	-
48	0	0.1	1	9.5	-
49	0	0	0	10	-
50	0	0	0	14	0.25
51	0	0	0	9	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUKI-1					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	7.5	-
53	0	0.1	1	10	-
54	0	0.2	1	5	-
55	0	0	0	9	-
56	0	0	0	9.5	-
57	0	0	0	7.5	-
58	0	0	0	11.5	-
59	0	0	0	7	-
60	0	0	0	10.5	0.25
61	0	0	0	13	-
62	0	0	0	18.5	-
63	0	0.2	1	11	-
64	0	0	0	9	-
65	0	0.1	1	6	-
66	0	0	0	4.5	-
67	0	0.1	1	9.5	-
68	0	0	0	10	-
69	0	0	0	9.1	-
70	0	0	0	12.5	0
71	0	0.1	1	4	-
72	0	0.2	1	21	-
73	0	0.3	1	8.5	-
74	0	0	0	9	-
75	0	0	0	6	-
76	0	0.2	1	5	-
77	0	0	0	5.5	-
78	0	0	0	12	-
79	0	0.1	1	4.5	-
80	0	0	0	11	0.25
81	0	0	0	7	-
82	0	0	0	6.5	-
83	0	0.1	1	6	-
84	0	0	0	5	-
85	0	0	0	5	-
86	0	0.1	1	15	-
87	0	0	0	4.5	-
88	0	0	0	7	-
89	0	0	0	3	-
90	0	0	0	11	0
91	0	0	0	6.5	-
92	0	0	0	10	-
93	0	0	0	7	-
94	0	0	0	8.5	-
95	0	0	0	15	-
96	0	0.2	1	12	-
97	0	0	0	5.5	-
98	0	0	0	11	-
99	0	0	0	6	-
100	0	0.1	1	6	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.05	0.24	9.39	0.20
Binary Calcite Index (CI)	0.24				
Proportional Calcite Index (CI')	0.05				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUKI-2					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	4	-
2	0	0.1	1	5	-
3	0	0.1	1	4.5	-
4	0	0	0	5.5	-
5	0	0	0	10	-
6	0	0	0	9.5	-
7	0	0	0	6.5	-
8	0	0.2	1	10.5	-
9	0	0.3	1	19	-
10	0	0.1	1	16	0.25
11	0	0	0	5	-
12	0	0.1	1	20	-
13	0	0	0	7	-
14	0	0	0	7	-
15	0	0.1	1	17	-
16	0	0.1	1	5	-
17	0	0.4	1	17	-
18	0	0	0	6	-
19	0	0	0	4.5	-
20	0	0	0	5	0
21	0	0	0	9	-
22	0	0	0	9	-
23	0	0.3	1	13	-
24	0	0.5	1	17	-
25	0	0.8	1	17	-
26	0	0	0	7	-
27	0	0.1	1	13	-
28	0	0	0	7	-
29	0	0	0	9.5	-
30	0	0.4	1	12	0
31	0	0.2	1	14	-
32	0	0.1	1	13	-
33	0	0.4	1	16	-
34	0	0	0	3	-
35	0	0	0	7	-
36	0	0	0	8.5	-
37	0	0	0	4	-
38	0	0.3	1	17	-
39	0	0.3	1	12	-
40	0	0.2	1	11	0.75
41	0	0	0	7.5	-
42	0	0	0	4	-
43	0	0	0	7	-
44	0	0	0	10	-
45	0	0	0	4	-
46	0	0.4	1	5	-
47	0	0	0	11	-
48	0	0.1	1	8	-
49	0	0.3	1	11	-
50	0	0.1	1	9.5	0
51	0	0.3	1	19	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUKI-2					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	13	-
53	0	0	0	5.5	-
54	0	0	0	7.5	-
55	0	0.2	1	9	-
56	0	0.3	1	13	-
57	0	0	0	9	-
58	0	0	0	6	-
59	0	0	0	21	-
60	0	0	0	7	0.5
61	0	0.1	1	12	-
62	0	0.1	1	12	-
63	0	0	0	8	-
64	0	0.2	1	16	-
65	0	0	0	9	-
66	0	0.1	1	11	-
67	0	0.1	1	17	-
68	0	0.1	1	13	-
69	0	0.1	1	12	-
70	0	0	0	10.5	0.25
71	0	0.9	1	18	-
72	0	0	0	16	-
73	0	0.1	1	17	-
74	0	0	0	4.5	-
75	0	0.3	1	9	-
76	0	0.1	1	10	-
77	0	0.1	1	10	-
78	0	0	0	6	-
79	0	0.2	1	7.5	-
80	0	0	0	10	0.25
81	0	0.2	1	11	-
82	0	0	0	8	-
83	0	0	0	6	-
84	0	0.1	1	12	-
85	0	0	0	9	-
86	0	0	0	1.5	-
87	0	0.1	1	7	-
88	0	0	0	12	-
89	0	0.2	1	13.5	-
90	0	0	0	4	0.25
91	0	0	0	6	-
92	0	0	0	10	-
93	0	0.2	1	11	-
94	0	0	0	8	-
95	0	0.2	1	7	-
96	0	0	0	6	-
97	0	0	0	4	-
98	0	0.3	1	12	-
99	0	0	0	4	-
100	0	0	0	7.5	0
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.11	0.47	9.78	0.23
Binary Calcite Index (CI)	0.47				
Proportional Calcite Index (CI')	0.11				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUKI-3					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.2	1	4.5	-
2	0	0	0	8	-
3	0	0	0	9	-
4	0	0	0	12.5	-
5	0	0.2	1	11	-
6	0	0	0	8	-
7	0	0.2	1	15	-
8	0	0.4	1	18	-
9	0	0	0	8	-
10	0	0	0	13	0.5
11	0	0	0	10	-
12	0	0.2	1	8.5	-
13	0	0	0	12.5	-
14	0	0	0	9.5	-
15	0	0.5	1	16	-
16	0	0	0	11	-
17	0	0	0	7	-
18	0	0	0	8	-
19	0	0	0	9.5	-
20	0	0	0	15.5	0.25
21	0	0.6	1	18	-
22	0	0.3	1	16	-
23	0	0	0	11	-
24	0	0	0	8	-
25	0	0	0	9	-
26	0	0	0	7	-
27	0	0	0	16	-
28	0	0.1	1	10	-
29	0	0	0	5	-
30	0	0	0	7	0.5
31	0	0	0	7.5	-
32	0	0	0	5	-
33	0	0	0	13	-
34	0	0.1	1	14	-
35	0	0.1	1	7	-
36	0	0	0	4	-
37	0	0.8	1	4	-
38	0	0.2	1	18	-
39	0	0	0	8	-
40	0	0	0	8	0.25
41	0	0	0	8	-
42	0	0	0	7	-
43	0	0	0	10.5	-
44	0	0	0	12	-
45	0	0	0	6	-
46	0	0	0	14	-
47	0	0	0	7	-
48	0	0	0	5	-
49	0	0.2	1	14	-
50	0	0	0	11	0.5
51	0	0	0	13.5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUKI-3					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	10	-
53	0	0	0	6	-
54	0	0.2	1	9	-
55	0	0	0	12	-
56	0	0.2	1	10.5	-
57	0	0	0	16.5	-
58	0	0.2	1	11	-
59	0	-	-	9.5	-
60	0	0	0	6	0.75
61	0	0	0	7.5	-
62	0	0.2	1	8	-
63	0	0	0	7.5	-
64	0	0	0	5	-
65	0	0	0	7	-
66	0	0	0	6.5	-
67	0	0	0	4.5	-
68	0	0	0	12.5	-
69	0	0	0	4.5	-
70	0	0.1	1	7.5	0.25
71	0	0	0	12.5	-
72	0	0.2	1	6	-
73	0	0.2	1	6.5	-
74	0	0.1	1	11	-
75	0	0	0	7	-
76	0	0	0	6.5	-
77	0	0	0	5	-
78	0	0	0	3.5	-
79	0	0.2	1	14.5	-
80	0	0.5	1	13	0
81	0	0	0	10	-
82	0	0	0	7	-
83	0	0	0	6	-
84	0	0	0	9	-
85	0	0	0	13	-
86	0	0	0	9.5	-
87	0	0	0	6.5	-
88	0	0	0	9.5	-
89	0	0.2	1	8	-
90	0	0	0	12	0.5
91	0	0	0	7.5	-
92	0	0.2	1	9	-
93	0	0.2	1	8.5	-
94	0	0	0	7	-
95	0	0	0	5	-
96	0	0	0	6	-
97	0	0	0	2	-
98	0	0	0	1.5	-
99	0	0	0	5	-
100	0	0.2	1	9	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.07	0.28	9.16	0.38
Binary Calcite Index (CI)	0.28				
Proportional Calcite Index (CI')	0.07				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBKS-1					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	16.5	-
2	0	0	0	9.9	-
3	0	0	0	10.2	-
4	0	0	0	13.1	-
5	0	0	0	18.5	-
6	0	0	0	3.7	-
7	0	0	0	8.4	-
8	0	0	0	11.5	-
9	0	0	0	23	-
10	0	0	0	17.5	0.5
11	0	0	0	13	-
12	0	0	0	11.6	-
13	0	0	0	6.6	-
14	0	0	0	9.9	-
15	0	0	0	14.5	-
16	0	0	0	12.5	-
17	0	0	0	7.9	-
18	0	0	0	21.5	-
19	0	0	0	13	-
20	0	0	0	11.5	0.25
21	0	0.3	1	10.5	-
22	0	0.2	1	10.2	-
23	0	0.3	1	2.2	-
24	0	0.1	1	12.5	-
25	0	0	0	7.6	-
26	0	0.4	1	21.5	-
27	0	0	0	9.9	-
28	0	0	0	4.2	-
29	0	0	0	8	-
30	0	0	0	9.2	0.75
31	0	0	0	3.8	-
32	0	0	0	15	-
33	0	0	0	10.5	-
34	0	0	0	14	-
35	0	0	0	12.5	-
36	0	0	0	14.1	-
37	0	0	0	12.4	-
38	0	0	0	11	-
39	0	0	0	9.1	-
40	0	0	0	10.1	0.75
41	0	0	0	4.2	-
42	0	0	0	5.2	-
43	0	0	0	11.3	-
44	0	0	0	11.5	-
45	0	0	0	30.8	-
46	0	0	0	13.4	-
47	0	0	0	10.1	-
48	0	0	0	9.1	-
49	0	0	0	17.5	-
50	0	0	0	3.1	-
51	0	0	0	12.5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBKS-1					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	15	0.5
53	0	0	0	13.1	-
54	0	0	0	13.8	-
55	0	0	0	9.2	-
56	0	0.8	1	17	-
57	0	0.4	1	8.3	-
58	0	0	0	8.7	-
59	0	0	0	10.6	-
60	0	0	0	8.6	0.25
61	0	0	0	10.4	-
62	0	0.8	1	15.4	-
63	0	0	0	5.9	-
64	0	0	0	10.8	-
65	0	0	0	7.9	-
66	0	0	0	8.9	-
67	0	0	0	9	-
68	0	0	0	10.4	-
69	0	0	0	10.5	-
70	0	0	0	10.3	0.25
71	0	0	0	3.4	-
72	0	0	0	8.6	-
73	0	0.5	1	20	-
74	0	0	0	11.6	-
75	0	0	0	8	-
76	0	0	0	10.6	-
77	0	0	0	11.6	-
78	0	0	0	8	-
79	0	0	0	12.9	-
80	0	0	0	9.1	0.25
81	0	0	0	6.9	-
82	0	0	0	8.3	-
83	0	0	0	4.6	-
84	0	0	0	8.8	-
85	0	0	0	8.6	-
86	0	0	0	7.4	-
87	0	0	0	12.1	-
88	0	0	0	10.3	-
89	0	0	0	14.6	-
90	0	0	0	9	0.25
91	0	0	0	5.1	-
92	0	0	0	19	-
93	0	0	0	7.2	-
94	0	0	0	9.2	-
95	0	0	0	7.9	-
96	0	0	0	8.2	-
97	0	0	0	9.5	-
98	0	0	0	9.2	-
99	0	0	0	18.5	-
100	0	0	0	6.3	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.04	0.09	10.9	0.40
Binary Calcite Index (CI)	0.09				
Proportional Calcite Index (CI')	0.04				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBKS-2					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	2	1	1	0.2	-
2	0	0	0	2.8	-
3	0	0	0	5.8	-
4	0	0	0	8.4	-
5	1	0.1	1	3.5	-
6	0	0	0	7	-
7	0	0	0	5.9	-
8	0	0	0	6.1	-
9	0	0.1	1	8.5	-
10	0	0.2	1	11.9	0.5
11	0	0	0	6.4	-
12	0	0	0	9.2	-
13	0	0	0	5.5	-
14	0	0	0	7.5	-
15	0	0	0	18	-
16	0	0	0	3.6	-
17	0	0	0	4.3	-
18	0	0	0	10.4	-
19	0	0	0	5.1	-
20	0	0	0	15.5	0.5
21	0	0	0	0.9	-
22	0	0	0	7.1	-
23	0	0	0	7.9	-
24	0	0	0	5.6	-
25	0	0	0	12.8	-
26	0	0	0	9.5	-
27	0	0.1	1	13.2	-
28	0	0	0	9.5	-
29	0	0	0	7.6	-
30	0	0	0	4.4	0.25
31	0	0	0	5.3	-
32	0	0	0	10	-
33	0	0.1	1	0.1	-
34	1	0.1	1	4	-
35	0	0	0	9.3	-
36	0	0	0	5.3	-
37	0	0	0	6.6	-
38	0	0	0	16.5	-
39	0	0	0	1.6	-
40	0	0	0	11	0.75
41	0	0	0	4.4	-
42	0	0	0	10.1	-
43	0	0	0	3.6	-
44	0	0	0	5.4	-
45	0	0	0	8	-
46	0	0	0	14.1	-
47	0	0	0	11.7	-
48	0	0	0	5.9	-
49	0	0	0	10	-
50	0	0	0	11	0.5
51	0	0	0	6.6	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBKS-2					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	1	0.2	1	4.6	-
53	0	0	0	9.7	-
54	0	0	0	7.6	-
55	0	0	0	4.5	-
56	1	0.3	1	9.1	-
57	1	0.1	1	5	-
58	0	0	0	5.5	-
59	0	0	0	5.1	-
60	1	0.4	1	5.7	0.75
61	0	0	0	5.1	-
62	1	0.7	1	14.8	-
63	0	0.1	1	9.8	-
64	2	0.5	1	8.5	-
65	1	0.7	1	6.5	-
66	0	0	0	12	-
67	1	0.8	1	9.7	-
68	0	0	0	5.5	-
69	2	0.5	1	19.5	-
70	1	0.6	1	10.5	0.5
71	0	0	0	6.3	-
72	1	0.7	1	7.2	-
73	0	0	0	6.3	-
74	0	0.5	1	17.2	-
75	1	0.6	1	16.9	-
76	0	0	0	4.8	-
77	1	0.4	1	9.7	-
78	0	0	0	2.8	-
79	0	0	0	5.3	-
80	1	0.8	1	9.2	0.25
81	0	0.3	1	10.2	-
82	0	0	0	4.8	-
83	0	0	0	5.4	-
84	0	0	0	1.3	-
85	0	0	0	10.5	-
86	0	0	0	4.6	-
87	0	0	0	8.7	-
88	0	0	0	3.9	-
89	0	0	0	8.8	-
90	0	0	0	5.6	0.5
91	0	0	0	11.1	-
92	0	0	0	6.1	-
93	0	0	0	33	-
94	0	0	0	5.3	-
95	0	0	0	1.2	-
96	0	0	0	6.2	-
97	0	0	0	0.2	-
98	0	0.7	1	6.6	-
99	0	0	0	2.4	-
100	0	0	0	10.4	0
Average Cp, Cc, intermediate axis, and Embeddedness	0.20	0.11	0.25	7.75	0.45
Binary Calcite Index (CI)	0.45				
Proportional Calcite Index (CI')	0.31				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBKS-3					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	8.3	-
2	0	0	0	4.2	-
3	0	0	0	7.8	-
4	0	0	0	8.1	-
5	0	0	0	6.5	-
6	0	0	0	4.9	-
7	0	0	0	3.6	-
8	0	0	0	3.8	-
9	0	0	0	5	-
10	0	0	0	17.5	0.75
11	0	0	0	4.6	-
12	0	0	0	4.5	-
13	0	0	0	9.1	-
14	0	0	0	11.3	-
15	0	0	0	19.5	-
16	0	0	0	7	-
17	0	0	0	26	-
18	0	0	0	3.5	-
19	0	0	0	7.2	-
20	0	0	0	11	0.75
21	0	0	0	5.7	-
22	0	0	0	8.4	-
23	0	0	0	26.5	-
24	0	0	0	5.8	-
25	0	0	0	4.9	-
26	0	0	0	11.5	-
27	0	0	0	8	-
28	0	0.1	1	8.4	-
29	0	0	0	2.2	-
30	0	0	0	12.7	-
31	0	0	0	5.5	-
32	0	0	0	4.7	-
33	0	0	0	0.8	-
34	0	0	0	2.6	0
35	0	0	0	4.5	-
36	0	0	0	11.5	-
37	0	0	0	10.9	-
38	0	0	0	10.2	-
39	0	0	0	7.2	-
40	0	0	0	10	0.25
41	0	0	0	4.6	-
42	0	0	0	5	-
43	0	0	0	11	-
44	0	0	0	5	-
45	0	0	0	15.7	-
46	0	0	0	9.1	-
47	0	0	0	5.2	-
48	0	0	0	2.6	-
49	0	0	0	4.6	-
50	0	0	0	9.5	0.75
51	0	0	0	7.1	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBKS-3					
12-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	5.2	-
53	0	0	0	6.4	-
54	0	0	0	17.9	-
55	0	0	0	25	-
56	0	0	0	8.7	-
57	0	0	0	23.5	-
58	0	0	0	5.5	-
59	0	0	0	1.9	-
60	0	0	0	11.5	0.5
61	0	0	0	7.9	-
62	0	0	0	6.7	-
63	0	0	0	6.7	-
64	0	0	0	9.2	-
65	0	0	0	8.3	-
66	0	0	0	4.5	-
67	0	0	0	9.9	-
68	0	0	0	4.6	-
69	0	0	0	-	-
70	0	0	0	5.5	0
71	0	0.2	1	22.5	-
72	0	0	0	6.5	-
73	0	0	0	5.7	-
74	0	0	0	11.5	-
75	0	0	0	17	-
76	0	0	0	26.5	-
77	0	0	0	6.1	-
78	0	0	0	8	-
79	0	0.2	1	17.7	-
80	0	0	0	9.9	0.25
81	0	0	0	4.8	-
82	0	0	0	6.7	-
83	0	0	0	4.8	-
84	0	0	0	8.5	-
85	0	0	0	16.3	-
86	0	0	0	4.9	-
87	0	0	0	3	-
88	0	0	0	10.3	-
89	0	0	0	11.7	-
90	0	0	0	11.3	-
91	0	0	0	24.6	0.75
92	0	0	0	7.7	-
93	0	0	0	7.1	-
94	0	0	0	16.5	-
95	0	0	0	8.2	-
96	0	0	0	5.1	-
97	0	0	0	3	-
98	0	0	0	5.5	-
99	0	0	0	11.9	-
100	0	0	0	4.4	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.01	0.03	9.00	0.43
Binary Calcite Index (CI)	0.03				
Proportional Calcite Index (CI')	0.01				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_SCOUTDS-1					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	7	-
2	0	0	0	6	-
3	0	0.2	1	9	-
4	0	0	0	4.5	-
5	0	0.1	1	18	-
6	0	0	0	7.5	-
7	0	0	0	3	-
8	0	0	0	4	-
9	0	0.2	1	10	-
10	0	0	0	5	0.25
11	0	0	0	10	-
12	0	0	0	7	-
13	0	0	0	6.5	-
14	0	0	0	6	-
15	0	0.3	1	4	-
16	0	0.4	1	15	-
17	0	0	0	6	-
18	0	0	0	6	-
19	0	0	0	6.5	-
20	0	0.1	1	4.5	0.25
21	0	0.6	1	17.5	-
22	0	0.2	1	8.5	-
23	0	0	0	1.5	-
24	0	0.2	1	0.5	-
25	0	0.2	1	20	-
26	0	0	0	6.5	-
27	0	0	0	3	-
28	0	0	0	6	-
29	0	0	0	1	-
30	0	0.1	1	8.5	0.25
31	0	0.1	1	2	-
32	0	0.5	1	8.5	-
33	0	0.2	1	2.5	-
34	0	0.5	1	17.5	-
35	0	0.3	1	7	-
36	0	0.4	1	8.5	-
37	0	-	-	0.2	-
38	0	0.3	1	4.5	-
39	0	0	0	7.5	-
40	0	0.2	1	13	0.25
41	0	0	0	12	-
42	0	0.1	1	11	-
43	0	0.2	1	13	-
44	0	0.1	1	8	-
45	0	0	0	9	-
46	0	0	0	6	-
47	0	0	0	11	-
48	0	0	0	5.5	-
49	0	0	0	6	-
50	0	0	0	10	0
51	0	0	0	10.5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_SCOUTDS-1					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	9	-
53	0	0	0	10	-
54	0	0	0	13	-
55	0	0.1	1	9	-
56	0	0.2	1	9	-
57	0	0.2	1	11.5	-
58	0	0	0	6	-
59	0	0	0	6	-
60	0	0.1	1	6.5	0.25
61	0	0	0	8.5	-
62	0	0.1	1	10	-
63	0	0	0	6	-
64	0	0	0	3	-
65	0	0	0	2	-
66	0	0.2	1	4	-
67	0	0	0	7.5	-
68	0	0	0	10	-
69	0	0	0	2	-
70	0	0	0	3	0
71	0	0	0	4	-
72	0	0	0	3.5	-
73	0	0.2	1	9.5	-
74	0	0	0	2	-
75	0	0	0	6	-
76	0	0	0	11	-
77	0	0.1	1	14.5	-
78	0	0.2	1	10	-
79	0	0	0	6.5	-
80	0	0.2	1	8	0.25
81	0	0.2	1	7	-
82	0	0	0	1.5	-
83	0	0.1	1	8	-
84	0	0.3	1	11.5	-
85	0	0	0	5	-
86	0	0.3	1	5	-
87	0	0.3	1	4.5	-
88	0	0.2	1	10	-
89	0	0.2	1	8.5	-
90	0	0.2	1	12	0.25
91	0	0	0	6	-
92	0	0	0	7	-
93	0	0	0	5	-
94	0	0.4	1	18	-
95	0	0	0	6	-
96	0	0.2	1	4.5	-
97	0	0	0	3	-
98	0	0.2	1	6.5	-
99	0	0	0	7	-
100	0	0	0	7	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.10	0.43	7.46	0.20
Binary Calcite Index (CI)	0.43				
Proportional Calcite Index (CI')	0.10				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_SCOUTDS-2					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	5.5	-
2	0	0	0	11.5	-
3	0	0	0	7	-
4	0	0	0	8.5	-
5	0	0	0	5.5	-
6	0	0	0	7	-
7	0	0	0	7	-
8	0	0.2	1	9	-
9	0	0	0	9.5	-
10	0	0	0	9.5	-
11	0	0	0	10	0.5
12	0	0	0	8	-
13	0	0.1	1	8	-
14	0	0.2	1	5.5	-
15	0	0.1	1	7.5	-
16	0	0.2	1	6	-
17	0	0	0	6	-
18	0	0.2	1	10	-
19	0	0.3	1	5	-
20	0	0.4	1	8.5	-
21	0	0.5	1	9.5	0.5
22	0	0.1	1	6.5	-
23	0	0	0	6	-
24	0	0.1	1	9.5	-
25	0	0.3	1	10.5	-
26	0	0	0	7	-
27	0	0.1	1	10	-
28	0	0.1	1	7.5	-
29	0	0	0	6.5	-
30	0	0	0	10.5	-
31	0	0	0	8.5	0.25
32	0	0	0	6.5	-
33	0	0.1	1	6	-
34	0	0	0	5.5	-
35	0	0.1	1	7.5	-
36	0	0.1	1	5.5	-
37	0	0	0	6	-
38	0	0.1	1	11	-
39	0	0	0	5.5	-
40	0	0.3	1	7.5	-
41	0	0	0	5.5	0
42	0	0.1	1	8.5	-
43	0	0	0	6	-
44	0	0	0	5.5	-
45	0	0.2	1	9	-
46	0	0.1	1	8.5	-
47	0	0.3	1	9	-
48	0	0.2	1	5.5	-
49	0	0.2	1	6	-
50	0	0	0	7	-
51	0	0.1	1	9	0.25

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_SCOUTDS-2					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0.2	1	9	-
53	0	0.3	1	15	-
54	0	0.1	1	8	-
55	0	0.1	1	7	-
56	0	0.1	1	6	-
57	0	0	0	6	-
58	0	0	0	4	-
59	0	0.2	1	6.5	-
60	0	0	0	6	-
61	0	0.1	1	10.5	0.25
62	0	0.1	1	8	-
63	0	0	0	6	-
64	0	0	0	4	-
65	0	0	0	9	-
66	0	0.1	1	8	-
67	0	0.2	1	7	-
68	0	0	0	9	-
69	0	0	0	5.5	-
70	0	0	0	5.5	0
71	0	0.1	1	4.1	-
72	0	0.2	1	6	-
73	0	0.3	1	11	-
74	0	0	0	8	-
75	0	0	0	8	-
76	0	0.1	1	7.5	-
77	0	0	0	6.5	-
78	0	0.1	1	8	-
79	0	0	0	3	-
80	0	0	0	6	-
81	0	0.1	1	10.5	0.5
82	0	0.2	1	8.5	-
83	0	0.2	1	11.5	-
84	0	0.2	1	10	-
85	0	0	0	7	-
86	0	0	0	4	-
87	0	0	0	8	-
88	0	0.1	1	12	-
89	0	0.2	1	5.5	-
90	0	0	0	0.5	-
91	0	0	0	4	-
92	0	0.2	1	9	0.25
93	0	0.1	1	10	-
94	0	0	0	5.5	-
95	0	0.1	1	5	-
96	0	0.1	1	4.5	-
97	0	0	0	10.5	-
98	0	0.1	1	6	-
99	0	0	0	5	-
100	0	0.1	1	8.5	-
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.09	0.53	7.41	0.28
Binary Calcite Index (CI)	0.53				
Proportional Calcite Index (CI')	0.09				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_SCOUTDS-3					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.1	1	11	-
2	0	0.2	1	10	-
3	0	0.2	1	10.5	-
4	0	0	0	8.5	-
5	0	0	0	4.5	-
6	0	0	0	3.5	-
7	0	0	0	11	-
8	0	0	0	4	-
9	0	0	0	9	-
10	0	0.1	1	14.5	0
11	0	0.3	1	16	-
12	0	0	0	7	-
13	0	0	0	0.5	-
14	0	0	0	3.5	-
15	0	0.1	1	11	-
16	0	0	0	7	-
17	0	0	0	3	-
18	0	0	0	8	-
19	0	0.3	1	11	-
20	0	0.2	1	9	0.25
21	0	0	0	3.5	-
22	0	0	0	9	-
23	0	0	0	5.5	-
24	0	0	0	4	-
25	0	0	0	2.5	-
26	0	0.1	1	14.5	-
27	0	0	0	10	-
28	0	0	0	9.5	-
29	0	0.1	1	4	-
30	0	0	0	2.5	0
31	0	0.3	1	5	-
32	0	0	0	5	-
33	0	0.1	1	9.5	-
34	0	0	0	8	-
35	0	0	0	3	-
36	0	0.1	1	7.5	-
37	0	0.1	1	5	-
38	0	0.1	1	11.5	-
39	0	0	0	7	-
40	0	0	0	4	0.25
41	0	0.2	1	11	-
42	0	0.1	1	8	-
43	0	0	0	5	-
44	0	0	0	8	-
45	0	0.1	1	17	-
46	0	0	0	5	-
47	0	0.1	1	8	-
48	0	0.1	1	10	-
49	0	0	0	6.5	-
50	0	0	0	2	0
51	0	0.3	1	10	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_SCOUTDS-3					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0.1	1	5.5	-
53	0	0	0	11.5	-
54	0	0.2	1	8	-
55	0	0	0	6.5	-
56	0	0.1	1	6.5	-
57	0	0.3	1	13	-
58	0	0	0	3.5	-
59	0	0.2	1	9	-
60	0	0.1	1	15	0.5
61	0	0	0	3.5	-
62	0	0	0	4	-
63	0	0	0	11	-
64	0	0.1	1	3.5	-
65	0	0	0	8	-
66	0	0	0	4.5	-
67	0	0.1	1	15	-
68	0	0	0	4	-
69	0	0.1	1	6	-
70	0	0	0	7	0.25
71	0	0.1	1	4	-
72	0	0.1	1	6.5	-
73	0	0.4	1	14	-
74	0	0	0	7	-
75	0	0	0	2.5	-
76	0	0	0	11	-
77	0	0.2	1	4	-
78	0	0	0	12	-
79	0	0	0	6	-
80	0	0.2	1	14	0.25
81	0	0.2	1	9	-
82	0	0	0	2.5	-
83	0	0.1	1	10.5	-
84	0	0.1	1	5	-
85	0	0.2	1	14.5	-
86	0	0	0	3.5	-
87	0	0.3	1	10.5	-
88	0	0	0	3	-
89	0	0.1	1	7.5	-
90	0	0	0	3.5	0
91	0	0.1	1	5.5	-
92	0	0	0	4	0.25
93	0	0.2	1	14	-
94	0	0	0	10	-
95	0	0.2	1	10	-
96	0	0.1	1	3.5	-
97	0	0.3	1	9	-
98	0	0.2	1	10	-
99	0	0.3	1	4.5	-
100	0	0.2	1	6.5	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.08	0.49	7.56	0.18
Binary Calcite Index (CI)	0.49				
Proportional Calcite Index (CI')	0.08				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBSC-1					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	3.9	-
2	0	0	0	5.2	-
3	0	0	0	2.5	-
4	0	0	0	9.4	-
5	0	0	0	3.1	-
6	0	0	0	7.4	-
7	0	0	0	8.2	-
8	0	0	0	7	-
9	0	0	0	5.5	-
10	0	0	0	11.7	0.75
11	0	0	0	7.6	-
12	0	0.2	1	5.9	-
13	0	0	0	7.2	-
14	0	0	0	10.9	-
15	1	0.4	1	7.4	-
16	0	0	0	5.6	-
17	0	0.1	1	6.9	-
18	0	0	0	5	-
19	0	0.1	1	8	-
20	0	0	0	7.9	0.5
21	0	0.1	1	6.1	-
22	0	0.1	1	7.2	-
23	0	0.1	1	7.4	-
24	0	0	0	6.6	-
25	0	0.4	1	8	-
26	0	0	0	7.5	-
27	0	0	0	3	-
28	0	0	0	7.3	-
29	0	0	0	5	-
30	0	0.4	1	15.6	0.5
31	0	0	0	8.5	-
32	0	0.1	1	7.4	-
33	0	0	0	7	-
34	0	0	0	7.5	-
35	0	0	0	9.2	-
36	0	0.3	1	8.9	-
37	0	0	0	9	-
38	0	0.3	1	8.9	-
39	0	0	0	8.2	-
40	0	0.1	1	12.2	0.75
41	0	0	0	8.9	-
42	0	0	0	8	-
43	0	0	0	9	-
44	0	0	0	11	-
45	0	0	0	8.5	-
46	0	0	0	7.2	-
47	0	0	0	7	-
48	0	0	0	8	-
49	0	0	0	7	-
50	0	0	0	7.8	0.5
51	0	0	0	0.2	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBSC-1					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	7.2	-
53	0	0	0	3.7	-
54	0	0	0	9.8	-
55	0	0	0	4.5	-
56	0	0	0	10	-
57	0	0	0	5.1	-
58	0	0	0	5.9	-
59	0	0	0	7.6	-
60	0	0	0	7.4	0
61	0	0.1	1	12	-
62	0	0	0	3.9	-
63	0	0	0	4	-
64	0	0	0	13	-
65	0	0.2	1	8.4	-
66	0	0	0	8	-
67	0	0	0	5	-
68	0	0.1	1	6.8	-
69	0	0.1	1	6	-
70	0	0	0	5.5	0.25
71	0	0	0	0.2	-
72	0	0	0	1.6	-
73	0	0	0	8.9	-
74	0	0	0	5.3	-
75	0	0	0	2.2	-
76	0	0	0	7.5	-
77	0	0	0	6	-
78	0	0	0	4.7	-
79	0	0.1	1	9.2	-
80	0	0	0	7.8	-
81	0	0	0	5.8	-
82	0	0	0	10.5	0.75
83	0	0.2	1	12	-
84	0	0	0	5	-
85	0	0.3	1	9.8	-
86	0	0.2	1	5.5	-
87	0	0	0	6.4	-
88	0	0	0	5.7	-
89	0	0	0	0.2	-
90	0	0.2	1	6	0.25
91	0	0	0	2.3	-
92	0	0.1	1	8.5	-
93	0	0.1	1	13.2	-
94	0	0	0	7	-
95	0	0	0	7	-
96	0	0.2	1	7.3	-
97	0	0	0	3.6	-
98	0	0	0	9.9	-
99	0	0	0	9.5	-
100	0	0	0	2.8	0.5
Average Cp, Cc, intermediate axis, and Embeddedness	0.01	0.05	0.25	7.05	0.48
Binary Calcite Index (CI)	0.26				
Proportional Calcite Index (CI')	0.06				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBSC-2					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	9	-
2	0	0	0	11.9	-
3	0	0	0	12.5	-
4	0	0	0	13.5	-
5	0	0	0	14.8	-
6	0	0	0	16.1	-
7	0	0	0	14	-
8	0	0	0	11.2	-
9	0	0	0	22.5	-
10	0	0	0	3.7	0
11	0	0	0	22.3	-
12	0	0	0	7.9	-
13	0	0.2	1	16.5	-
14	0	0	0	12.1	-
15	0	0	0	9.8	-
16	0	0	0	7.2	-
17	0	0	0	0.2	-
18	0	0	0	0.2	-
19	0	0	0	3.9	-
20	0	0	0	8.6	0.25
21	0	0	0	6.3	-
22	0	0	0	8.9	-
23	0	0	0	11.4	-
24	0	0	0	5.4	-
25	0	0	0	26.4	-
26	0	0.2	1	11.5	-
27	0	0	0	14	-
28	0	0	0	8	-
29	0	0	0	6	-
30	0	0	0	16.5	-
31	0	0	0	7.9	-
32	0	0	0	4.5	-
33	0	0	0	3.4	0.5
34	0	0	0	10	-
35	0	0	0	7.7	-
36	0	0	0	8.2	-
37	0	0	0	18	-
38	0	0	0	10.6	-
39	0	0	0	5.4	-
40	0	0	0	16.5	-
41	0	0	0	9.1	0.25
42	0	0	0	4.2	-
43	0	0	0	10.6	-
44	0	0	0	20.5	-
45	0	0	0	8.7	-
46	0	0	0	3.7	-
47	0	0	0	5.5	-
48	0	0	0	7.9	-
49	0	0.1	1	10.7	-
50	0	0	0	8.2	0.5
51	0	0	0	2	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBSC-2					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	8	-
53	0	0	0	5.9	-
54	0	0	0	6.5	-
55	0	0	0	15.5	-
56	0	0	0	4.8	-
57	0	0	0	22.5	-
58	0	0	0	8.1	-
59	0	0	0	8.9	-
60	0	0	0	4	0
61	0	0	0	8.7	-
62	0	0	0	7.1	-
63	0	0	0	4.2	-
64	0	0	0	8.6	-
65	0	0	0	8.5	-
66	0	0	0	2.7	-
67	0	0	0	8.9	-
68	0	0	0	11.5	-
69	0	0	0	7.5	-
70	0	0	0	11.5	0.75
71	0	0	0	9.4	-
72	0	0	0	5	-
73	0	0	0	8	-
74	0	0.5	1	12.9	-
75	0	0	0	8.5	-
76	0	0	0	0.2	-
77	0	0	0	19.5	-
78	0	0	0	10	-
79	0	0	0	2.6	-
80	0	0	0	10.9	0.75
81	0	0	0	2.7	-
82	0	0	0	3.5	-
83	0	0	0	17.9	-
84	0	0	0	13	-
85	0	0	0	7	-
86	0	0.2	1	11.6	-
87	0	0	0	7.3	-
88	0	0	0	9.1	-
89	0	0	0	10	-
90	0	0	0	8.6	0
91	0	0	0	6.6	-
92	0	0	0	9.9	-
93	0	0	0	4.9	-
94	0	0	0	5.5	-
95	0	0	0	9.9	-
96	1	1	1	2.2	-
97	0	0.1	1	7.1	-
98	0	0.1	1	6.9	-
99	0	0.2	1	8.6	-
100	0	0	0	13.2	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.01	0.03	0.09	9.32	0.33
Binary Calcite Index (CI)	0.10				
Proportional Calcite Index (CI')	0.04				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBSC-3					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	21.5	-
2	0	0.3	1	15.2	-
3	0	0	0	5.4	-
4	0	0	0	14.5	-
5	0	0	0	25.3	-
6	0	0	0	8	-
7	0	0	0	12.2	-
8	0	0	0	7.3	-
9	0	0	0	10.6	-
10	0	0	0	11.5	0.75
11	0	0.1	1	9.2	-
12	0	0	0	9.2	-
13	0	0	0	5.9	-
14	0	0	0	12.5	-
15	0	0	0	7.4	-
16	0	0	0	16	-
17	0	0	0	3	-
18	0	0	0	8.5	-
19	0	0.2	1	10.6	-
20	0	0	0	25.5	0.5
21	0	0	0	14	-
22	0	0	0	4	-
23	0	0	0	6.5	-
24	0	0	0	2.5	-
25	0	0	0	8.6	-
26	0	0.1	1	11.8	-
27	0	0	0	7	-
28	0	0	0	3	-
29	0	0	0	10.4	-
30	0	0	0	0.2	1
31	0	0	0	3.7	-
32	0	0	0	17	-
33	0	0	0	4.6	-
34	0	0	0	8.2	-
35	0	0.2	1	8.5	-
36	0	0	0	13.5	-
37	0	0	0	5.6	-
38	0	0	0	8.2	-
39	0	0.2	1	17.2	-
40	0	0	0	3.9	0
41	0	0	0	14.5	-
42	0	0	0	4.5	-
43	0	0	0	11.6	-
44	0	0	0	8.7	-
45	0	0	0	5.5	-
46	0	0	0	0.2	-
47	0	0	0	10.3	-
48	0	0.1	1	9	-
49	0	0	0	9.2	-
50	0	0	0	8.5	0.5
51	0	0.1	1	9.5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBSC-3					
13-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	6.1	-
53	0	0	0	4.7	-
54	0	0	0	5.1	-
55	0	0.2	1	11.2	-
56	0	0	0	5.3	-
57	0	0	0	5.5	-
58	0	0	0	2.4	-
59	0	0	0	0.2	-
60	0	0	0	9.1	0.25
61	0	0.3	1	9.9	-
62	0	0.1	1	11.3	-
63	0	0	0	4.8	-
64	0	0	0	3.2	-
65	0	0.1	1	12.4	-
66	0	0	0	5.8	-
67	0	0	0	14	-
68	0	0	0	3.9	-
69	0	0	0	9	-
70	0	0	0	16.5	0.75
71	0	0	0	0.2	-
72	0	0	0	8.6	-
73	0	0	0	14	-
74	0	0	0	1.6	-
75	0	0	0	5.2	-
76	0	0	0	3.2	-
77	0	0	0	9.9	-
78	0	0	0	8.7	-
79	0	0	0	9	-
80	0	0	0	10.9	0.25
81	0	0	0	8.2	-
82	0	0	0	9.5	-
83	0	0.2	1	8.2	-
84	0	0	0	13	-
85	0	0	0	11.6	-
86	0	0.1	1	6	-
87	0	0	0	19	-
88	0	0.1	1	7.9	-
89	0	0	0	9.4	-
90	0	0	0	12.1	0.25
91	0	0	0	18.2	-
92	0	0	0	12.6	-
93	0	0	0	11	-
94	0	0.1	1	11	-
95	0	0	0	5.8	-
96	0	0.1	1	11.7	-
97	0	0.1	1	8	-
98	0	0	0	3.6	-
99	0	0	0	12.8	-
100	0	0	0	4.4	0
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.03	0.18	9.05	0.43
Binary Calcite Index (CI)	0.18				
Proportional Calcite Index (CI')	0.03				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBCP-1					
14-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	6.9	-
2	0	0	0	17	-
3	0	0	0	7.5	-
4	0	0	0	6	-
5	0	0	0	6.5	-
6	0	0	0	8	-
7	0	0	0	5.6	-
8	0	0	0	8.4	-
9	0	0.4	1	11.9	-
10	0	0	0	12.3	-
11	0	0	0	3.2	0.75
12	0	0	0	4.5	-
13	0	0	0	11	-
14	0	0	0	7.8	-
15	0	0	0	7.1	-
16	0	0	0	7.2	-
17	0	0	0	12	-
18	0	0	0	10.9	-
19	0	0	0	13.9	-
20	0	0	0	9.5	0.5
21	0	0	0	10	-
22	0	0	0	5.2	-
23	0	0	0	10.6	-
24	0	0.2	1	3.1	-
25	0	0	0	7.7	-
26	0	0	0	4.4	-
27	0	0	0	6	-
28	1	0.7	1	5.2	-
29	0	0.3	1	7	-
30	0	0	0	5	0.25
31	0	0	0	9.5	-
32	0	0.6	1	9.5	-
33	0	0.1	1	11	-
34	0	0	0	6.2	-
35	0	0	0	6.4	-
36	0	0	0	7.4	-
37	0	0.5	1	12	-
38	0	0	0	14.5	-
39	0	0.1	1	7.4	-
40	0	0.2	1	9	-
41	0	0	0	9.3	-
42	0	0	0	6.2	0.25
43	0	0	0	9.6	-
44	0	0	0	6.9	-
45	0	0	0	9	-
46	0	0.3	1	14	-
47	0	0	0	4.5	-
48	0	0.2	1	7.5	-
49	0	0	0	3.6	-
50	0	0	0	8.2	0.25
51	0	0	0	5.6	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBCP-1					
14-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	8	-
53	0	0	0	10	-
54	0	0.2	1	10.4	-
55	0	0	0	9	-
56	0	0	0	7	-
57	0	0	0	14	-
58	0	0	0	5.5	-
59	0	0	0	9.2	-
60	0	0.3	1	9.4	0.25
61	0	0	0	8.9	-
62	0	0	0	5.6	-
63	0	0	0	4.1	-
64	0	0	0	10.4	-
65	0	0	0	5.6	-
66	0	0	0	2.4	-
67	0	0.3	1	11.5	-
68	0	0	0	5.3	-
69	0	0	0	8.5	-
70	0	0	0	12.8	0.25
71	0	0.1	1	16.3	-
72	0	0.4	1	13.5	-
73	0	0	0	6.2	-
74	0	0	0	9.8	-
75	0	0	0	4.5	-
76	0	0	0	3.8	-
77	0	0	0	1.8	-
78	0	0	0	7.6	-
79	0	0	0	8.5	-
80	0	0	0	5.3	0.5
81	0	0	0	10.5	-
82	0	0	0	11	-
83	0	0	0	12	-
84	0	0	0	4.7	-
85	0	0	0	12.8	-
86	0	0	0	3.2	-
87	0	0	0	8.5	-
88	0	0	0	9.9	-
89	0	0	0	16.3	-
90	0	0	0	6.2	0
91	0	0	0	11.5	-
92	0	0	0	1.6	-
93	0	0	0	8.5	-
94	0	0	0	8	-
95	0	0.3	1	9	-
96	0	0	0	4	-
97	0	0	0	7	-
98	0	0	0	9.3	-
99	0	0	0	7.8	-
100	0	0	0	7.2	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.01	0.05	0.17	8.23	0.33
Binary Calcite Index (CI)	0.18				
Proportional Calcite Index (CI')	0.06				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBCP-2					
14-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.3	1	9.9	-
2	0	0	0	10.7	-
3	0	0.2	1	8.8	-
4	0	0.1	1	10.5	-
5	0	0.1	1	3.8	-
6	0	0	0	9.5	-
7	0	0	0	9.3	-
8	0	0	0	10.6	-
9	0	0	0	13.5	-
10	0	0	0	14.5	-
11	0	0	0	11	0.5
12	1	0.5	1	25	-
13	0	0	0	20.5	-
14	0	0	0	4.5	-
15	0	0.1	1	4	-
16	0	0	0	18.5	-
17	0	0	0	5.2	-
18	0	0	0	6.7	-
19	0	0.1	1	9.8	-
20	0	0	0	11.5	0.25
21	0	0	0	7.8	-
22	0	0	0	0.2	-
23	0	0	0	1.9	-
24	0	0	0	5.6	-
25	0	0	0	5.8	-
26	0	0	0	7	-
27	0	0	0	5.1	-
28	0	0.1	1	9	-
29	0	0	0	9.2	-
30	0	0	0	6.2	0.75
31	0	0	0	5	-
32	0	0	0	8.4	-
33	0	0	0	4	-
34	0	0	0	15.5	-
35	0	0	0	19.6	-
36	0	0	0	1.7	-
37	0	0	0	5.7	-
38	0	0	0	6.2	-
39	0	0.3	1	9.2	-
40	0	0	0	7.9	0.75
41	0	0	0	5.5	-
42	0	0	0	10.4	-
43	0	0	0	3.1	-
44	0	0	0	13.4	-
45	0	0.1	1	9.8	-
46	0	0	0	13.5	-
47	0	0	0	8.9	-
48	0	0	0	6.3	-
49	0	0.5	1	7.9	-
50	0	0	0	7.5	0.5
51	0	0	0	6.3	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBCP-2					
14-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0.1	1	5.6	-
53	0	0	0	4.9	-
54	0	0	0	7.7	-
55	0	0.1	1	12.2	-
56	0	0	0	1.9	-
57	1	0.5	1	7	-
58	0	0	0	7.5	-
59	0	0.4	1	18	-
60	0	0	0	14	0.5
61	0	0.6	1	9.6	-
62	0	0	0	4.6	-
63	0	0	0	5.1	-
64	0	0	0	5.4	-
65	1	0.7	1	13.9	-
66	0	0	0	2.2	-
67	0	0.1	1	7.9	-
68	0	0.3	1	12.4	-
69	1	0.6	1	9.1	-
70	0	0	0	2.8	0.5
71	0	0.2	1	13.7	-
72	0	0	0	4.4	-
73	0	0.3	1	13.6	-
74	0	0	0	13.1	-
75	0	0	0	4.9	-
76	0	0.1	1	9	-
77	0	0.1	1	13.5	-
78	0	0.2	1	8.3	-
79	0	0.1	1	7.4	-
80	0	0	0	14	0.25
81	0	0.5	1	22.8	-
82	0	0	0	9.2	-
83	0	0	0	5	-
84	0	0	0	8.5	-
85	0	0	0	11.6	-
86	0	0.1	1	15	-
87	1	0.5	1	7.4	-
88	0	0	0	4.6	-
89	1	0.6	1	7	-
90	0	0	0	6.5	0.75
91	0	0	0	3.2	-
92	0	0	0	5.1	-
93	1	0.5	1	9	-
94	0	0.2	1	8.3	-
95	0	0	0	2.9	-
96	0	0	0	3.1	-
97	0	0	0	7.2	-
98	0	0	0	15.6	-
99	0	0	0	6.4	-
100	0	0	0	15.6	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.07	0.09	0.32	8.79	0.50
Binary Calcite Index (CI)	0.39				
Proportional Calcite Index (CI')	0.16				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBCP-3					
14-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	0.2	-
2	0	0	0	1.2	-
3	0	0	0	9.8	-
4	0	0	0	0.2	-
5	0	0	0	3.9	-
6	0	0	0	7.5	-
7	0	0	0	5	-
8	0	0	0	7	-
9	0	0	0	7.8	-
10	0	0	0	7.1	0
11	0	0	0	6.5	-
12	0	0	0	4.8	-
13	0	0	0	2.9	-
14	0	0	0	8.3	-
15	0	0	0	9.9	-
16	0	0	0	7.2	-
17	0	0	0	13.2	-
18	0	0	0	5.3	-
19	0	0	0	5.9	-
20	0	0	0	4.7	0.25
21	0	0	0	8.9	-
22	0	0	0	2.6	-
23	0	0	0	8.1	-
24	0	0	0	10.1	-
25	0	0	0	8.5	-
26	0	0	0	11.1	-
27	0	0	0	3.5	-
28	0	0	0	2.8	-
29	0	0	0	10.5	-
30	0	0	0	4.8	0.5
31	0	0	0	4.9	-
32	0	0	0	7.1	-
33	0	0	0	6.7	-
34	0	0	0	6.5	-
35	0	0	0	7.4	-
36	0	0	0	0.2	-
37	0	0	0	10	-
38	0	0	0	2.2	-
39	0	0.6	1	14.5	-
40	0	0	0	3.9	0.25
41	0	0	0	0.2	-
42	0	0	0	2.7	-
43	0	0	0	1.5	-
44	0	0	0	2.5	-
45	0	0	0	4.5	-
46	0	0	0	1.7	-
47	0	0	0	5.2	-
48	0	0	0	14.5	-
49	1	0.5	1	2.1	-
50	0	0	0	8.7	0.25
51	0	0	0	5.5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBCP-3					
14-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	4.4	-
53	1	0.5	1	5.6	-
54	0	0	0	7.9	-
55	1	0.4	1	6.1	-
56	0	0	0	10.5	-
57	0	0	0	3.9	-
58	0	0	0	3.5	-
59	1	0.5	1	9	-
60	1	0.3	1	8.8	0.5
61	0	0	0	7	-
62	0	0	0	6	-
63	0	0	0	5.7	-
64	2	0.5	1	13	-
65	0	0.1	1	12.5	-
66	0	0.2	1	4.2	-
67	0	0.1	1	12	-
68	0	0	0	7.9	-
69	0	0.6	1	5.5	-
70	1	0.5	1	5.5	0.5
71	0	0.5	1	6.5	-
72	0	0.6	1	7.5	-
73	2	0.5	1	14.5	-
74	0	0	0	5	-
75	0	0	0	4.9	-
76	0	0	0	6.2	-
77	0	0	0	8.1	-
78	0	0	0	7.9	-
79	0	0	0	5.3	-
80	0	0	0	9.5	0.75
81	0	0	0	5.9	-
82	0	0	0	5.9	-
83	0	0	0	4.2	-
84	0	0	0	9.4	-
85	0	0	0	17	-
86	0	0	0	4.7	-
87	0	0	0	4.2	-
88	0	0	0	5	-
89	0	0	0	4.5	-
90	0	0	0	7.5	0.5
91	0	0	0	11	-
92	0	0	0	8	-
93	0	0	0	4.4	-
94	0	0	0	4.3	-
95	0	0	0	7.5	-
96	0	0	0	16.5	-
97	0	0	0	7.1	-
98	0	0	0	0.2	-
99	0	0	0	4	-
100	0	0	0	8.7	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.10	0.06	0.15	6.56	0.38
Binary Calcite Index (CI)	0.25				
Proportional Calcite Index (CI')	0.16				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBCP-4					
14-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.4	1	9.4	-
2	0	0.1	1	6.7	-
3	0	0	0	13.5	-
4	0	0	0	6.2	-
5	0	0	0	4.1	-
6	0	0.2	1	11.9	-
7	0	0	0	11.2	-
8	0	0.3	1	10.1	-
9	0	0.2	1	8	-
10	0	0	0	12.2	0.25
11	0	0	0	12.4	-
12	0	0	0	5.5	-
13	0	0	0	5.5	-
14	0	0	0	6.2	-
15	0	0	0	5.9	-
16	0	0	0	5.7	-
17	0	0	0	10.2	-
18	0	0	0	15	-
19	0	0	0	5	-
20	0	0	0	7.1	0.75
21	0	0	0	6	-
22	0	0	0	5.6	-
23	0	0	0	11.5	-
24	0	0	0	6.1	-
25	0	0.7	1	11	-
26	0	0	0	5.4	-
27	0	0	0	5.8	-
28	0	0.3	1	4.9	-
29	0	0	0	9.2	-
30	1	0.4	1	13.7	0.5
31	0	0	0	8.1	-
32	0	0	0	6.5	-
33	0	0	0	8.6	-
34	0	0	0	11	-
35	0	0	0	8.5	-
36	0	0	0	9.5	-
37	0	0	0	7.3	-
38	0	0	0	7.5	-
39	0	0	0	18	-
40	0	0	0	7	0.5
41	0	0	0	9.7	-
42	0	0	0	13	-
43	0	0	0	8.1	-
44	0	0	0	5.9	-
45	0	0	0	7.9	-
46	0	0.5	1	6	-
47	1	0	0	19.5	-
48	0	0.2	1	7.9	-
49	0	0	0	9.5	-
50	0	0	0	8.3	0
51	0	0	0	5.2	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBCP-4					
14-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	10.8	-
53	0	0	0	4	-
54	0	0.1	1	14.5	-
55	0	0	0	19.5	-
56	0	0.1	1	12.5	-
57	0	0	0	6.2	-
58	0	0	0	6.4	-
59	0	0	0	9	-
60	0	0	0	11.3	0.5
61	0	0.2	1	7.1	-
62	0	0	0	6.7	-
63	0	0.2	1	10.9	-
64	0	0	0	9.4	-
65	0	0	0	11.6	-
66	0	0	0	10	-
67	0	0	0	7.8	-
68	0	0	0	13.9	-
69	0	0	0	9.4	-
70	0	0	0	5.5	0
71	0	0	0	6.5	-
72	0	0	0	10.2	-
73	0	0	0	4.3	-
74	0	0	0	4.7	-
75	0	0	0	8.5	-
76	0	0	0	5.2	-
77	0	0	0	7.4	-
78	0	0	0	5.8	-
79	0	0	0	6.9	-
80	0	0.2	1	18.4	0.25
81	0	0	0	9.6	-
82	0	0	0	6.3	-
83	0	0	0	8.7	-
84	0	0	0	7	-
85	0	0	0	6.8	-
86	0	0	0	7.7	-
87	0	0	0	3.6	-
88	0	0	0	8	-
89	0	0	0	8.5	-
90	0	0.3	1	13.9	0.25
91	0	0.2	1	15.9	-
92	0	0	0	6.5	-
93	0	0	0	7.8	-
94	0	0	0	12.5	-
95	0	0	0	5.5	-
96	0	0.3	1	7.9	-
97	0	0	0	6.3	-
98	0	0.2	1	12.5	-
99	0	0	0	16.5	-
100	0	0	0	7.5	0
Average Cp, Cc, intermediate axis, and Embeddedness	0.02	0.05	0.19	8.87	0.30
Binary Calcite Index (CI)					0.21
Proportional Calcite Index (CI')					0.07

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBCP-5					
14-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	8.6	-
2	0	0	0	16.4	-
3	0	0	0	6.5	-
4	0	0	0	5.9	-
5	0	0	0	4	-
6	0	0	0	5.5	-
7	0	0	0	8.3	-
8	0	0	0	12	-
9	0	0	0	12.6	-
10	0	0	0	6	0.5
11	0	0	0	6.2	-
12	0	0.1	1	5.6	-
13	0	0	0	9.1	-
14	0	0.1	1	15.5	-
15	0	0	0	19.9	-
16	0	0	0	10	-
17	0	0	0	6.1	-
18	0	0	0	9	-
19	0	0	0	10.5	-
20	0	0	0	4.7	0.25
21	0	0	0	0.2	-
22	0	0	0	15.1	-
23	0	0	0	9.5	-
24	0	0.4	1	15.7	-
25	0	0	0	5.8	-
26	0	0.3	1	13.4	-
27	0	0	0	13.3	-
28	0	0	0	4.9	-
29	0	0	0	5	-
30	0	0.4	1	15.5	0.25
31	0	0	0	9.5	-
32	0	0	0	4.3	-
33	0	0.2	1	8.1	-
34	0	0	0	16	-
35	0	0	0	7.6	-
36	0	0	0	7.7	-
37	0	0	0	8.5	-
38	0	0.1	1	12.6	-
39	0	0	0	17	-
40	0	0	0	10	0.75
41	0	0	0	10.7	-
42	0	0.2	1	13.1	-
43	0	0	0	5.9	-
44	0	0	0	14	-
45	0	0	0	7.2	-
46	0	0	0	10.2	-
47	0	0	0	20	-
48	0	0	0	9.2	-
49	0	0	0	16.3	-
50	0	0	0	11.1	0.5
51	0	0	0	8.2	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOBCP-5					
14-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	9.8	-
53	0	0	0	18.3	-
54	0	0	0	5.6	-
55	0	0	0	8.2	-
56	0	0	0	9.2	-
57	0	0	0	13.9	-
58	0	0	0	5.5	-
59	0	0	0	8.2	-
60	0	0	0	6.8	0
61	0	0	0	7.5	-
62	0	0	0	14.5	-
63	0	0	0	26.5	-
64	0	0	0	9.2	-
65	0	0	0	12.7	-
66	0	0.2	1	18.5	-
67	0	0	0	6.5	-
68	0	0.2	1	18	-
69	0	0	0	12	-
70	0	0	0	8.1	0.25
71	0	0	0	11.4	-
72	0	0	0	11	-
73	0	0	0	3.7	-
74	0	0	0	7.5	-
75	0	0.1	1	8.5	-
76	0	0	0	8.6	-
77	0	0	0	5.4	-
78	0	0	0	3.5	-
79	0	0	0	8.6	-
80	0	0	0	6.4	0.25
81	0	0	0	7.6	-
82	0	0	0	12.5	-
83	0	0	0	9.1	-
84	0	0	0	3	-
85	0	0.6	1	15	-
86	0	0	0	3	-
87	0	0	0	11.5	-
88	0	0	0	14.5	-
89	0	0	0	11	-
90	0	0	0	7.5	0.25
91	0	0	0	9.3	-
92	0	0	0	12.9	-
93	0	0	0	11.6	-
94	0	0	0	7.5	-
95	0	0	0	11	-
96	0	0	0	10.4	-
97	0	0	0	13	-
98	0	0	0	5.5	-
99	0	0	0	7.5	-
100	0	0	0	8.5	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.03	0.12	9.94	0.33
Binary Calcite Index (CI)	0.12				
Proportional Calcite Index (CI')	0.03				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRCP1SW-1					
19-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	7.5	-
2	0	0	0	6	-
3	0	0	0	9	-
4	0	0	0	9	-
5	0	0.1	1	6.5	-
6	0	0	0	6	-
7	0	0	0	6.5	-
8	0	0	0	7	-
9	0	0.1	1	7	-
10	0	0.1	1	9	0.25
11	0	0	0	5	-
12	0	0.1	1	9	-
13	0	0	0	14	-
14	0	0	0	7	-
15	0	0	0	8	-
16	0	0	0	8.5	-
17	0	0	0	9.5	-
18	0	0.1	1	8	-
19	0	0	0	9	-
20	0	0.2	1	9	0
21	0	0.2	1	10.5	-
22	0	0	0	10.5	-
23	0	0.1	1	6	-
24	0	0	0	8	-
25	0	0.1	1	8.5	-
26	0	0.1	1	10	-
27	0	0.1	1	5.5	-
28	0	0	0	5	-
29	0	0	0	7	-
30	0	0	0	6	0.25
31	0	0.3	1	10.5	-
32	0	0	0	7	-
33	0	0.4	1	10	-
34	0	0.1	1	3.5	-
35	0	0.1	1	5	-
36	0	0.3	1	6.5	-
37	0	0	0	7	-
38	0	0	0	4	-
39	0	0	0	9	-
40	0	0.1	1	7.5	0.25
41	0	0	0	6	-
42	0	0.2	1	13	-
43	0	0.1	1	8	-
44	0	0.3	1	6	-
45	0	0	0	7.5	-
46	0	0.1	1	6	-
47	0	0.1	1	9	-
48	0	0.1	1	6	-
49	0	0	0	5	-
50	0	0.1	1	6.5	0.5
51	0	0.3	1	5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRCP1SW-1					
19-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	3.5	-
53	0	0	0	0.5	-
54	0	0.1	1	11	-
55	0	0.4	1	6	-
56	0	0.1	1	8	-
57	0	0.2	1	9	-
58	0	0	0	3	-
59	0	0.1	1	7	-
60	0	0.1	1	7	0
61	0	0	0	5	-
62	0	0	0	9.5	-
63	0	0.1	1	3.5	-
64	0	0	0	6.5	-
65	0	0.3	1	11	-
66	0	0.1	1	6	-
67	0	0	0	5	-
68	0	0	0	7	-
69	0	0	0	6	-
70	0	0.2	1	4.5	0.25
71	0	0.1	1	6.5	-
72	0	0.1	1	4.5	-
73	0	0.1	1	5.5	-
74	0	0.2	1	5	-
75	0	0.4	1	7.5	-
76	0	0.1	1	13.5	-
77	0	0.1	1	7.5	-
78	0	0.1	1	6.5	-
79	0	0.2	1	7	-
80	0	0	0	6.5	0.25
81	0	0.2	1	6.5	-
82	0	0	0	8.5	-
83	0	0	0	2	-
84	0	0.3	1	5.5	-
85	0	0.1	1	6.5	-
86	0	0	0	5	-
87	0	0	0	8.5	-
88	0	0.2	1	9.5	-
89	0	0.2	1	6	-
90	0	0.3	1	5.5	0.25
91	0	0	0	5	-
92	0	0.9	1	8	-
93	0	0.2	1	6	-
94	0	0.1	1	7	-
95	0	0.4	1	4.5	-
96	0	0.3	1	6.5	-
97	0	0.1	1	5	-
98	0	0.1	1	5	-
99	0	0.4	1	6	-
100	0	0	0	6	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.11	0.58	6.97	0.23
Binary Calcite Index (CI)	0.58				
Proportional Calcite Index (CI')	0.11				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRCP1SW-2					
19-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	5	-
2	0	0	0	6	-
3	0	0	0	3	-
4	0	0.1	1	5	-
5	0	0	0	3	-
6	0	0	0	5	-
7	0	0	0	5	-
8	0	0.1	1	5	-
9	0	0.1	1	4.5	-
10	0	0.1	1	4.5	1
11	0	0	0	4.5	-
12	0	0.6	1	10.5	-
13	0	0.2	1	6	-
14	0	0.3	1	4	-
15	0	0.3	1	6	-
16	0	0.1	1	9	-
17	0	0.2	1	5	-
18	0	0.1	1	4.5	-
19	0	0	0	4	-
20	0	0	0	6	0
21	0	0.1	1	4	-
22	0	0.3	1	7	-
23	0	0	0	5.5	-
24	0	0	0	6	-
25	0	0.1	1	6	-
26	0	0.1	1	5.5	-
27	0	0.1	1	5	-
28	0	0.3	1	5	-
29	0	0	0	6.5	-
30	0	0.2	1	2.5	0.25
31	0	0.3	1	4.5	-
32	0	0.2	1	8	-
33	0	0	0	4	-
34	0	0	0	5.5	-
35	0	0.3	1	5	-
36	0	0	0	4.5	-
37	0	0	0	8.5	-
38	0	0	0	3.5	-
39	0	0	0	3.5	-
40	0	0.1	1	8	0.25
41	0	0.5	1	9	-
42	0	0	0	5	-
43	0	0.1	1	3.5	-
44	0	0	0	5	-
45	0	0	0	5	-
46	0	0	0	3	-
47	0	0.1	1	6.5	-
48	0	0	0	3.5	-
49	0	0	0	6.5	-
50	0	0.3	1	7	0.25
51	0	0	0	6	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRCP1SW-2					
19-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0.2	1	5	-
53	0	0.3	1	5	-
54	0	0	0	4.5	-
55	0	0	0	4	-
56	0	0	0	5	-
57	0	0.3	1	4.5	-
58	0	0.2	1	5.5	-
59	0	0	0	5.5	-
60	0	0.7	1	6	0.25
61	0	0	0	6.5	-
62	0	0	0	4.5	-
63	0	0.4	1	4.5	-
64	0	0.1	1	5.5	-
65	0	0	0	4	-
66	0	0	0	5	-
67	0	0.2	1	4	-
68	0	0	0	3	-
69	0	0	0	3	-
70	0	0	0	0.4	0
71	0	0	0	5	-
72	0	0	0	6	-
73	0	0	0	5	-
74	0	0	0	6	-
75	0	0	0	6.5	-
76	0	0.2	1	6	-
77	0	0	0	6	-
78	0	0.3	1	5.5	-
79	0	0	0	5	-
80	0	0	0	4	0
81	0	0.3	1	6.5	-
82	0	0.9	1	4.5	-
83	0	0.1	1	4	-
84	0	0	0	5	-
85	0	0.1	1	3.5	-
86	0	0	0	5	-
87	0	0.1	1	7.5	-
88	0	0.1	1	5	-
89	0	0.3	1	5.5	-
90	0	0	0	1.5	0.25
91	0	0	0	4	-
92	0	0.1	1	6.5	-
93	0	0	0	5.5	-
94	0	0.2	1	3	-
95	0	0	0	5	-
96	0	0.5	1	1	-
97	0	0	0	5.5	-
98	0	0	0	3	-
99	0	0.2	1	6	-
100	0	0	0	3	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.11	0.47	5.04	0.25
Binary Calcite Index (CI)	0.47				
Proportional Calcite Index (CI')	0.11				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRCP1SW-3					
19-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	9	-
2	0	0	0	5	-
3	0	0	0	7	-
4	0	0.1	1	9	-
5	0	0	0	6	-
6	0	0	0	7	-
7	0	0.2	1	10	-
8	0	0	0	7	-
9	0	0	0	6	-
10	0	0	0	8	0
11	0	0.4	1	10	-
12	0	0	0	10	-
13	0	0.1	1	5.5	-
14	0	0	0	7.5	-
15	0	0	0	6.5	-
16	0	0	0	8.5	-
17	0	0	0	7	-
18	0	0.2	1	7	-
19	0	0.2	1	6.5	-
20	0	0.1	1	7.5	0.25
21	0	0.2	1	6	-
22	0	0	0	8	-
23	0	0.1	1	6	-
24	0	0.1	1	5.5	-
25	0	0.2	1	8.5	-
26	0	0	0	4	-
27	0	0	0	8.5	-
28	0	0	0	4.5	-
29	0	0	0	7	-
30	0	0	0	6.5	0.25
31	0	0	0	5.5	-
32	0	0.1	1	4	-
33	0	0	0	3.5	-
34	0	0	0	5.5	-
35	0	0.1	1	5	-
36	0	0.1	1	4.5	-
37	0	0	0	5.5	-
38	0	0.1	1	5.5	-
39	0	0	0	4.5	-
40	0	0.2	1	7	0.5
41	0	0	0	5	-
42	0	0.2	1	7	-
43	0	0.1	1	6.5	-
44	0	0	0	8.5	-
45	0	0	0	6.5	-
46	0	0.3	1	8	-
47	0	0.3	1	9	-
48	0	0.2	1	8.5	-
49	0	0	0	7.5	-
50	0	0	0	5.5	0.25
51	0	0	0	6	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRCP1SW-3					
19-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	7	-
53	0	0.1	1	9	-
54	0	0.3	1	8.5	-
55	0	0	0	7	-
56	0	0	0	6.5	-
57	0	0	0	7.5	-
58	0	0.1	1	7.5	-
59	0	0	0	4.5	-
60	0	0	0	6.5	0.25
61	0	0	0	6	-
62	0	0	0	10	-
63	0	0.5	1	9.5	-
64	0	0	0	7	-
65	0	0.1	1	9	-
66	0	0	0	5	-
67	0	0.1	1	7.5	-
68	0	0	0	7	-
69	0	0	0	7.5	-
70	0	0	0	7.5	0.25
71	0	0.1	1	6.5	-
72	0	0	0	3.5	-
73	0	0	0	7.5	-
74	0	0	0	4	-
75	0	0	0	7	-
76	0	0	0	6.5	-
77	0	0	0	7	-
78	0	0	0	7	-
79	0	0	0	9	-
80	0	0.2	1	7	0.5
81	0	0	0	8.5	-
82	0	0.1	1	6	-
83	0	0	0	9.5	-
84	0	0	0	7	-
85	0	0	0	7.5	-
86	0	0.3	1	6.5	-
87	0	0	0	10	-
88	0	0	0	9.5	-
89	0	0	0	5	-
90	0	0	0	8	0.5
91	0	0.2	1	10	-
92	0	0.2	1	9	-
93	0	0.1	1	8	-
94	0	0.1	1	9	-
95	0	0.1	1	9.5	-
96	0	0.2	1	9	-
97	0	0	0	8	-
98	0	0	0	6	-
99	0	0.1	1	6	-
100	0	0	0	8	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.07	0.38	7.08	0.30
Binary Calcite Index (CI)	0.38				
Proportional Calcite Index (CI')	0.07				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRSch2-1					
14-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.1	1	6	-
2	0	0.4	1	7.5	-
3	0	0.1	1	6.5	-
4	0	0.1	1	7	-
5	0	0	0	5	-
6	0	0.1	1	5.5	0.25
7	0	0.2	1	6	-
8	0	0	0	5.5	-
9	0	0.1	1	5	-
10	0	0.4	1	11.5	-
11	0	0	0	5	-
12	0	0.3	1	5.5	-
13	0	0.1	1	7	-
14	0	0	0	5	-
15	0	0.5	1	11	-
16	0	0.2	1	4	-
17	0	0	0	0.2	-
18	0	0.2	1	4	-
19	0	0.1	1	5.5	0
20	0	0.1	1	5.5	-
21	0	0.7	1	6	-
22	0	0.2	1	2.5	-
23	0	0.3	1	7.5	-
24	0	0.4	1	8	-
25	0	0.3	1	4	-
26	0	0	0	3.5	-
27	0	0.4	1	4.5	-
28	0	0	0	2	-
29	0	0	0	4	0
30	0	0.5	1	4	-
31	0	0	0	0.2	-
32	0	0	0	1.5	-
33	0	0.1	1	3	-
34	0	0.2	1	8	-
35	0	0.2	1	5.5	-
36	0	0.1	1	5	-
37	0	0.3	1	3	-
38	0	0	0	6	-
39	0	0.1	1	3	-
40	0	0.8	1	13.8	-
41	0	0.3	1	7.5	-
42	0	0.2	1	4	-
43	0	0.5	1	7.5	-
44	0	0.1	1	2.5	-
45	0	0.1	1	2.5	-
46	0	0.5	1	6.5	-
47	0	0.5	1	2.5	-
48	0	0	0	9.5	0
49	0	0.2	1	6	-
50	0	0.2	1	3	-
51	0	0	0	0.2	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRSCH2-1					
14-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0.3	1	4	-
53	0	0.1	1	5.5	-
54	0	0.1	1	4.5	0.25
55	0	0.1	1	3.5	-
56	0	0.3	1	7	0.5
57	0	0.1	1	4.5	-
58	0	0.4	1	5.5	-
59	0	0.3	1	4.5	-
60	0	0.1	1	3	-
61	0	0.3	1	2.5	-
62	0	0.1	1	4	-
63	0	0.3	1	4	-
64	0	0.2	1	7	-
65	0	0.3	1	3	-
66	0	0.4	1	4	-
67	0	0.4	1	6.5	0
68	0	0.3	1	3.5	-
69	0	0.1	1	7	-
70	0	0.3	1	6	-
71	0	0.5	1	6	-
72	0	0.5	1	11.5	-
73	0	0.6	1	3.5	-
74	0	0.1	1	5	-
75	0	0.2	1	7.5	-
76	0	0.4	1	4	-
77	0	0.2	1	6	0
78	0	0.5	1	5.5	-
79	0	0.6	1	8.5	-
80	0	0.3	1	4.5	-
81	0	0.1	1	4.5	-
82	0	0.4	1	6.5	-
83	0	0	0	4.5	-
84	0	0.2	1	6	-
85	0	0.3	1	5	-
86	0	-	-	0.2	-
87	0	0.1	1	3	-
88	0	0.2	1	3.5	0.25
89	0	0.7	1	8.5	-
90	0	0.4	1	6.5	-
91	0	0.6	1	7	-
92	0	0.1	1	5	-
93	0	0.5	1	3	-
94	0	0	0	5.5	-
95	0	0.5	1	2.5	0.5
96	0	0.1	1	5.5	-
97	0	0.1	1	2.5	-
98	0	0.1	1	6.5	-
99	0	0.4	1	5.5	-
100	0	0.8	1	7.5	-
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.24	0.85	5.15	0.18
Binary Calcite Index (CI)	0.85				
Proportional Calcite Index (CI')	0.24				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRSch2-2					
14-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.4	1	4.5	-
2	0	0.2	1	2.5	-
3	0	0.1	1	6.5	-
4	0	0	0	6.5	-
5	0	0.1	1	7	-
6	0	0.3	1	4	-
7	0	0	0	2	-
8	0	0.2	1	6.5	-
9	0	0.4	1	9.5	-
10	0	0	0	5	-
11	0	0.4	1	10	-
12	0	0	0	6	0
13	0	0.1	1	6	-
14	0	0	0	6	-
15	0	0.1	1	8.5	-
16	0	0	0	2.5	-
17	0	0.3	1	4	-
18	0	0.2	1	6	-
19	0	0	0	3	-
20	0	0	0	4	0
21	0	0.1	1	7	-
22	0	0.1	1	7	-
23	0	0.4	1	6	-
24	0	0.2	1	5.5	-
25	0	0.2	1	6	-
26	0	0.1	1	7	-
27	0	0	0	11	-
28	0	0.5	1	5.5	-
29	0	0.3	1	5.5	-
30	0	0	0	2.5	0
31	0	0.2	1	7.5	-
32	0	0	0	0.2	-
33	0	0.1	1	6.5	-
34	0	0.5	1	5	-
35	0	0.2	1	2.5	-
36	0	0	0	5	-
37	0	0	0	4.5	-
38	0	0.4	1	4	-
39	0	0.2	1	3	-
40	0	0.4	1	7	0.25
41	0	0.1	1	6	-
42	0	0.3	1	3.5	-
43	0	0	0	0.2	-
44	0	0.1	1	3.5	-
45	0	0.3	1	4	-
46	0	0.3	1	4.5	-
47	0	0.4	1	5.5	-
48	0	0	0	2	-
49	0	0.3	1	5.5	0.5
50	0	0.4	1	6	-
51	0	0.3	1	3.5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRSch2-2					
14-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0.2	1	7.5	-
53	0	0.1	1	3	-
54	0	0	0	0.2	-
55	0	0.2	1	5	-
56	0	0.4	1	6	-
57	0	0.1	1	4	-
58	0	0.5	1	5	-
59	0	0.4	1	8.5	0.25
60	0	0.5	1	4.5	-
61	0	0.7	1	5.5	-
62	0	0.4	1	5.5	-
63	0	0.2	1	4.5	-
64	0	0.6	1	8	-
65	0	0.3	1	5	-
66	0	0.3	1	3.5	-
67	0	0.1	1	5.5	-
68	0	0.3	1	6.5	-
69	0	0.3	1	4	0.25
70	0	0.7	1	5	-
71	0	0.3	1	7	-
72	0	0.4	1	6.5	-
73	0	0.7	1	4	-
74	0	0.3	1	6.5	-
75	0	0.4	1	8	-
76	0	0.4	1	6.5	-
77	0	0.3	1	10	-
78	0	0.4	1	5	-
79	0	0.7	1	9	-
80	0	0.5	1	5	0
81	0	0.1	1	7	-
82	0	0.5	1	4	-
83	0	0.3	1	7	-
84	0	0.1	1	5	-
85	0	0.8	1	1.5	-
86	0	0	0	3	-
87	0	0.1	1	6.5	-
88	0	0.8	1	4.5	-
89	0	0.3	1	5	-
90	0	0	0	4.5	-
91	0	0.5	1	3	0
92	0	0	0	2.5	-
93	0	0.8	1	5.5	-
94	0	0.1	1	4.5	-
95	0	0.1	1	6.5	-
96	0	0.9	1	6.5	-
97	0	0.9	1	4.5	0.25
98	0	0.3	1	6	-
99	0	0.4	1	0.5	-
100	0	0.4	1	6.5	-
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.27	0.81	5.21	0.15
Binary Calcite Index (CI)	0.81				
Proportional Calcite Index (CI')	0.27				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRSCH2-3					
14-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.9	1	9	-
2	0	0.5	1	5	-
3	0	0.7	1	8	-
4	0	0.5	1	5	-
5	0	0.7	1	12.5	-
6	0	0.6	1	12	-
7	0	0.6	1	7	-
8	0	0.9	1	9.5	-
9	0	0.6	1	9	0
10	0	0.4	1	4.5	-
11	0	0.4	1	5	-
12	0	0.1	1	2.5	-
13	0	0.5	1	6	-
14	0	0.3	1	4.5	-
15	0	0.7	1	11	-
16	0	0.4	1	8	-
17	0	0.7	1	3	-
18	0	0	0	0.2	-
19	0	0.5	1	6	-
20	0	0	0	0.5	0
21	0	0.6	1	9	-
22	0	0	0	3	-
23	0	0.2	1	5	-
24	0	0.7	1	7	-
25	0	1	1	5	-
26	0	0.3	1	5	-
27	0	0.7	1	7	-
28	0	0.3	1	6	-
29	0	0	0	2	0
30	0	0.4	1	9	-
31	0	0	0	3	-
32	0	0.6	1	5.5	-
33	0	0.1	1	5	-
34	0	1	1	6	-
35	0	0.8	1	7	-
36	0	0.7	1	6	-
37	0	0.9	1	8	-
38	0	0.8	1	3.5	-
39	0	0.4	1	7.5	0
40	0	0.8	1	10.5	-
41	0	0.4	1	9	-
42	0	0.7	1	10	-
43	0	0	0	0.2	-
44	0	0.7	1	3	-
45	0	0.5	1	10	-
46	0	0	0	2.5	-
47	0	0	0	0.2	-
48	0	0.3	1	3.5	-
49	0	0.2	1	3	-
50	0	0.7	1	7	-
51	0	0.8	1	8.5	0

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRSCH2-3					
14-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	1	-
53	0	0.7	1	2	-
54	0	0.7	1	8	-
55	0	0.6	1	6.5	-
56	0	0.6	1	6.5	-
57	0	0.8	1	7	-
58	0	0.6	1	4	0
59	0	0.6	1	4.5	-
60	0	0.4	1	6.5	-
61	0	0.4	1	6.5	-
62	0	0.7	1	8	-
63	0	0.6	1	9.5	-
64	0	0.6	1	7.5	-
65	0	0.4	1	3.5	-
66	0	0	0	0.2	-
67	0	0.5	1	6	-
68	0	0	0	1	-
69	0	0.5	1	9	-
70	0	0.3	1	6	-
71	0	0.7	1	6.5	0
72	0	0.7	1	9.5	-
73	0	0.4	1	4.5	-
74	0	0.6	1	13	-
75	0	0.7	1	7.5	-
76	0	0.5	1	12	-
77	0	0.4	1	5	-
78	0	0.6	1	5	-
79	0	0.5	1	8.5	0.25
80	0	0.8	1	5.5	-
81	0	0.9	1	9.5	-
82	0	0.2	1	10	-
83	0	0.6	1	6	-
84	0	0.6	1	7.5	-
85	0	0.4	1	5.5	-
86	0	0.5	1	6	-
87	0	0	0	2.5	-
88	0	0.1	1	4	-
89	0	0.9	1	6	0.25
90	0	0.5	1	7	-
91	0	0.9	1	8.5	-
92	0	0.3	1	5	-
93	0	0.9	1	7.5	-
94	0	0.9	1	8	-
95	0	0.6	1	11	-
96	0	0.6	1	6.5	-
97	0	0.5	1	5.5	-
98	0	0.5	1	7.5	-
99	0	0.5	1	10.5	0.5
100	0	0.1	1	4	-
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.50	0.88	6.23	0.10
Binary Calcite Index (CI)	0.88				
Proportional Calcite Index (CI')	0.50				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRUPO-1					
18-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	5.5	-
2	0	0.1	1	7.5	-
3	0	0	0	5	-
4	0	0.1	1	6	-
5	0	0.3	1	7	-
6	0	0.3	1	5	-
7	0	0.3	1	6	-
8	0	0.1	1	5	-
9	0	0.1	1	8	-
10	0	0.1	1	12	0.75
11	0	0	0	7.5	-
12	0	0	0	11	-
13	0	0	0	5.5	-
14	0	0	0	9	-
15	0	0.4	1	12	-
16	0	0.2	1	9	-
17	0	0	0	7	-
18	0	0.2	1	9	-
19	0	0	0	3	-
20	0	0.3	1	6.5	0.25
21	0	0	0	6.5	-
22	0	0	0	5	-
23	0	0	0	4	-
24	0	0.1	1	5	-
25	0	0.1	1	4	-
26	0	0	0	4	-
27	0	0.3	1	8.5	-
28	0	0.2	1	6	-
29	0	0	0	5.5	-
30	0	0.2	1	7	0.25
31	0	0.3	1	7.5	-
32	0	0	0	6	-
33	0	0	0	6	-
34	0	0.2	1	6	-
35	0	0.1	1	5.5	-
36	0	0.2	1	7.5	-
37	0	0.1	1	7	-
38	0	0.1	1	13.5	-
39	0	0	0	4.5	-
40	0	0.4	1	8.5	0.25
41	0	0.3	1	10.5	-
42	0	0.2	1	6	-
43	0	0.2	1	7.5	-
44	0	0.7	1	7.5	-
45	0	0.2	1	6	-
46	0	0.1	1	9	-
47	0	0.6	1	8.5	-
48	0	0.8	1	9.5	-
49	0	0.6	1	7	-
50	0	0.9	1	8	0.5
51	0	0	0	5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRUPO-1					
18-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0.2	1	11	-
53	0	0.3	1	8	-
54	0	0.1	1	6.5	-
55	0	0.9	1	6.5	-
56	0	0.6	1	9	-
57	0	0.1	1	5	-
58	0	0.7	1	11.5	-
59	0	0.8	1	9	-
60	0	0.3	1	10	0.25
61	0	0.1	1	5.5	-
62	0	0.6	1	7	-
63	0	0.1	1	8	-
64	0	0.1	1	9.5	-
65	0	0.3	1	8	-
66	0	0.1	1	7.5	-
67	0	0.1	1	5	-
68	0	0.7	1	9	-
69	0	0.3	1	8	-
70	0	0.4	1	6.5	0
71	0	0.2	1	9.5	-
72	0	0	0	5.5	-
73	0	0.1	1	4.5	-
74	0	0.2	1	11	-
75	0	0.5	1	12.5	-
76	0	0.4	1	6	-
77	0	0.1	1	4	-
78	0	0.4	1	7	-
79	0	0.4	1	4	-
80	0	0.1	1	9	0.25
81	0	0.1	1	6.5	-
82	0	0.1	1	4	-
83	0	0.4	1	5.5	-
84	0	0.5	1	9	-
85	0	0.3	1	7.5	-
86	0	0	0	4.5	-
87	0	0.3	1	11.5	-
88	0	0.1	1	6	-
89	0	0	0	8	-
90	0	0.4	1	7.5	0.5
91	0	0	0	3.5	-
92	0	0.2	1	4	-
93	0	0.2	1	5.5	-
94	0	0.2	1	5.5	-
95	0	0.1	1	3.5	-
96	0	0.3	1	5	-
97	0	0	0	4.5	-
98	0	0.4	1	9	-
99	0	0.2	1	7	-
100	0	0.2	1	6.5	0
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.23	0.78	7.06	0.30
Binary Calcite Index (CI)	0.78				
Proportional Calcite Index (CI')	0.23				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRUPO-2					
18-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.7	1	14	-
2	0	0.3	1	5.5	-
3	0	0.4	1	11.5	-
4	0	0.5	1	6	-
5	0	0.3	1	6.5	-
6	0	0.3	1	3.5	-
7	0	0.7	1	12	-
8	0	0.4	1	6	-
9	0	0.1	1	5.5	-
10	0	0.5	1	11	0.25
11	0	0.5	1	17	-
12	0	0.4	1	10	-
13	0	0.5	1	10	-
14	0	0.2	1	7	-
15	0	0.3	1	5.5	-
16	0	0.2	1	5.5	-
17	0	0	0	5	-
18	0	0.8	1	10	-
19	0	0.7	1	9	-
20	0	0.3	1	6	0.25
21	0	0.2	1	7	-
22	0	0.2	1	5	-
23	0	0.4	1	7	-
24	0	0.3	1	9	-
25	0	0.3	1	10.5	-
26	0	0.4	1	6	-
27	0	0.5	1	5	-
28	0	0.2	1	5.5	-
29	0	0.1	1	5.5	-
30	0	0	0	6	0.5
31	0	0.4	1	7	-
32	0	0.4	1	5.5	-
33	0	0.3	1	8	-
34	0	0.2	1	7	-
35	0	0.5	1	6.5	-
36	0	0.3	1	7	-
37	0	0.3	1	6	-
38	0	0.5	1	1	-
39	0	0.3	1	5	-
40	0	0.4	1	7	0.5
41	0	0.2	1	7	-
42	0	0.2	1	5.5	-
43	0	0.1	1	8	-
44	0	0.4	1	9	-
45	0	0.4	1	6	-
46	0	0.4	1	6	-
47	0	0.5	1	7	-
48	0	0.3	1	6	-
49	0	0.1	1	7	-
50	0	0.4	1	6	0.5
51	0	0.3	1	7	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRUPO-2					
18-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0.3	1	6.5	-
53	0	0.3	1	7.5	-
54	0	0.3	1	4.5	-
55	0	0.4	1	9.5	-
56	0	0.2	1	5.5	-
57	0	0.4	1	6.5	-
58	0	0.2	1	7	-
59	0	0.4	1	8	-
60	0	0.1	1	4.5	0.25
61	0	0.2	1	5	-
62	0	0.1	1	7.5	-
63	0	0.2	1	5	-
64	0	0.3	1	7	-
65	0	0	0	0.2	-
66	0	0.2	1	3	-
67	0	0.4	1	9	-
68	0	0.4	1	10.5	-
69	0	0.3	1	7	-
70	0	0.2	1	6.5	0
71	0	0.5	1	5	-
72	0	0.2	1	6	-
73	0	0.1	1	5	-
74	0	0.4	1	4.5	-
75	0	0.5	1	6	-
76	0	0.1	1	5.5	-
77	0	0.4	1	13	-
78	0	0.2	1	6	-
79	0	0.3	1	12	-
80	0	0	0	4.5	0
81	0	0.4	1	5.5	-
82	0	0.2	1	6	-
83	0	0	0	7	-
84	0	0.4	1	15	-
85	0	0.4	1	6	-
86	0	0.4	1	7	-
87	0	0.7	1	8	-
88	0	0.5	1	6	-
89	0	0.2	1	8	-
90	0	0.3	1	11	0
91	0	0.5	1	6	-
92	0	0.4	1	15.5	-
93	0	0.3	1	6.5	-
94	0	0.4	1	6	-
95	0	0.4	1	11	-
96	0	0.5	1	5.5	-
97	0	0.2	1	6	-
98	0	0.4	1	6.5	-
99	0	0.5	1	5	-
100	0	0.3	1	5	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.33	0.95	7.08	0.25
Binary Calcite Index (CI)	0.95				
Proportional Calcite Index (CI')	0.33				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRUPO-3					
18-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.3	1	6.5	-
2	0	0.1	1	4.5	-
3	0	0.1	1	4	-
4	0	0.2	1	7	-
5	0	0.4	1	4.5	-
6	0	0.3	1	5.5	-
7	0	0.1	1	3.5	-
8	0	0	0	4	-
9	0	0.2	1	6.5	-
10	0	0.1	1	5.5	0.5
11	0	0.4	1	6.5	-
12	0	0.2	1	7	-
13	0	0	0	4	-
14	0	0.1	1	3.5	-
15	0	0.1	1	4	-
16	0	0.1	1	5	-
17	0	0.5	1	5.5	-
18	0	0.4	1	6.5	-
19	0	0.4	1	3	-
20	0	0.4	1	4.5	0.25
21	0	0.5	1	6	-
22	0	0.3	1	6	-
23	0	0	0	5.5	-
24	0	0.2	1	3.5	-
25	0	0.4	1	4	-
26	0	0	0	5	-
27	0	0.3	1	4.5	-
28	0	0.3	1	5	-
29	0	0.4	1	4.5	-
30	0	0.3	1	5.5	0.5
31	0	0.4	1	4	-
32	0	0.2	1	4.5	-
33	0	0.4	1	5.5	-
34	0	0.1	1	6	-
35	0	0.3	1	3	-
36	0	0.3	1	6	-
37	0	0.2	1	4	-
38	0	0.1	1	4.5	-
39	0	0	0	3.5	-
40	0	0.1	1	2	0.25
41	0	0.1	1	5	-
42	0	0.5	1	4.5	-
43	0	0.2	1	8.5	-
44	0	0.2	1	4	-
45	0	0	0	4.5	-
46	0	-	-	0.2	-
47	0	0.3	1	3	-
48	0	0.3	1	6	-
49	0	0.2	1	3	-
50	0	0.6	1	3.5	0.25
51	0	0.3	1	4.5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FRUPO-3					
18-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0.3	1	5	-
53	0	0.5	1	6.5	-
54	0	0.3	1	6	-
55	0	0.4	1	3.5	-
56	0	0.5	1	7	-
57	0	0.1	1	6	-
58	0	0.6	1	3	-
59	0	0.1	1	4.5	-
60	0	0.1	1	5.5	0
61	0	0.4	1	6	-
62	0	0.4	1	4.5	-
63	0	0.5	1	4	-
64	0	0.6	1	7	-
65	0	0.4	1	5.5	-
66	0	0	0	3	-
67	0	0.2	1	4.5	-
68	0	0.7	1	8	-
69	0	0.4	1	5.5	-
70	0	0.4	1	4	0.25
71	0	0.8	1	3	-
72	0	0.4	1	6.5	-
73	0	0.4	1	4.5	-
74	0	0.2	1	4.5	-
75	0	0.7	1	4	-
76	0	0.7	1	5	-
77	0	0.4	1	3	-
78	0	0.6	1	4.5	-
79	0	0	0	3.5	-
80	0	0.4	1	5	0
81	0	0.5	1	2.5	-
82	0	0.1	1	4.5	-
83	0	0.7	1	5.5	-
84	0	0.4	1	7	-
85	0	0.7	1	6	-
86	0	0.9	1	6	-
87	0	0.7	1	7	-
88	0	0.7	1	6	-
89	0	0.1	1	3.5	-
90	0	0.8	1	4.5	0.25
91	0	0.8	1	8	-
92	0	0	0	4	-
93	0	0.7	1	4.5	-
94	0	0.1	1	5	-
95	0	0.9	1	5	-
96	0	0.6	1	6	-
97	0	0.7	1	5.5	-
98	0	1	1	10.5	-
99	0	0.1	1	4.5	-
100	0	0.1	1	3.5	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.34	0.91	4.92	0.25
Binary Calcite Index (CI)	0.91				
Proportional Calcite Index (CI')	0.34				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODPO-1					
18-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	9.5	-
2	0	0	0	3.5	-
3	0	0.3	1	9.5	-
4	0	0	0	7	-
5	0	0.4	1	7.5	-
6	0	0.5	1	9	-
7	0	0	0	3.5	-
8	0	0.2	1	4.5	-
9	0	0.3	1	6	-
10	0	0	0	3.5	0.25
11	0	0	0	0.2	-
12	0	0	0	1.5	-
13	0	0	0	1	-
14	0	0	0	9	-
15	0	0	0	2.5	-
16	0	0	0	3	-
17	0	0.3	1	4.5	-
18	0	0	0	4	-
19	0	0.1	1	4.5	-
20	0	0	0	5.5	0.75
21	0	0	0	7	-
22	0	0.3	1	5.5	-
23	0	0	0	5.5	-
24	0	0	0	5	-
25	0	0	0	1.5	-
26	0	0	0	4.5	-
27	0	0	0	3	-
28	0	0	0	4	-
29	0	0	0	3.5	0
30	0	0	0	4	0
31	0	0	0	2.5	-
32	0	0	0	2.5	-
33	0	0	0	4	-
34	0	0	0	3.5	-
35	0	0	0	1.5	-
36	0	0	0	2.5	-
37	0	0	0	3	-
38	0	0	0	1.5	-
39	0	0	0	2	-
40	0	0	0	2	0
41	0	0	0	1.5	-
42	0	0	0	4	-
43	0	0	0	0.2	-
44	0	0	0	2.5	-
45	0	0	0	2	-
46	0	0	0	2	-
47	0	0	0	3	-
48	0	0	0	4	-
49	0	0	0	2.5	-
50	0	0.2	1	4.5	0.25
51	0	0	0	2.5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODPO-1					
18-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	4	-
53	0	0.1	1	3.5	-
54	0	0	0	3.5	-
55	0	0	0	5	-
56	0	0	0	2.5	-
57	0	0	0	2	-
58	0	0	0	5	-
59	0	0	0	2.5	-
60	0	0	0	1.5	0
61	0	0	0	3.5	-
62	0	0	0	1.5	-
63	0	0	0	1.5	-
64	0	0.1	1	0.2	-
65	0	0	0	3	-
66	0	0	0	4	-
67	0	0	0	3	-
68	0	0	0	3.5	-
69	0	0	0	2	-
70	0	0	0	3	0.25
71	0	0	0	1.5	-
72	0	0	0	1	-
73	0	0	0	5	-
74	0	0	0	3	-
75	0	0.2	1	5	-
76	0	0.3	1	11.5	-
77	0	0	0	5	-
78	0	0	0	6.5	-
79	0	0	0	6	-
80	0	0	0	10	0.5
81	0	0	0	5.5	-
82	0	0	0	5.5	-
83	0	0	0	5.5	-
84	0	0	0	6	-
85	0	0	0	7	-
86	0	0.1	1	9	-
87	0	0	0	3	-
88	0	0	0	4.5	-
89	0	0	0	5	-
90	0	0	0	7.5	0.75
91	0	0	0	8.5	-
92	0	0	0	5.5	-
93	0	0	0	5	-
94	0	0	0	4.5	-
95	0	0	0	2	-
96	0	0	0	3	-
97	0	0	0	1.5	-
98	0	0	0	2.5	-
99	0	0.2	1	7	-
100	0	0.2	1	6.5	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.04	0.16	4.10	0.27
Binary Calcite Index (CI)	0.16				
Proportional Calcite Index (CI')	0.04				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODPO-2					
18-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.1	1	4.5	-
2	0	0	0	6	-
3	0	0	0	3	-
4	0	0	0	1.5	-
5	0	0	0	6	-
6	0	0.1	1	4.5	-
7	0	0.2	1	5	-
8	0	0	0	3	-
9	0	0	0	6	-
10	0	0	0	4	0
11	0	0.4	1	6.5	-
12	0	0	0	5.5	-
13	0	0	0	5	-
14	0	0.1	1	6	-
15	0	0	0	5	-
16	0	0	0	0.2	-
17	0	0	0	4.5	-
18	0	0.2	1	5.5	-
19	0	0	0	0.2	-
20	0	0.1	1	6.5	0.25
21	0	0	0	6	-
22	0	0	0	3.5	-
23	0	0	0	4.5	-
24	0	0	0	1	-
25	0	0.2	1	4	-
26	0	0.5	1	7.5	-
27	0	0	0	4	-
28	0	0.1	1	5	-
29	0	0.3	1	5.5	-
30	0	0.2	1	4.5	0.25
31	0	0	0	4.5	-
32	0	0.1	1	4	-
33	0	0	0	5	-
34	0	0.4	1	5.5	-
35	0	0.5	1	7	-
36	0	0	0	5.5	-
37	0	0.4	1	5.5	-
38	0	0.2	1	3	-
39	0	0	0	2.5	-
40	0	0	0	2	0.5
41	0	0	0	3.5	-
42	0	0	0	4	-
43	0	0.3	1	6	-
44	0	0.1	1	5	-
45	0	0.2	1	4.5	-
46	0	0	0	2.5	-
47	0	0	0	0.5	-
48	0	0.1	1	4	-
49	0	0	0	1.5	-
50	0	0	0	2	0
51	0	0	0	1.5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODPO-2					
18-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	4.5	-
53	0	0	0	4	-
54	0	0	0	0.2	-
55	0	0	0	3	-
56	0	0	0	2	-
57	0	0	0	1	-
58	0	0.2	1	7	-
59	0	0.1	1	2.5	-
60	0	0.3	1	7.5	0.5
61	0	0	0	3.5	-
62	0	0	0	4.5	-
63	0	0.1	1	4.5	-
64	0	0	0	4.5	-
65	0	0.2	1	5.5	-
66	0	0.4	1	6.5	-
67	0	0	0	3	-
68	0	0	0	0.5	-
69	0	0.1	1	3	-
70	0	0	0	2	0
71	0	0	0	4	-
72	0	0	0	2.5	-
73	0	0.2	1	3.5	-
74	0	0.1	1	3	-
75	0	0	0	2.5	-
76	0	0.1	1	2.5	-
77	0	0	0	1.5	-
78	0	0	0	1	-
79	0	0.3	1	5	-
80	0	0.1	1	6.5	0.25
81	0	0	0	3	-
82	0	0.1	1	2.5	-
83	0	0	0	4	-
84	0	0	0	2	-
85	0	0	0	6.5	-
86	0	0.1	1	5.5	-
87	0	0	0	0.2	-
88	0	0.1	1	4	-
89	0	0.2	1	5	-
90	0	0.2	1	3	0.25
91	0	0.3	1	7	-
92	0	0.1	1	8	-
93	0	0	0	2	-
94	0	0	0	4	-
95	0	0	0	4.5	-
96	0	0	0	0.2	-
97	0	0	0	3.5	-
98	0	0.1	1	5.5	-
99	0	0	0	3.5	-
100	0	0	0	3	0
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.08	0.41	3.92	0.20
Binary Calcite Index (CI)	0.41				
Proportional Calcite Index (CI')	0.08				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODPO-3					
18-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.8	1	6.5	-
2	0	0.4	1	5	-
3	0	0.3	1	6	-
4	0	0.1	1	4	-
5	0	0.1	1	11	-
6	0	0	0	3.5	-
7	0	0	0	6	-
8	0	0.2	1	7	-
9	0	0	0	7.5	-
10	0	0	0	7.5	0
11	0	0.3	1	8.5	-
12	0	0	0	7.5	-
13	0	0	0	3.5	-
14	0	0.14	1	5	-
15	0	0	0	6.5	-
16	0	0.2	1	6	-
17	0	0.6	1	5	-
18	0	0.4	1	9.5	-
19	0	0.1	1	5.5	-
20	0	0	0	5	0.25
21	0	0	0	6	-
22	0	0.2	1	5	-
23	0	0	0	8.5	-
24	0	0.2	1	5.5	-
25	0	0	0	5.5	-
26	0	0.3	1	4	-
27	0	0.1	1	4	-
28	0	0.5	1	5.5	-
29	0	0.2	1	5	-
30	0	0	0	3	0.25
31	0	0	0	2.5	-
32	0	0	0	6	-
33	0	0.1	1	4.5	-
34	0	0.3	1	5	-
35	0	0.4	1	6	-
36	0	0.5	1	6.5	-
37	0	0.2	1	6.5	-
38	0	0.3	1	5.5	-
39	0	0.4	1	5.5	-
40	0	0	0	2	0.25
41	0	0.3	1	8.5	-
42	0	0.4	1	7.5	-
43	0	0.8	1	6	-
44	0	0.3	1	4.5	-
45	0	0	0	6.5	-
46	0	0.4	1	9	-
47	0	0	0	6.5	-
48	0	0	0	6.5	-
49	0	0	0	6	-
50	0	0.2	1	5.5	0.25
51	0	0.4	1	8	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FODPO-3					
18-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0.6	1	8	-
53	0	0.4	1	7.5	-
54	0	0.5	1	8.5	-
55	0	0.6	1	6.5	-
56	0	0.6	1	8	-
57	0	0.9	1	6	-
58	0	0.7	1	7.5	-
59	0	0	0	6.5	-
60	0	0.3	1	8	0.75
61	0	0.4	1	7.5	-
62	0	0.5	1	7	-
63	0	0.2	1	4.5	-
64	0	0.6	1	5	-
65	0	0.2	1	2.5	-
66	0	0.6	1	6.5	-
67	0	0.3	1	4	-
68	0	0.6	1	8.5	-
69	0	0.6	1	6.5	-
70	0	0.8	1	6	0.75
71	0	0	0	7.5	-
72	0	0.5	1	7.5	-
73	0	0.1	1	4	-
74	0	0.3	1	6	-
75	0	0	0	5.5	-
76	0	0	0	7.5	-
77	0	0.1	1	8	-
78	0	0	0	3	-
79	0	0.2	1	5.5	-
80	0	0.1	1	6	0.25
81	0	0.4	1	5.5	-
82	0	0	0	5.5	-
83	0	0	0	7	-
84	0	0	0	4	-
85	0	0	0	4	-
86	0	0.1	1	4	-
87	0	0	0	5.5	-
88	0	0.6	1	5.5	-
89	0	0.2	1	6.5	-
90	0	0	0	4.5	0
91	0	0	0	4.5	-
92	0	0.1	1	11	-
93	0	0	0	5.5	-
94	0	0	0	3	-
95	0	0	0	5.5	-
96	0	0	0	4	-
97	0	0	0	3.5	-
98	0	0	0	2.5	-
99	0	0	0	8	-
100	0	0	0	5	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.22	0.61	5.92	0.30
Binary Calcite Index (CI)	0.61				
Proportional Calcite Index (CI')	0.22				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FO22-1					
9-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	0.001	-
2	0	0	0	0.2	-
3	0	0	0	1.2	-
4	0	0	0	0.2	-
5	0	0	0	0.9	-
6	0	0	0	0.001	-
7	0	0	0	0.2	-
8	0	0	0	0.2	-
9	0	0	0	1.3	-
10	0	0	0	0.2	1
11	0	0	0	0.2	-
12	0	0	0	0.2	-
13	0	0	0	0.2	-
14	0	0	0	0.2	-
15	0	0	0	0.2	-
16	0	0	0	0.2	-
17	0	0	0	4.2	-
18	0	0	0	2.9	-
19	0	0	0	1.1	-
20	0	0	0	1.1	0.75
21	0	0	0	3.2	-
22	0	0	0	0.2	-
23	0	0	0	1.2	-
24	0	0	0	1.6	-
25	0	0	0	0.2	-
26	0	0	0	1.1	-
27	0	0	0	2	-
28	0	0	0	0.2	-
29	0	0	0	0.2	-
30	0	0	0	0.2	1
31	0	0	0	1.2	-
32	0	0	0	4	-
33	0	0	0	0.8	-
34	0	0	0	1.9	-
35	0	0	0	0.2	-
36	0	0	0	0.2	-
37	0	0	0	1.6	-
38	0	0	0	2.7	-
39	0	0	0	0.2	-
40	0	0	0	0.8	0.75
41	0	0	0	0.75	-
42	0	0	0	1.41	-
43	0	0	0	0.2	-
44	0	0	0	0.9	-
45	0	0	0	0.4	-
46	0	0	0	2.4	-
47	0	0	0	2	-
48	0	0	0	1.2	-
49	0	0	0	0.2	-
50	0	0	0	2.8	0.75
51	0	0	0	1.2	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FO22-1					
9-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	2.3	-
53	0	0	0	1.9	-
54	0	0	0	0.8	-
55	0	0	0	1.2	-
56	0	0	0	4.9	-
57	0	0.1	1	2.7	-
58	0	0	0	1.6	-
59	0	0.2	1	4.2	-
60	0	0	0	4.1	0.5
61	0	0	0	1.2	-
62	0	0	0	0.2	-
63	0	0	0	2.8	-
64	0	0	0	0.8	-
65	0	0	0	0.4	-
66	0	0	0	2	-
67	0	0	0	0.2	-
68	0	0	0	2	-
69	0	0	0	0.2	-
70	0	0	0	2.3	0.75
71	0	0	0	1	-
72	0	0	0	1.9	-
73	0	0	0	1.8	-
74	0	0	0	1.5	-
75	0	0	0	3	-
76	0	0	0	2.9	-
77	0	0	0	1.4	-
78	0	0	0	1	-
79	0	0	0	0.2	-
80	0	0	0	0.2	1
81	0	0	0	0.4	-
82	0	0	0	2	-
83	0	0	0	0.2	-
84	0	0	0	0.6	-
85	0	0	0	1	-
86	0	0	0	0.2	-
87	0	0	0	0.7	-
88	0	0	0	1.5	-
89	0	0	0	2	-
90	0	0	0	1.2	0.75
91	0	0	0	1	-
92	0	0	0	1.8	-
93	0	0	0	1.7	-
94	0	0	0	1.5	-
95	0	0	0	1.2	-
96	0	0	0	0.2	-
97	0	0	0	1.8	-
98	0	0	0	1	-
99	0	0	0	0.2	-
100	0	0	0	3.2	0.75
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.00	0.02	1.26	0.80
Binary Calcite Index (CI)	0.02				
Proportional Calcite Index (CI')	0.00				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FO22-2					
9-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	2.8	-
2	0	0	0	0.2	-
3	0	0	0	1	-
4	0	0	0	2	-
5	0	0	0	0.2	-
6	0	0	0	0.8	-
7	0	0	0	2.6	-
8	0	0	0	2.5	-
9	0	0	0	0.2	-
10	0	0	0	1.8	-
11	0	0	0	0.5	0.75
12	0	0	0	1.4	-
13	0	0	0	0.7	-
14	0	0	0	0.2	-
15	0	0	0	1.2	-
16	0	0	0	2.3	-
17	0	0	0	0.2	-
18	0	0	0	1.1	-
19	0	0	0	0.9	-
20	0	0	0	1.5	0.75
21	0	0	0	0.2	-
22	0	0	0	1.6	-
23	0	0	0	0.2	-
24	0	0	0	0.8	-
25	0	0	0	0.2	-
26	0	0	0	0.6	-
27	0	0	0	0.2	-
28	0	0	0	0.8	-
29	0	0.3	1	1.4	0.5
30	0	0	0	2.1	-
31	0	0	0	2.2	-
32	0	0	0	0.2	-
33	0	0	0	2.1	-
34	0	0	0	1.2	-
35	0	0	0	2.1	-
36	0	0	0	0.2	-
37	0	0	0	1.4	-
38	0	0	0	0.001	-
39	0	0	0	0.001	-
40	0	0	0	0.001	1
41	0	0	0	1.3	-
42	0	0	0	1.4	-
43	0	0	0	2.8	-
44	0	0	0	2.4	-
45	0	0.1	1	2.5	-
46	0	0	0	3.2	-
47	0	0	0	0.2	-
48	0	0	0	1.1	-
49	0	0	0	1.2	-
50	0	0	0	2.2	-
51	0	0.2	1	5.4	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FO22-2					
9-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	2.9	-
53	0	0	0	3	-
54	0	0.2	1	4.6	-
55	0	0	0	3.6	-
56	0	0	0	2.4	-
57	0	0	0	2.9	-
58	0	0	0	2.1	-
59	0	0	0	5.6	-
60	0	0	0	4.1	0.25
61	0	0	0	4.6	-
62	0	0	0	2.5	-
63	0	0.2	1	3.9	-
64	0	0	0	2.9	-
65	0	0	0	2.3	-
66	0	0	0	3.6	-
67	0	0	0	1.8	-
68	0	0	0	0.2	-
69	0	0	0	2.1	-
70	0	0.4	1	2	0.75
71	0	0	0	1.4	0
72	0	0	0	1.4	-
73	0	0	0	1.5	0.5
74	0	0	0	4.6	-
75	0	0	0	0.2	-
76	0	0	0	1.1	-
77	0	0	0	0.5	-
78	0	0	0	0.2	-
79	0	0	0	1.6	-
80	0	0	0	0.4	-
81	0	0	0	1.3	-
82	0	0	0	1.4	-
83	0	0	0	0.8	-
84	0	0	0	0.7	-
85	0	0	0	0.2	-
86	0	0.1	1	2.1	-
87	0	0	0	2.4	-
88	0	0	0	1.6	-
89	0	0.1	1	1.6	-
90	0	0	0	3.1	-
91	0	0	0	1.4	0.25
92	0	0	0	2.3	-
93	0	0	0	2.9	-
94	0	0	0	1.6	-
95	0	0.1	1	3.7	-
96	0	0	0	2.4	-
97	0	0	0	1.9	-
98	0	0	0	1.5	0.25
99	0	0	0	3.4	-
100	0	0	0	1.3	-
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.02	0.09	1.73	0.50
Binary Calcite Index (CI)	0.09				
Proportional Calcite Index (CI')	0.02				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FO22-3					
9-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	3	-
2	0	0	0	0.2	-
3	0	0	0	2	-
4	0	0	0	2.5	-
5	0	0	0	2.2	-
6	0	0	0	1.8	-
7	0	0	0	1.2	-
8	0	0	0	1.5	-
9	0	0	0	3.9	-
10	0	0	0	1.7	0.5
11	0	0.4	1	3.3	-
12	0	0	0	3.3	-
13	0	0	0	0.2	-
14	0	0	0	1.2	-
15	0	0.3	1	3.6	-
16	0	0.3	1	4.1	-
17	0	0	0	0.2	-
18	0	0	0	0.3	-
19	0	0	0	1.4	-
20	0	0.2	1	0.2	1
21	0	0.3	1	3	-
22	0	0	0	1.9	-
23	0	0.1	1	2	-
24	0	0	0	1.1	-
25	0	0.3	1	2.4	-
26	0	0.2	1	2.3	-
27	0	0	0	0.8	-
28	0	0.2	1	2.8	-
29	0	0	0	0.9	-
30	0	0	0	2.8	0.5
31	0	0	0	0.2	-
32	0	0.4	1	1.6	-
33	0	0.4	1	4.3	-
34	0	0	0	0.2	-
35	0	0.4	1	3.4	-
36	0	0.1	1	2.1	-
37	0	0.2	1	2.1	-
38	0	0	0	2.8	-
39	0	0.6	1	1.6	-
40	0	0.3	1	3.9	0
41	0	0	0	2.5	-
42	0	0	0	1.8	-
43	0	0	0	3.1	-
44	0	0.3	1	3.3	-
45	0	0	0	1.4	-
46	0	0	0	0.2	-
47	0	0.1	1	1.5	-
48	0	0.5	1	2	-
49	0	0	0	0.9	-
50	0	0	0	0.9	0.75
51	0	0	0	1.2	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FO22-3					
9-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	1	0	0	4.4	-
53	0	0	0	1.4	-
54	0	0.9	1	2.4	-
55	0	0.3	1	1.4	-
56	0	0	0	0.2	-
57	0	0	0	2.1	-
58	0	0.2	1	1.3	-
59	0	0	0	2.1	-
60	0	0.4	1	1.5	0.5
61	0	0.5	1	1.9	-
62	0	0	0	1.1	-
63	0	0.6	1	2.4	-
64	0	0	0	2.8	-
65	0	0	0	1.1	-
66	0	0.9	1	3.4	-
67	0	0	0	3.4	-
68	1	0.8	1	4.4	-
69	0	0.8	1	3.4	-
70	0	0.5	1	1.6	0.5
71	0	0	0	1.9	-
72	0	0.5	1	4.4	-
73	0	0.2	1	4.2	-
74	0	0.4	1	4.5	-
75	0	0.4	1	2.1	-
76	0	0.5	1	2.9	-
77	0	0	0	0.2	-
78	0	0	0	1.4	-
79	0	0.3	1	1.6	-
80	0	0.2	1	1.4	0.75
81	0	0	0	2.5	-
82	0	0	0	1.3	-
83	0	0.2	1	2.6	-
84	0	0	0	3.6	-
85	0	0	0	1.4	-
86	0	0.8	1	5.6	-
87	0	0	0	0.2	-
88	0	0.3	1	1.4	-
89	0	0	0	1.5	-
90	0	0	0	1.8	0.5
91	0	0	0	2.1	-
92	0	0.1	1	5.5	-
93	0	0	0	3.5	-
94	0	0	0	1.9	-
95	0	0.3	1	4.1	-
96	0	0	0	1.1	-
97	0	0.9	1	3.4	-
98	0	0	0	1.6	-
99	0	0.1	1	2.3	-
100	0	1	1	2.5	0.75
Average Cp, Cc, intermediate axis, and Embeddedness	0.02	0.18	0.44	2.16	0.58
Binary Calcite Index (CI)	0.46				
Proportional Calcite Index (CI')	0.20				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FO22-4					
9-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	0.7	-
2	0	0	0	0.2	-
3	0	0	0	1.2	-
4	0	0	0	2.5	-
5	0	0	0	1.1	-
6	0	0	0	1.6	-
7	0	0	0	2.6	-
8	0	0.1	1	1.7	-
9	0	0	0	4.4	-
10	0	0	0	2.1	-
11	0	0	0	0.2	1
12	0	0	0	1.3	-
13	0	0.1	1	3.9	-
14	0	0.9	1	3.5	-
15	0	0	0	0.6	-
16	0	0	0	1.2	-
17	0	0.1	1	4.7	-
18	0	0	0	0.2	-
19	0	0.4	1	2	-
20	0	0	0	2.1	-
21	0	1	1	2.6	0.75
22	0	0.2	1	2.7	-
23	0	0	0	2.1	-
24	0	1	1	2.6	-
25	0	0	0	3.2	-
26	0	0.5	1	2	-
27	0	0	0	2.4	-
28	0	0	0	0.2	-
29	0	0	0	0.6	-
30	0	0	0	1.9	0.25
31	0	0	0	0.2	-
32	0	0	0	1.3	-
33	0	0	0	0.2	-
34	0	0.1	1	3.4	-
35	0	0	0	1.3	-
36	0	0	0	3.6	-
37	0	0	0	3.6	-
38	0	0	0	1.9	-
39	0	0	0	0.6	-
40	0	0.1	1	4.5	-
41	0	0	0	2.1	-
42	0	0.2	1	3.6	0.5
43	0	0	0	1.9	-
44	0	0	0	3.9	-
45	0	0	0	1.3	-
46	0	0	0	4.1	-
47	0	0	0	0.9	-
48	0	0.1	1	3.9	-
49	0	0	0	2.4	-
50	0	0	0	1.8	0.25
51	0	0	0	1.2	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FO22-4					
9-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	3.3	-
53	0	0	0	5.5	-
54	0	0	0	3.9	-
55	0	0	0	3.6	-
56	0	0.3	1	3.3	-
57	0	0	0	0.2	-
58	0	0	0	3.7	-
59	0	0	0	0.9	-
60	0	0	0	2.3	0.25
61	0	0.2	1	2.3	-
62	0	0	0	1.4	-
63	0	0	0	2.8	-
64	0	0	0	4.5	-
65	0	0	0	1.7	-
66	0	0	0	1.9	-
67	0	0	0	3.2	-
68	0	0.2	1	1.5	-
69	0	0	0	3.4	-
70	0	0	0	4.1	-
71	0	0.3	1	3.2	-
72	0	0	0	1.7	-
73	0	0.5	1	3.7	0.5
74	0	0	0	2	-
75	0	0	0	2.5	-
76	0	0.3	1	2.5	-
77	0	0	0	2.9	-
78	0	0	0	0.2	-
79	0	0	0	1.9	0.25
80	0	0.1	1	6.2	-
81	0	0.4	1	3.3	-
82	0	0	0	2.4	-
83	0	0	0	2.3	-
84	0	0	0	1.4	-
85	0	0	0	3.3	-
86	0	0	0	1.7	-
87	0	0.1	1	3.1	-
88	0	0	0	3.2	-
89	0	0	0	1.6	-
90	0	0	0	1.7	0.75
91	0	0	0	4.2	-
92	0	0	0	1.1	-
93	0	0	0	2.3	-
94	0	0.5	1	3.1	-
95	0	0	0	1.9	-
96	0	0.2	1	1.7	-
97	0	0	0	1.4	-
98	0	0	0	1.2	-
99	0	0.1	1	2.7	-
100	0	0	0	3.1	0.25
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.08	0.25	2.33	0.48
Binary Calcite Index (CI)	0.25				
Proportional Calcite Index (CI')	0.08				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_F022-5					
9-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	2.2	-
2	0	0.2	1	2.2	-
3	0	0.5	1	3	-
4	0	0	0	0.2	-
5	0	0.7	1	3.4	-
6	0	0.7	1	2.1	-
7	0	0	0	0.2	-
8	0	0	0	1.5	-
9	0	0	0	0.2	-
10	0	0.3	1	3.6	0.5
11	0	0	0	1.9	-
12	0	0.5	1	3	-
13	0	0.1	1	3.8	-
14	0	0	0	0.2	-
15	0	0.4	1	4	-
16	0	0	0	3.8	-
17	0	0.2	1	2.1	-
18	0	0	0	0.2	-
19	0	0.4	1	4.7	-
20	0	0	0	0.2	1
21	0	0.3	1	2.3	-
22	0	0.1	1	2.5	-
23	0	0	0	3	-
24	0	0	0	1.3	-
25	0	0	0	1.2	-
26	0	0	0	1	-
27	0	0	0	0.2	-
28	0	0	0	3.4	-
29	0	0	0	0.2	-
30	0	0	0	1.4	0.25
31	0	0	0	3.5	-
32	0	0	0	0.8	-
33	0	0	0	1.4	-
34	0	0.8	1	3.5	-
35	0	0	0	1.8	-
36	0	0	0	1.6	-
37	0	0.6	1	3.9	-
38	0	0	0	0.2	-
39	0	0	0	2	-
40	0	0	0	2	0.25
41	0	0.5	1	1.2	-
42	0	0	0	2.5	-
43	0	0	0	0.2	-
44	0	0.2	1	3.5	-
45	0	0	0	3.1	-
46	0	0	0	0.2	-
47	0	0.5	1	3.9	-
48	0	0	0	0.4	-
49	0	0.3	1	2.6	-
50	0	0	0	2.6	0.5
51	0	0.4	1	2.1	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FO22-5					
9-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0.4	1	2.4	-
53	0	0.2	1	5.5	-
54	0	0	0	0.7	-
55	0	0	0	1.1	-
56	0	0.1	1	3.5	-
57	0	0	0	3.7	-
58	0	0.2	1	4.2	-
59	0	0	0	1.1	-
60	0	0.2	1	2.1	0.5
61	0	0.3	1	4.5	-
62	0	0.1	1	2.3	-
63	0	0	0	0.2	-
64	0	0	0	0.2	-
65	0	0.9	1	3.2	-
66	0	0.9	1	6.5	-
67	0	0.5	1	2.4	-
68	0	0.4	1	5.8	-
69	0	0.1	1	2.1	-
70	0	0.4	1	5.9	0.5
71	0	0.3	1	3.8	-
72	0	0	0	1.5	-
73	0	0	0	2.4	-
74	0	0	0	0.9	-
75	0	0	0	2.5	-
76	0	0	0	1.2	-
77	0	0.4	1	8.5	-
78	0	0	0	0.9	-
79	0	0	0	0.2	-
80	0	0	0	1.2	0.5
81	0	0	0	3.9	-
82	0	0	0	1	-
83	0	0.1	1	1.2	-
84	0	0	0	0.2	-
85	0	0.1	1	1.6	-
86	0	0	0	0.2	-
87	0	0	0	2.3	-
88	0	0.2	1	2.2	-
89	0	0	0	0.6	-
90	0	0.2	1	3.2	0.75
91	0	0	0	3.2	-
92	0	0	0	3.2	-
93	0	0	0	1.6	-
94	0	0	0	1.9	-
95	0	0	0	1.9	-
96	0	0	0	2.6	-
97	0	0.3	1	2.5	-
98	0	0	0	0.2	-
99	0	0	0	2.2	-
100	0	0	0	2.6	0.75
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.14	0.39	2.21	0.55
Binary Calcite Index (CI)	0.39				
Proportional Calcite Index (CI')	0.14				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUW-1					
10-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	2.9	-
2	0	0	0	1.3	-
3	0	0	0	0.2	-
4	0	0	0	3.2	-
5	0	0	0	0.2	-
6	0	0	0	1.5	-
7	0	0.1	1	13	-
8	0	0	0	12.5	-
9	0	0	0	0.001	-
10	0	0	0	41	0.75
11	0	0	0	1.8	-
12	0	0	0	0.2	-
13	0	0	0	3.9	-
14	0	0	0	0.001	-
15	0	0	0	3.3	-
16	0	0	0	0.001	-
17	0	0	0	0.001	-
18	0	0	0	4.8	-
19	0	0	0	0.2	-
20	0	0	0	5.1	0.5
21	0	0	0	2.9	-
22	0	0	0	3.3	-
23	0	0	0	2.9	-
24	0	0	0	4.5	-
25	0	0	0	0.2	-
26	0	0	0	3.6	-
27	0	0	0	0.2	-
28	0	0	0	5.1	-
29	0	0	0	3.9	-
30	0	0	0	6.9	0.25
31	0	0	0	8.2	-
32	0	0	0	4.2	-
33	0	0	0	5.2	-
34	0	0	0	7.2	-
35	0	0	0	7.9	-
36	0	0	0	7.2	-
37	0	0	0	0.2	-
38	0	0.1	1	12.5	-
39	0	0	0	4.2	-
40	0	0	0	7	0.5
41	0	0	0	8.5	-
42	0	0	0	11	-
43	0	0	0	5.5	-
44	0	0	0	6.5	-
45	0	0.3	1	20	-
46	0	0	0	8.9	-
47	0	0	0	26	-
48	0	-	-	25	-
49	-	-	-	30	-
50	0	0	0	16	0.5
51	-	-	-	2.4	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUW-1					
10-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	11.5	-
53	0	0	0	9.1	-
54	0	0	0	9.5	-
55	0	0	0	0.2	-
56	0	0	0	3.2	-
57	0	0	0	16	-
58	-	-	-	9.5	-
59	0	0	0	8.8	-
60	-	-	-	2.5	0.75
61	0	0	0	3.2	-
62	0	0	0	13.5	-
63	0	0	0	20	-
64	0	0	0	14	-
65	0	0.4	1	13.5	-
66	-	-	-	9.5	-
67	0	0.2	1	18	-
68	0	0.3	1	12.7	-
69	0	0	0	9.2	-
70	-	-	-	15	0.75
71	0	0	0	4	-
72	-	-	-	15	-
73	0	0	0	11	-
74	0	0	0	12	-
75	0	0.3	1	10	-
76	0	0	0	6.5	-
77	0	0	0	7.2	-
78	0	0	0	12	-
79	0	0	0	0.2	-
80	0	0	0	10	0.5
81	0	0	0	5	-
82	0	0	0	0.2	-
83	0	0.1	1	10.5	-
84	0	0	0	0.2	-
85	0	0	0	9.5	-
86	0	0	0	11	-
87	0	0	0	9.2	-
88	0	0	0	10	-
89	0	0	0	8.7	-
90	0	0	0	17.5	0.25
91	0	0	0	11.2	-
92	0	0	0	11.7	-
93	0	0.3	1	18	-
94	0	0	0	3.4	-
95	0	0	0	0.2	-
96	0	0	0	6	-
97	0	0	0	7	-
98	0	0	0	6.4	-
99	0	0	0	8.7	-
100	0	0	0	3.5	0.5
Average Cp, Cc, intermediate axis, and Embeddedness	0.00	0.02	0.10	7.97	0.53
Binary Calcite Index (CI)	0.10				
Proportional Calcite Index (CI')	0.02				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUW-2					
10-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0	0	7.4	-
2	0	0.2	1	4.8	-
3	0	0	0	17	-
4	0	0	0	3	-
5	0	0	0	5.9	-
6	0	0	0	4.9	-
7	0	0	0	4	-
8	0	0.2	1	2	-
9	0	0.4	1	7.9	-
10	0	0	0	3.9	0.25
11	0	0.2	1	7.3	-
12	0	0.4	1	5.1	-
13	0	0.5	1	8.6	-
14	0	1	1	7	-
15	0	1	1	4.2	-
16	0	0	0	6.9	-
17	0	0.2	1	7.2	-
18	0	0	0	4.5	-
19	0	0	0	5.5	-
20	0	0.2	1	5.5	0.25
21	0	0	0	2.5	-
22	0	0.1	1	4.2	-
23	0	0	0	5.1	-
24	0	0.6	1	6.1	-
25	0	0	0	3.6	-
26	0	0	0	6.1	-
27	0	0	0	5.5	-
28	0	0.4	1	10.5	-
29	0	0	0	8.1	-
30	0	0.9	1	12	0.5
31	0	0.4	1	7.9	-
32	0	0.6	1	10.5	-
33	0	0.5	1	10.1	-
34	0	0	0	0.2	-
35	0	0	0	0.001	-
36	0	0.1	1	7.2	-
37	0	0.5	1	4.3	-
38	0	0.2	1	2.9	-
39	0	0	0	1.2	-
40	0	0.6	1	11.1	0.75
41	0	0.4	1	7.2	-
42	0	0	0	2.3	-
43	0	0	0	0.2	-
44	0	0	0	0.001	-
45	0	0.1	1	4.5	-
46	0	0	0	0.001	-
47	0	0.3	1	2.5	-
48	0	0.4	1	4.9	-
49	0	0.6	1	5.6	-
50	0	0.7	1	4.2	0.25
51	0	0	0	0.001	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOUW-2					
10-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	0	0	0	11.5	-
53	0	0	0	12.4	-
54	0	0	0	0.001	-
55	0	0.6	1	6.9	-
56	0	0	0	7.6	-
57	0	0	0	0.2	-
58	0	0	0	0.3	-
59	0	0	0	0.001	-
60	0	0.1	1	3.2	0.5
61	0	0	0	1.6	-
62	0	0.2	1	12.4	-
63	0	0	0	4.8	-
64	0	0.3	1	3.4	-
65	0	0	0	5.5	-
66	0	0.3	1	4.5	-
67	0	0	0	3.1	-
68	0	0	0	3.1	-
69	0	0	0	0.2	-
70	0	0.4	1	8.9	0.5
71	0	0.5	1	6.9	-
72	0	0	0	16.5	-
73	0	0.8	1	7	-
74	0	0.6	1	7	-
75	0	0.1	1	6.8	-
76	0	0.5	1	8.5	-
77	0	0.3	1	9.1	-
78	1	0.9	1	10.1	-
79	0	0.3	1	3.4	-
80	1	0.6	1	6.1	0.25
81	0	0.4	1	6.6	-
82	0	0.5	1	9.6	-
83	1	0.8	1	6.6	-
84	0	0.8	1	5.9	-
85	0	0	0	3.4	-
86	0	0.4	1	6.9	-
87	0	0.3	1	6.1	-
88	0	0.4	1	14	-
89	0	0	0	0.2	-
90	0	0.1	1	5.6	0.75
91	0	0	0	3.5	-
92	0	0.2	1	5.6	-
93	0	0.1	1	3.3	-
94	0	0	0	4.8	-
95	0	0	0	0.2	-
96	0	0	0	5	-
97	1	0.8	1	9	-
98	1	0.7	1	7	-
99	0	0.9	1	8	-
100	1	0.8	1	6.2	0.75
Average Cp, Cc, intermediate axis, and Embeddedness	0.06	0.25	0.56	5.62	0.48
Binary Calcite Index (CI)	0.62				
Proportional Calcite Index (CI')	0.31				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOU EW-3					
10-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
1	0	0.2	1	6.6	-
2	0	0	0	0.2	-
3	0	0	0	1.2	-
4	0	0	0	5	-
5	1	0.4	1	1.1	-
6	1	0.4	1	2.1	-
7	1	0.5	1	1.9	-
8	2	0.3	1	4.1	-
9	1	0.5	1	2.5	-
10	1	0.2	1	0.2	1
11	0	0.1	1	6	-
12	2	0.5	1	10	-
13	0	0.6	1	7	-
14	1	0.6	1	5.6	-
15	0	0.3	1	3.1	-
16	1	0.6	1	5.2	-
17	2	0.5	1	4.2	-
18	2	0.5	1	5	-
19	0	0.5	1	5.5	-
20	0	0.2	1	1.3	0.75
21	-	1	1	0.2	-
22	1	0.6	1	6	-
23	1	0.5	1	5.5	-
24	0	0.7	1	6.1	-
25	0	0	0	4.3	-
26	0	0	0	2	-
27	0	0.3	1	9	-
28	2	1	1	0.2	-
29	0	0.2	1	5.3	-
30	1	0.7	1	7.1	0.5
31	0	0.6	1	4	-
32	1	0.8	1	8.9	-
33	1	0.8	1	5	-
34	1	0.6	1	8.5	-
35	2	1	1	0.2	-
36	0	0.3	1	4	-
37	2	1	1	0.2	-
38	0	0.6	1	5.5	-
39	2	0.5	1	10	-
40	2	0.5	1	5	0.5
41	0	0.5	1	2.5	-
42	2	1	1	0.2	-
43	1	0.9	1	2.5	-
44	2	1	1	101	-
45	2	0.5	1	0.6	-
46	2	1	1	101	-
47	0	0.6	1	4.2	-
48	2	1	1	101	-
49	2	0.5	1	4.2	-
50	1	0.7	1	5.6	0.5
51	2	0.5	1	4.5	-

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.4: Pebble Counts and Calcite Measurements at Benthic Invertebrate Sampling Locations, FRO LAEMP, September 2022

RG_FOU EW-3					
10-Sep-22					
Pebble	Concreted Status	Calcite Proportion	Calcite Presence	Intermediate Axis (cm)	Embedded-ness (%)
52	1	0.8	1	9	-
53	1	0.5	1	4.6	-
54	2	0.5	1	9	-
55	0	0.5	1	6.7	-
56	0	0.4	1	3.5	-
57	0	0.4	1	4	-
58	0	0.6	1	13	-
59	0	0	0	1.5	-
60	0	0	0	5.4	0.75
61	0	0.8	1	8	-
62	0	0.3	1	4	-
63	1	0.4	1	4.5	-
64	0	0	0	0.2	-
65	0	0	0	2.3	-
66	0	0	0	5	-
67	0	0	0	1.4	-
68	0	0	0	2.3	-
69	0	0.7	1	3.8	-
70	1	0.6	1	1.6	0.75
71	2	0.5	1	4.2	-
72	2	1	1	101	-
73	2	0.5	1	5.7	-
74	0	0	0	3.2	-
75	0	0	0	0.2	-
76	0	0.4	1	4.3	-
77	0	0.5	1	5.2	-
78	0	0.5	1	9.2	-
79	0	0.3	1	8	-
80	1	0.5	1	2.9	0.75
81	2	0.5	1	5.7	-
82	0	0.5	1	6	-
83	0	0	0	0.2	-
84	2	0.5	1	5.8	-
85	0	0.1	1	1.7	-
86	2	0.5	1	4.5	-
87	1	0.5	1	8.1	-
88	0	0.3	1	4.2	-
89	2	0.5	1	6.1	-
90	1	0.3	1	5.5	0.75
91	0	0.5	1	5.1	-
92	1	0.4	1	4.2	-
93	2	0.5	1	4.3	-
94	0	0.6	1	2.1	-
95	0	0	0	0.2	-
96	0	0.3	1	3.1	-
97	1	0.4	1	6.2	-
98	0	0.1	1	3.9	-
99	2	0.5	1	6.3	-
100	2	1	1	101	1
Average Cp, Cc, intermediate axis, and Embeddedness	0.79	0.46	0.84	9.2	0.73
Binary Calcite Index (CI)	1.63				
Proportional Calcite Index (CI')	1.24				

Notes: nm = not measurable, "-" indicates no data. Intermediate axis is the measurement across the intermediate axis of the pebble and presented in centimeters. Cp represents calcite presence score; Cc represents calcite concretion score; CI represents the calcite index determined by calcite presence; CI' represents calcite index determined by fraction of pebble covered in calcite.

Table I.5: Calcite Index Values, FRO LAEMP, September 2022

Biological Monitoring Area		Calcite Reach	Regional Calcite Monitoring Program Calcite Index Within Reaches		Calcite Index at Benthic Invertebrate Monitoring Areas Within Riffles	
			CI	CI'	CI	CI'
Reference	RG_HENUP	HENR3	0.017	0.0057	0.00	0.00
	RG_FO26	FORD12	0.15	0.034	0.03	0.00
Mine-Exposed	RG_FODHE	FORD11	0.21	0.035	0.09	0.01
	RG_FOUCL				0.01	0.00
	RG_FOUNGD				0.39	0.11
	RG_FODNGD	-	-	-	0.58	0.12
	RG_MP1	FORD10	0.45	0.12	0.42	0.09
	RG_FOUSH				0.43	0.09
	RG_FOUKI				0.33	0.08
	RG_SCOUTDS	FORD9	0.43	0.10	0.48	0.09
	RG_FOBKS				0.19	0.12
	RG_FOBSC				0.18	0.04
	RG_FOBBCP				0.23	0.10
	RG_FRCP1SW				0.48	0.10
	RG-FRSCH2	FORD8	0.70	0.31	0.85	0.34
	RG_FRUPO				0.88	0.30
	RG_FODPO				0.39	0.11
	RG_FO22				0.24	0.09
RG_FOU EW	FORD7/6	1.1	0.80	0.78	0.52	

Notes: "-" indicates that no calcite monitoring was completed.
 CI represents calcite index determined by presence and CI' represents calcite index determined by fraction of rock having calcite.

APPENDIX

WESTSLOPE CUTTHROAT TROUT (WCT) HEALTH

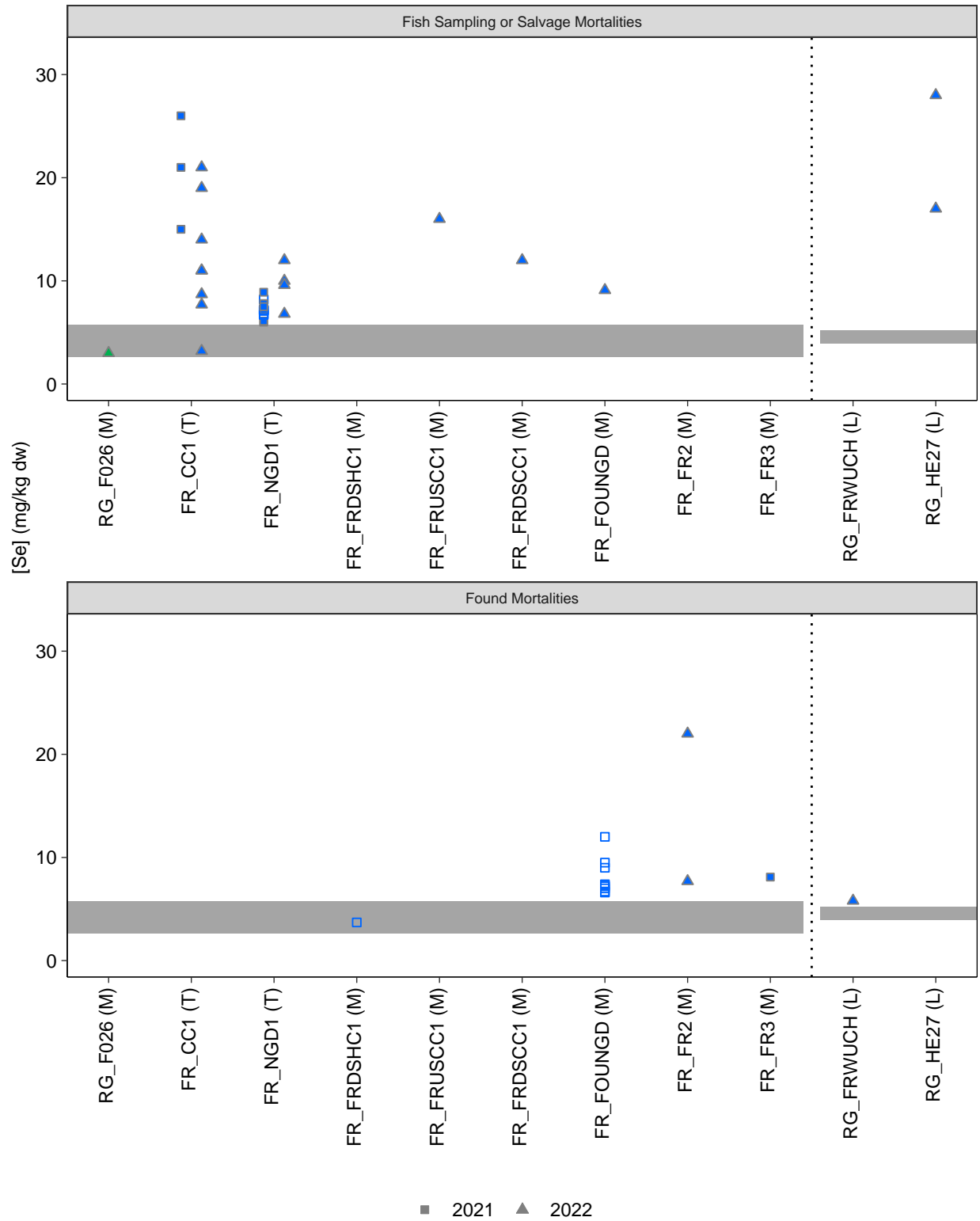


Figure J.1: Westslope Cutthroat Trout Muscle Selenium Concentrations, FRO LAEMP, 2021 and 2022

Notes: Green represents reference stations and blue represents mine-exposed stations. Muscle samples are plotted with a filled symbol and whole body samples are plotted with an open symbol. Gray shading represents the reference area normal range of lotic/lentic environments defined as the 2.5th and 97.5th percentiles of the distribution of reference area data (pooled 1996 to 2019 data) reported in the RAEMP. M = Mainstream, T = Tributary, L = Lentic.

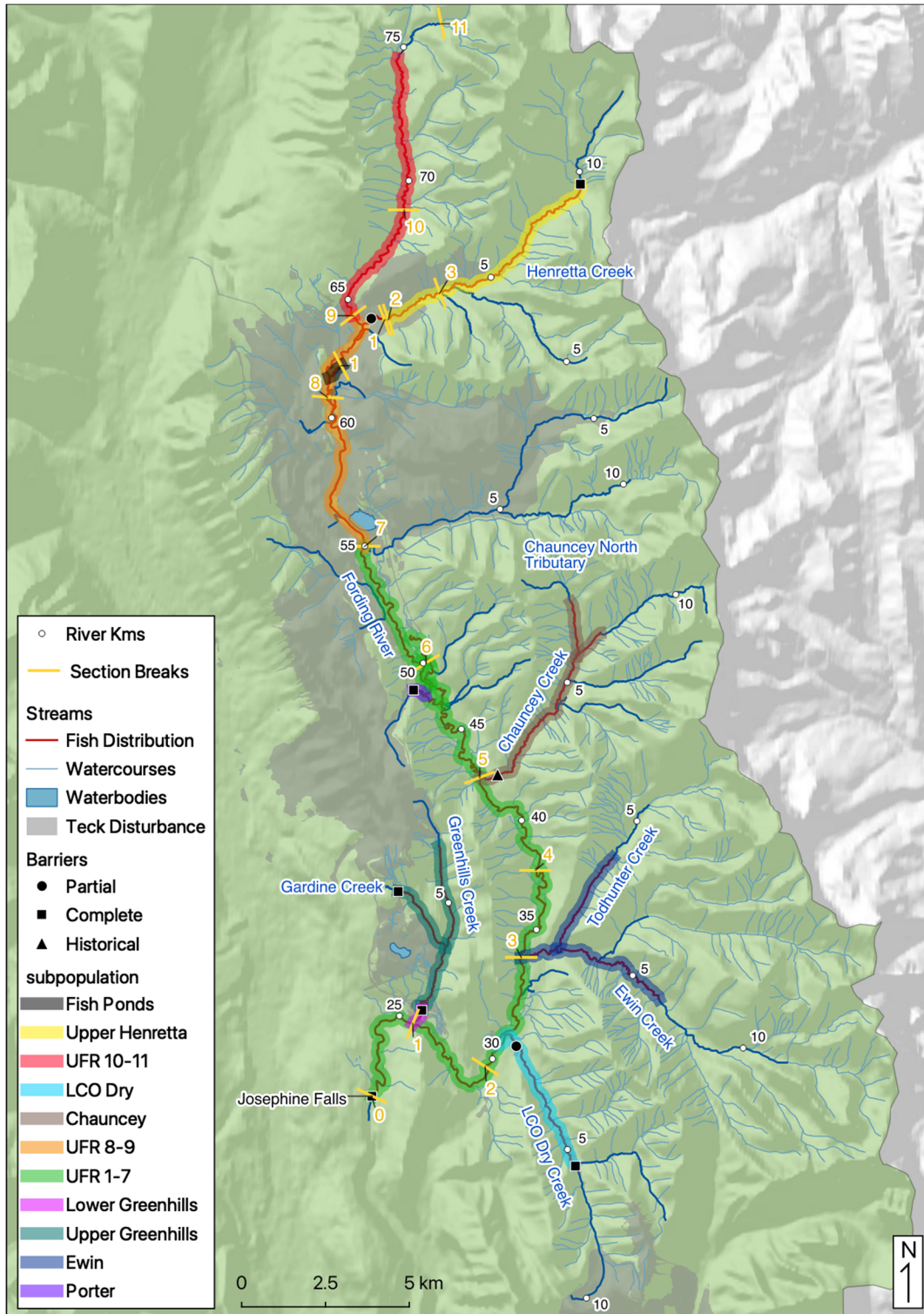


Figure J.2: Upper Fording River Westslope Cutthroat Trout Population Monitoring Study Area with River Kilometers, Section Breaks, Physical Upstream Barriers, and Subpopulation Groupings Within the Assumed Fish Distribution

Source: Thorley et al. 2023.

Table J.1: Westslope Cutthroat Trout Meristics, Condition, Tissue Selenium Concentrations, and Anomaly Observations, FRO LAEMP, 2022

Year	Station	Fish Sample ID	Date	Fork Length (cm)	Total Length (cm)	Body Weight (g)	Condition	Tissue Selenium Concentrations (mg/kg dw)	Observations of External Fish Anomalies
2022	RG_HE27	HE27_WCT-01	05-Aug-22	19.6	20.7	90	1.20	11	No external anomaly
		HE27_WCT-02	10-Aug-22	19.8	21	74	0.95	6	No external anomaly
		HE27_WCT-03	10-Aug-22	16.5	17.5	-	-	6.4	No external anomaly
		HE27_WCT-04	10-Aug-22	15.8	16.6	39	0.99	5.3	No external anomaly
		HE27_WCT-05	10-Aug-22	19.5	20.9	76	1.02	7.1	No external anomaly
	RG_MP1	RG_MP1_WCT-1_2022-09-08	8-Sep-22	34.9	35.9	520	1.22	11	No external anomaly
		RG_MP1_WCT-2_2022-09-08	8-Sep-22	23	24	140	1.15	9.2	No external anomaly
		RG_MP1_WCT-3_2022-09-08	8-Sep-22	25.6	26.3	170	1.01	17	No external anomaly
		RG_MP1_WCT-4_2022-09-08	8-Sep-22	29.7	30.6	340	1.30	7.7	No external anomaly
		RG_MP1_WCT-5_2022-09-08	8-Sep-22	31.7	32.2	320	1.00	10	No external anomaly
RG_MP1_WCT-6_2022-09-08		8-Sep-22	33.4	34.1	460	1.23	7	No external anomaly	
	RG_MP1_WCT-7_2022-09-08	8-Sep-22	30.5	31.8	300	1.06	11	one opercula substantially shortened or missing, gills completely exposed ^b	
	RG_MP1_WCT-8_2022-09-08	8-Sep-22	20.7	21.6	80	0.902	7.9	No external anomaly	
2021	RG_MP1	RG_MP1_WCT-01_2021-09-09	9-Sep-21	-	-	42.7	-	4.7	No external anomaly
		RG_MP1_WCT-02_2021-09-09	9-Sep-21	-	-	78	-	9.3	No external anomaly
		RG_MP1_WCT-03_2021-09-09	9-Sep-21	-	-	-	-	11	No external anomaly
		RG_MP1_WCT-04_2021-09-20	20-Sep-21	26.2	27.3	195	1.084	9.2	No external anomaly
		RG_MP1_WCT-05_2021-09-20	20-Sep-21	22.7	23.7	113	0.966	29	No external anomaly
		RG_MP1_WCT-06_2021-09-20	20-Sep-21	26.6	27.7	215	1.142	10	No external anomaly
		RG_MP1_WCT-07_2021-09-20	20-Sep-21	29.4	30.6	305	1.200	11	No external anomaly
		RG_MP1_WCT-08_2021-09-20	20-Sep-21	28.2	29.9	284	1.266	7.1	No external anomaly
	RG_FODGH	RG_FODGH_WCT-01_2021-09-20	20-Sep-21	40.5	41.5	865	1.302	10	No external anomaly
		RG_FODGH_WCT-02_2021-09-22	22-Sep-21	38.4	39.9	875	1.545	12	No external anomaly
		RG_FODGH_WCT-03_2021-09-22	22-Sep-21	28.3	29.9	295	1.302	12	No external anomaly
		RG_FODGH_WCT-04_2021-09-22	22-Sep-21	32.1	33.5	410	1.240	11	No external anomaly
		RG_FODGH_WCT-05_2021-09-22	22-Sep-21	38.8	40.2	820	1.404	10	No external anomaly
		RG_FODGH_WCT-06_2021-09-22	22-Sep-21	33.7	35.1	489	1.278	8.4	No external anomaly
		RG_FODGH_WCT-07_2021-09-22	22-Sep-21	40.3	42	825	1.260	11	No external anomaly
		RG_FODGH_WCT-08_2021-09-22	22-Sep-21	30.2	31.6	335	1.216	10	No external anomaly
	RG_BULL	RG_BULL_WCT-01_2021-09-17	17-Sep-21	28.6	30.1	248	1.060	3.6	No external anomaly
		RG_BULL_WCT-02_2021-09-17	17-Sep-21	31.4	32.9	355	1.147	3.6	No external anomaly
		RG_BULL_WCT-03_2021-09-17	17-Sep-21	25.9	27	190	1.094	3.6	No external anomaly
		RG_BULL_WCT-04_2021-09-17	17-Sep-21	22.3	23	111	1.001	2.2	No external anomaly
		RG_BULL_WCT-05_2021-09-17	17-Sep-21	24.4	25.4	148	1.019	2.2	No external anomaly
		RG_BULL_WCT-06_2021-09-17	17-Sep-21	30	31.7	295	1.093	2.1	No external anomaly
		RG_BULL_WCT-07_2021-09-17	17-Sep-21	25.2	26.6	163	1.019	3.6	No external anomaly
		RG_BULL_WCT-08_2021-09-17	17-Sep-21	26.5	27.9	194	1.042	3	No external anomaly
	RG_FH	RG_FH_WCT-01_2021-09-23	23-Sep-21	26.5	28	220	1.182	2.7	No external anomaly
		RG_FH_WCT-02_2021-09-23	23-Sep-21	33	34.6	485	1.350	3	No external anomaly
		RG_FH_WCT-03_2021-09-23	23-Sep-21	25.2	26.5	171	1.069	1.8	No external anomaly
		RG_FH_WCT-04_2021-09-23	23-Sep-21	23.5	25	148	1.140	2.4	No external anomaly
RG_FH_WCT-05_2021-09-23		23-Sep-21	23	24.4	139	1.142	2.7	No external anomaly	
RG_FH_WCT-06_2021-09-24		24-Sep-21	19.8	21	68	0.876	3.2	No external anomaly	
RG_FH_WCT-07_2021-09-24		24-Sep-21	24.4	25.2	149	1.026	1.9	No external anomaly	
RG_FH_WCT-08_2021-09-24		24-Sep-21	26.7	28.1	213	1.119	2.8	No external anomaly	
2018	RG_MP1	RG_MP1_WCT-01	11-Sep-18	41.3	42.6	1,020	1.448	9.9	No external anomaly
		RG_MP1_WCT-02	11-Sep-18	39.0	40.4	705	1.188	11	No external anomaly
		RG_MP1_WCT-03	11-Sep-18	38.6	40.1	735	1.278	7.5	No external anomaly
		RG_MP1_WCT-04	11-Sep-18	32.5	33.5	405	1.180	10	No external anomaly
		RG_MP1_WCT-05	11-Sep-18	46.8	48.3	1,200	1.171	8.3	No external anomaly
		RG_MP1_WCT-06	11-Sep-18	33.2	34.4	415	1.134	9.5	No external anomaly
		RG_MP1_WCT-07	11-Sep-18	39.2	40.6	820	1.361	9.4	No external anomaly
		RG_MP1_WCT-08	11-Sep-18	35.8	36.4	530	1.155	9.2	No external anomaly
	RG_FODCH ^a	RG_FODCH_WCT-01	09-Sep-18	28.4	29.9	265	1.157	10	No external anomaly
		RG_FODCH_WCT-02	09-Sep-18	29.8	31.4	350	1.323	8.8	shortened operculum
		RG_FODCH_WCT-03	09-Sep-18	30.9	32.2	355	1.203	11	No external anomaly
		RG_FODCH_WCT-04	09-Sep-18	31.0	32.2	360	1.208	12	top of caudal torn
		RG_FODCH_WCT-05	09-Sep-18	33.9	35.6	550	1.412	8.7	No external anomaly
		RG_FODCH_WCT-06	11-Sep-18	31.5	33.3	375	1.200	11	short snout
		RG_FODCH_WCT-07	11-Sep-18	28.6	30.1	295	1.261	11	No external anomaly
		RG_FODCH_WCT-08	11-Sep-18	27.9	29.2	250	1.151	11	bottom of caudal lobe missing
	RG_MOYIE	RG_MOYIE_WCT-01	13-Sep-18	20.8	22.0	93	1.033	0.7	No external anomaly
		RG_MOYIE_WCT-02	13-Sep-18	17.8	19.1	52	0.913	0.8	No external anomaly
		RG_MOYIE_WCT-03	13-Sep-18	31.2	33.3	255	0.840	<0.5	No external anomaly
		RG_MOYIE_WCT-04	13-Sep-18	19.7	21.0	72	0.942	0.7	No external anomaly
		RG_MOYIE_WCT-05	13-Sep-18	21.5	22.6	93	0.936	0.5	No external anomaly
		RG_MOYIE_WCT-06	13-Sep-18	32.0	34.0	345	1.053	1	No external anomaly
	RG_BULL	RG_BULL_WCT-01	08-Sep-18	33.4	34.8	475	1.275	4.4	No external anomaly
		RG_BULL_WCT-02	08-Sep-18	29.5	31.2	292	1.137	3.9	jaw deformed
		RG_BULL_WCT-03	08-Sep-18	31.1	32.5	340	1.130	4.1	jaw deformed
		RG_BULL_WCT-04	08-Sep-18	25.9	27.4	192	1.105	5.2	No external anomaly
		RG_BULL_WCT-05	08-Sep-18	32.0	33.5	345	1.053	4.3	No external anomaly
		RG_BULL_WCT-06	08-Sep-18	31.1	32.7	350	1.164	5.2	small abrasion near left pectoral fin
		RG_BULL_WCT-07	08-Sep-18	30.9	32.5	320	1.085	4.5	some jaw scarring
		RG_BULL_WCT-08	08-Sep-18	24.7	26.2	160	1.062	4.9	slightly shortened left operculum

Notes: '-' denotes no data.

^aRG_FODCH in the present table are the same fish labelled RG_FODGH in Figures 3.21 and 3.23 as the fish were caught in the same general area and these fish move throughout this portion of the watershed. 'I3' is the code associated with anomaly severity assessment table developed in the RAEMP (Minnow 2021).

^b Observation is considered preliminary pending qualified personnel (QP) confirmation for the RAEMP.

Table J.2: Westslope Cutthroat Trout Meristics from Fish Mortalities in FRO LAEMP Study Area, FRO LAEMP, 2022

Year	Station	Sample ID	Date Collected	Species	Fork Length (mm)	Weight (g)	Sex (m/f/u)	Sample Tissue Type
2022	RG_FO26	RG_FO26_WCT-1-2022-08-23	2022-Aug-23	WCT	69	3	u	Dorsal muscle
	FR_CC1	FR_CC1_DS_WCT-M-1_2022-09-04	2022-Sept-04	WCT	148	28.2	u	Muscle tissue
		FR_CC1_DS_WCT-M-1_2022-09-05	2022-Sept-05	WCT	83	6.3	u	Muscle tissue
		FR_CC1_DS_WCT-M-1_2022-09-07	2022-Sept-07	WCT	89	8	u	Muscle tissue
		FR_CC1_DS_WCT-M-2_2022-09-07	2022-Sept-07	WCT	84	6	u	Muscle tissue
		FR_CC1_DS_WCT-M-1_2022-09-08	2022-Sept-08	WCT	97	6	u	Dorsal Muscle
		FR_CC1_WCT-M-1_2022-09-12	2022-Sept-12	WCT	109	15	u	Dorsal Muscle
		FR_CC1_WCT-M-1_2022-09-13	2022-Sept-13	WCT	95	10	u	Dorsal Muscle
		FR_CC1_WCT-M-1_2022-10-04	2022-Oct-04	WCT	-	-	f	Muscle
	FR_NGD1	FR_NGD1_WCT-1-M-2022-07-11	2022-July-11	WCT	78	6	u	Muscle tissue
		FR_NGD1_WCT-1-M-2022-07-22	2022-July-22	WCT	68	3.4	-	Muscle tissue
		FR_NGD1_WCT-1-M-2022-08-05	2022-Aug-05	WCT	80	5.9	u	Muscle tissue
		FR_NGD1_WCT-M-1_2022-09-06	2022-Sept-06	WCT	95	8.5	u	Muscle tissue
	FR_FRUSCC1	FR_FRUSCC1_WCT-M-1_2022-09-10	2022-Sept-10	WCT	105	13	u	Dorsal Muscle
	FR_FRDSCC1	FR_FRDSCC1_WCT-M-1_2022-09-11	2022-Sept-11	WCT	170	67	u	Dorsal Muscle
	FR_FOUNGD	FR_FOUNGD_WCT-M-1_2022-09-11	2022-Sept-11	WCT	100	10	u	Dorsal Muscle
	FR_FR2	FR_FR2-WCT-1-M-2022-03-14	2022-Mar-14	WCT	135	32.5	y	Muscle tissue
		FR_FR2D_WCT-1-M-2022-07-05	2022-July-5	WCT	285	278.6	f	Muscle tissue
RG_FRWUCH	RG_FRWUCH_WCT-1-M-2022-07-27	2022-Jul-27	WCT	234	135.3	f	Dorsal muscle	
RG_HE27	RG_HE27_WCT-M-1_2022-09-29	2022-Sept-29	WCT	225	186	-	Dorsal muscle	
	RG_HE27_WCT-M-1_2022-10-06	2022-Oct-06	WCT	360	583	m	Muscle	
2021	FR_FRDSHC1	FR_FRDSHC1_WCT-1_2021-06-30	2021-Jun-30	WCT	50	1.5	u	Whole body
	FR_NGD1	FR_NGD1_WCT-4-M-2021-07-19	2021-Jul-19	WCT	110	7	u	Dorsal muscle
		FR_NGD1_WCT-5-M-2021-07-20	2021-Jul-19	WCT	150	25	m	Dorsal muscle
		FR_NGD1_WCT-8-2021-07-19	2021-Jul-19	WCT	85	5	u	Whole body
		FR_NGD1_WCT-9-2021-07-19	2021-Jul-19	WCT	75	3	u	Whole body
		FR_NGD1_WCT-10-2021-07-22	2021-Jul-22	WCT	99	10	u	Whole body
		FR_NGD1_WCT-11-2021-07-23	2021-Jul-23	WCT	84	7	u	Whole body
		FR_NGD1_WCT-12-2021-07-28	2021-Jul-28	WCT	98	10	u	Whole body
		FR_NGD1_WCT-13-M-2021-07-28	2021-Jul-28	WCT	91	8	u	Dorsal muscle
		FR_NGD1_WCT-15-2021-07-29	2021-Jul-29	WCT	84	-	u	Whole body
		FR_NGD1_WCT-16-2021-08-02	2021-Aug-02	WCT	71	5	u	Whole body
		FR_NGD1_WCT-17-M-2021-08-13	2021-Aug-13	WCT	82	11	u	Dorsal muscle
		FR_NGD1_WCT-19-M-2021-08-23	2021-Aug-23	WCT	77	4.62	u	Dorsal muscle
	FR_NGD1_WCT-21-M-2021-09-08	2021-Sept-8	WCT	98	15	u	Dorsal muscle	
	FR_FR3	FR_FR3_WCT-1-M-2021-08-11	2021-Aug-11	WCT	226	104	f	Dorsal muscle
	FR_CC1	FR_CC1_WCT-1-M-2021-10-05	2021-Oct-05	WCT	112	9.1	m	Dorsal muscle
		FR_CC1_WCT-2-M-2021-10-05	2021-Oct-05	WCT	89	7.2	u	Dorsal muscle
		FR_CC1-WCT-6-M-2021-10-05	2021-Oct-05	WCT	94	7.9	u	Dorsal muscle
	RG_FOUNGD	RG_FOUNGD-WCT-1-2021-10-12	2021-Oct-12	WCT	58	-	u	Whole body
		RG_FOUNGD-WCT-2-2021-10-12	2021-Oct-12	WCT	57	-	u	Whole body
		RG_FOUNGD-WCT-3-2021-10-12	2021-Oct-12	WCT	50	-	u	Whole body
RG_FOUNGD-WCT-4-2021-10-12		2021-Oct-12	WCT	39	-	u	Whole body	
RG_FOUNGD-WCT-5-2021-10-12		2021-Oct-12	WCT	45	-	u	Whole body	
RG_FOUNGD-WCT-6-2021-10-12		2021-Oct-12	WCT	46	-	u	Whole body	
RG_FOUNGD-WCT-7-2021-10-12		2021-Oct-12	WCT	53	-	u	Whole body	
RG_FOUNGD-WCT-8-2021-10-12		2021-Oct-12	WCT	55	-	u	Whole body	
RG_FOUNGD-WCT-9-2021-10-12	2021-Oct-12	WCT	58	-	u	Whole body		

Note: "-" indicates not data available.

APPENDIX

**BIOLOGICAL
TRIGGERS**

APPENDIX K BIOLOGICAL TRIGGERS

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K1 INTRODUCTION

K1.1 Background

Biological triggers were developed and implemented to assist with identifying and communicating unexpected and potentially important changes in aquatic ecosystem conditions and are required as part of Teck's Adaptive Management Plan (AMP; Teck 2018). Biological triggers were developed in consultation with the EMC for a subset of the biological monitoring endpoints that are effective indicators of changes at the ecosystem level. The purpose of the biological triggers is to quickly identify biological monitoring areas where unexpected biological conditions may be occurring that may require management action. Additionally, information provided from the analysis of biological triggers may lead to responses under the AMP response framework.

Draft biological triggers were developed in the 2018 AMP (Teck 2018) under Management Question 5, with these were initially reported on in the 2020 and 2021 Local Aquatic Effects Monitoring Program (LAEMP) reports and Regional Aquatic Effects Monitoring Report (RAEMP) data package, and summarized in the 2020 Annual AMP Report (Teck 2021a). When the 2018 AMP was approved, there was an expectation that the 2018 AMP draft/interim biological triggers would be finalized, through engagement with the EMC, prior to December 15, 2021 AMP Update. The biological triggers were finalized in 2021 (Teck 2021b) and the methods applied in this report reflect the finalized biological triggers. It is important to note that the process and/or biological triggers may adjust over time as the purpose of the biological triggers is to be reflective of not only changes in the Elk Valley, but also the current state of knowledge in the area.

The finalized biological triggers (Teck 2021b) include three measurement endpoints:

- Percent EPT (% EPT; Ephemeroptera, Plecoptera, and Trichoptera) – based on travelling kick samples (CABIN protocol), generally three replicates per location per sampling event.
- Benthic invertebrate tissue selenium (BIT Se) – generally several replicates collected per location per sampling event, where each replicate is a composite sample of invertebrates (i.e., composite-taxa sample).



- Westslope cutthroat trout muscle tissue selenium (WCT Se) – generally 8 replicates collected per location per sampling event, where each replicate corresponds to a sample from a single fish¹.

Evaluation of these three biological trigger endpoints is complementary to the fulsome evaluation of biological endpoints that is integrated into the LAEMP and the RAEMP data evaluations. The more fulsome evaluation of biological endpoints is used to support answering the specific LAEMP and RAEMP study questions through the consideration of not only the endpoints used in the biological trigger evaluation, but also a full suite of additional biological, chemical, and physical endpoints. Biological triggers do not provide information on cause and effect, report on trends, or feed directly into decision-making processes. Instead, the biological triggers act to flag areas for further evaluation, which would then take place under existing monitoring programs, through the development of supporting studies or through the response framework, as necessary.

Biological monitoring data are compared to triggers annually, and summaries of the LAEMP and RAEMP trigger evaluations and responses are included in the annual AMP reports.

¹ Fish tissue monitoring was excluded from the 2022 FRO LAEMP monitoring program in an effort to help reduce the potential for sampling stress on westslope cutthroat trout populations in related to FRO LAEMP monitoring activities.



K2 METHODS

K2.1 Overview

As outlined in Section K1.1, analyses for biological triggers are meant to be complementary to other analyses conducted in the LAEMPs and RAEMP. For the 2022 FRO LAEMP, biological trigger analyses only included two of the three measurement endpoints (%EPT and BIT Se) since fish tissue sampling is not part of the FRO LAEMP and is covered under the RAEMP.

For the purpose of application of the biological triggers, expectations for the endpoints evaluated (both the %EPT and BIT Se for the 2022 FRO LAEMP) were based on projected water quality, not on measured water quality. Thus, the triggers should detect biological results that were unexpected, regardless of whether those results are due to unexpected water quality or due to unexpected relationships between water quality and biological endpoints. Biological triggers were therefore only applied at locations where water quality projections were available. Specifically, six of the mine-exposed areas (RG_FODHE, RG_FOUKI, RG_FOBSC, RG_FOBCEP, RG_FODPO, and RG_FO22) and one reference area (RG_FO26) included in the FRO LAEMP were evaluated for biological triggers. Data for other areas studied under the FRO LAEMP (RG_HENUP, RG_UFR1, RG_FRGHSC, RG_FOUCL, RG_FRDSCC1, RG_FOUNGD, RG_FODNGD, RG_MP1, RG_FOUSH, RG_FOBKS, RG_SCOUADS, RG_FRCP1SW, RG_FRSCH2, RG_FRUPO, RG_FOU EW) were assessed elsewhere as part of the main FRO LAEMP report.

Methodological details are discussed for each of the biological trigger metrics below.

K2.2 Percent EPT

Data for percent EPT were compared to:

Normal range: The lower limit of habitat-adjusted normal range (2.5th percentile). Up-to-date limits of normal ranges² are provided in the RAEMP and LAEMPs, where they are recalculated as needed as new data become available (Teck 2019). The derivation of habitat-adjusted normal ranges is described in Appendix J of the 2017 to 2019 RAEMP report, and was based on consideration of more than 30 habitat, substrate, GIS, and land cover variables (Minnow 2020).

Expectations: The lower limit of the range of %EPT corresponds to the predicted aquatic data integration tool (ADIT) score. The predicted ADIT scores correspond to potential effects on

² The normal range will be updated as part of the three-year reporting cycle of the RAEMP (Minnow 2021b).



benthic invertebrate community (BIC) endpoints, based on relationships between water quality projections (for nitrate, sulphate and cadmium)³ and invertebrate toxicity endpoints originally developed for the Elk Valley Water Quality Plan (EVWQP; Teck 2014; Golder 2020a). A predicted ADIT score of 3 corresponds to 50% or greater effects to reproduction of the water flea *Ceriodaphnia dubia*, 2 corresponds to 20 to 50% effects, 1 corresponds to 10 to 20% effects, and 0 corresponds to effect levels of 10% or less. Once %EPT is actually measured, the measured results are converted to a measured ADIT score in relation to the habitat adjusted normal range as follows: An ADIT score of 0 corresponds to expected %EPT \geq the 10th percentile of the habitat-adjusted normal range; an ADIT score of 1 corresponds to expected %EPT between the 10th percentile and the 2.5th percentile of the habitat-adjusted normal range (and is therefore identical in application to the lower limit of normal range); an ADIT score of 2 corresponds to expected %EPT between the 2.5th percentile and half of the 2.5th percentile of the habitat-adjusted normal range; finally, an ADIT score of 3 corresponds to expected %EPT \leq half of the 2.5th percentile and \geq 0. Individual replicate habitat-adjusted normal ranges were used at each location for establishing the %EPT limits associated with each ADIT score. In summary, this component of the biological trigger for %EPT asks whether the measured ADIT score – calculated based on measured %EPT relative to normal ranges – is greater than the ADIT score that was predicted based on water quality projections.

Benthic invertebrate community data for %EPT collected in the fall (September) for the 2022 FRO LAEMP were included in the biological trigger analysis.

K2.3 Benthic Invertebrate Tissue Selenium (BIT Se)

Data for BIT Se were compared to:

Normal range: The upper limit of regional normal range (97.5th percentile) for individual replicates. Up-to-date limits of normal ranges⁴ are provided in the RAEMP and LAEMPs, where they are recalculated as needed as new data become available (Teck 2019).

Expectations: The upper limit of the 95% prediction interval based on the water to BIT bioaccumulation model for lotic environments. The model originally developed in the EVWQP (Golder 2014) was updated (Golder 2020b) and the updated data set was used to calculate prediction intervals for individual replicates. Methodology for estimating the upper limit of the 95% prediction for BIT Se (given any projected value of aqueous selenium) is discussed further

³ Selenium was not included because selenium effects on BIC endpoints are not expected. Projections were based on the highest maximum monthly mean across all flow scenarios (low, average, and high).

⁴ The normal range will be updated as part of the three-year reporting cycle of the RAEMP (Minnow 2021b).



in the Biological Trigger Development for the Elk Valley Adaptive Management Plan (Azimuth 2021 [In Preparation]).

Benthic invertebrate tissue selenium data from sampling events completed throughout 2022 for the FRO LAEMP (June, September, and December) were included in the biological trigger analysis although normal range information is based on fall (September) information. Samples included in biological trigger assessments also included those collected for the FRO-S AWTF commissioning sampling⁵ plan in January February and March and those collected for FRO-S AWTF investigative sampling⁶ in November.

Although effects benchmarks are not part of the trigger, they are relevant for interpreting potential significance and responses. Consequently, the level 1, 2 and 3 benchmarks for the most sensitive receptor (juvenile fish via dietary exposure) are included in plots (11, 18 and 26 mg/kg respectively).

⁵ Included RG_FOUKI, RG_FOBSC, RG_FOBCP, RG_FODPO, and RG_FO22.

⁶ Included RG_FOBSC and RG_FO22.



K3 RESULTS

K3.1 Percent EPT

Individual replicates for % EPT for each of the six mine-exposed areas (RG_FODHE, RG_FOUKI, RG_FOBSC, RG_FOBCP, RG_FODPO, and RG_FO22) as well as one reference area (RG_FO26) were each assessed against their respective biological trigger for the September sampling period (Appendix Table K.1 and Appendix Figure K.1). Except for RG_FODHE (2 of 3 replicates), all replicates from the biological monitoring areas assessed for biological triggers, including the reference area RG_FO26, had %EPT that were lower than the biological trigger (Appendix Table K.1 and Appendix Figure K.1). The biological monitoring area (RG_FOUKI) upstream of the Kilmarnock Creek confluence had the largest deviation from the habitat-adjusted normal range and 2.5th percentile prediction limit in 2022, which was driven by low abundances of both Ephemeroptera and Plecoptera.


K3.2 Benthic Invertebrate Tissue Selenium (BIT Se)

Benthic invertebrate tissue selenium concentrations for each mine-exposed and reference area were assessed against their respective biological trigger for individual replicate samples from each of the six sampling events in 2022 (January, February, March, June, September, November, and December; Appendix Table K.2 and Appendix Figure K.2). No samples at any of the biological monitoring areas exceeded the biological trigger (above the 97.5th percentile of normal range and above the 95% prediction interval) for tissue selenium concentrations, except at RG_FODPO where two samples exceeded the trigger but both of which contained oligochaetes (Appendix Table K.2 and Appendix Figure K.2), which are known to accumulate selenium more than other taxa (Luoma 2021).



Table K.1: Biological Trigger Analysis for %EPT in the Fording River, FRO LAEMP, September 2022

Waterbody		Area	Stream Type	Replicate	Reported Value	ADIT Value ^a	Lower 2.5th Percentile of the Habitat Adjusted Normal Range
Fording River	Reference	RG_FO26	M	1	63.7	83.0	78.3
			M	2	75.3	82.2	77.3
			M	3	71.6	81.4	76.8
	Mine-exposed	RG_FODHE	M	1	77.9	85.5	81.1
			M	2	84.0	82.7	78.3
			M	3	90.9	83.2	79.1
		RG_FOUKI	M	1	27.3	82.2	77.7
			M	2	30.2	80.0	74.8
			M	3	37.8	81.8	76.7
		RG_FOBSC	M	1	44.1	84.5	80.0
			M	2	41.6	81.8	77.4
			M	3	42.0	82.8	78.5
		RG_FOBBCP	M	1	49.2	83.8	79.3
			M	2	42.4	82.9	78.5
			M	3	56.5	84.6	80.6
			M	4	58.8	82.5	77.9
			M	5	55.9	81.1	76.3
		RG_FODPO	M	1	79.0	84.5	80.1
			M	2	76.0	84.8	80.1
			M	3	68.1	83.5	79.1
		RG_FO22	M	1	40.6	86.9	82.6
			M	2	48.8	85.3	81.0
			M	3	51.5	84.7	80.4
			M	4	68.0	85.1	80.9
	M		5	57.6	84.5	79.7	

 Shaded cells signify individual replicates that were associated with a biological trigger (i.e. lower than both the ADIT value [as based on predicted water quality] and the lower 2.5th percentile of habitat-adjusted normal range).

Notes: M= Mainstem and T = Tributary.

^a All areas evaluated had an ADIT score of 0, which corresponds to the 80% lower limit of the expected %EPT (as based on water quality projections).

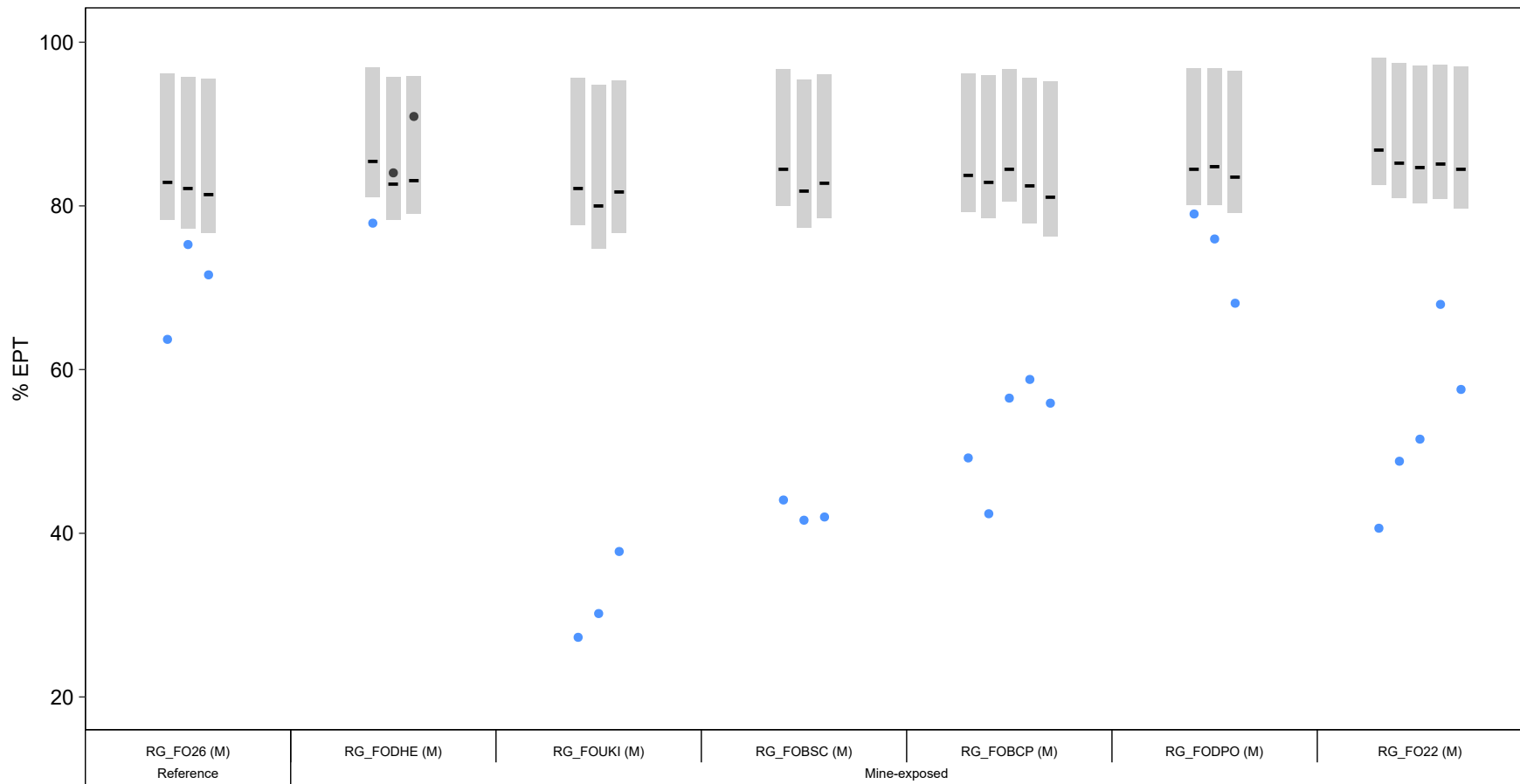


Figure K.1: Biological Trigger Analysis for % EPT Compared to Predicted Values, Fording LAEMP, September 2022

Notes: Black bars indicate the lower limit of the predicted ADIT score for the location. Blue dots represent values exceeding the trigger (below 2.5th percentile of NR and below lower limit of predicted ADIT score). Gray shading represents the habitat-adjusted normal range for each replicate. T = Tributary, M = Mainstem.

Table K.2: Biological Trigger Analysis for Selenium Concentrations in Benthic Invertebrate Tissue in Fording River, FRO LAEMP, 2022

Waterbody	Stream Type	Area	Date	Replicate	Predicted Selenium Water Concentration (mg/L)	Benthic Invertebrate Selenium Tissue			
						Upper 95% Prediction Limit (mg/kg dw)	Upper 97.5th Percentile of Normal Range (mg/kg dw)	Reported Concentration (mg/kg dw)	
Fording River	Reference	M	RG_FO26	27-Jun-22	1	1.06	10.6	8.73	2.50
					2	1.06	10.6	8.73	3.50
					3	1.06	10.6	8.73	3.00
			16-Sep-22	1	1.06	10.6	8.73	4.40	
				2	1.06	10.6	8.73	5.00	
				3	1.06	10.6	8.73	1.80	
	Mine-Exposed	M	RG_FODHE	13-Jun-22	1	26.3	13.3	8.73	5.50
					2	26.3	13.3	8.73	6.10
					3	26.3	13.3	8.73	4.80
				19-Sep-22	1	26.3	13.3	8.73	9.00
					2	26.3	13.3	8.73	11.0
					3	26.3	13.3	8.73	11.0
			RG_FOUKI	18-Jan-22	1	59.2	14.1	8.73	3.30
					2	59.2	14.1	8.73	3.40
					3	59.2	14.1	8.73	4.60
					4	59.2	14.1	8.73	1.70
					5	59.2	14.1	8.73	5.00
				15-Feb-22	1	59.2	14.1	8.73	4.30
					2	59.2	14.1	8.73	6.60
					3	59.2	14.1	8.73	4.30
					4	59.2	14.1	8.73	4.50
					5	59.2	14.1	8.73	6.10
				15-Mar-22	1	59.2	14.1	8.73	6.30
					2	59.2	14.1	8.73	9.10
					3	59.2	14.1	8.73	3.60
					4	59.2	14.1	8.73	5.30
					5	59.2	14.1	8.73	6.70
			27-Jun-22	1	59.2	14.1	8.73	6.50	
				2	59.2	14.1	8.73	6.30	
				3	59.2	14.1	8.73	5.80	
				4	59.2	14.1	8.73	7.60	
				5	59.2	14.1	8.73	6.20	
			13-Sep-22	1	59.2	14.1	8.73	7.90	
				2	59.2	14.1	8.73	6.50	
				3	59.2	14.1	8.73	9.30	
				4	59.2	14.1	8.73	6.40	
				5	59.2	14.1	8.73	7.90	
			8-Dec-22	1	59.2	14.1	8.73	5.70	
				2	59.2	14.1	8.73	3.90	
				3	59.2	14.1	8.73	5.30	
				4	59.2	14.1	8.73	4.30	
				5	59.2	14.1	8.73	5.80	
			RG_FOBSC	20-Jan-22	1	60.0	14.2	8.73	6.00
					2	60.0	14.2	8.73	7.60
					3	60.0	14.2	8.73	7.10
					4	60.0	14.2	8.73	8.70
					5	60.0	14.2	8.73	7.90
				16-Feb-22	1	60.0	14.2	8.73	5.00
					2	60.0	14.2	8.73	7.90
					3	60.0	14.2	8.73	7.40
					4	60.0	14.2	8.73	6.70
					5	60.0	14.2	8.73	9.10
				17-Mar-22	1	60.0	14.2	8.73	7.20
					2	60.0	14.2	8.73	7.30
					3	60.0	14.2	8.73	9.90
					4	60.0	14.2	8.73	7.30
					5	60.0	14.2	8.73	7.30
				28-Jun-22	1	60.0	14.2	8.73	6.20
					2	60.0	14.2	8.73	7.20
					3	60.0	14.2	8.73	6.90
					4	60.0	14.2	8.73	7.70
			5		60.0	14.2	8.73	7.40	

Shaded cells signify those individual replicates that were associated with a biological trigger (i.e. higher than both the upper 95% prediction limit [as based on predicted water quality] and the upper 97.5th percentile of normal range).

Notes: M= Mainstem; T = Tributary; dw = dry weight. Samples containing oligochaetes are highlighted in purple.

^a Denotes samples that contained annelids.

Table K.2: Biological Trigger Analysis for Selenium Concentrations in Benthic Invertebrate Tissue in Fording River, FRO LAEMP, 2022

Waterbody	Stream Type	Area	Date	Replicate	Predicted Selenium Water Concentration (mg/L)	Benthic Invertebrate Selenium Tissue			
						Upper 95% Prediction Limit (mg/kg dw)	Upper 97.5th Percentile of Normal Range (mg/kg dw)	Reported Concentration (mg/kg dw)	
Fording River	Mine-Exposed	RG_FOBSC	13-Sep-22	1	60.0	14.2	8.73	13.0	
				2	60.0	14.2	8.73	8.40	
			14-Sep-22	3	60.0	14.2	8.73	11.0	
				4	60.0	14.2	8.73	10.0	
				5	60.0	14.2	8.73	9.70	
			7-Nov-22	1	60.0	14.2	8.73	5.90	
				2	60.0	14.2	8.73	6.80	
				3	60.0	14.2	8.73	4.60	
				4	60.0	14.2	8.73	6.80	
				5	60.0	14.2	8.73	6.10	
			8-Dec-22	1	60.0	14.2	8.73	5.40	
				2	60.0	14.2	8.73	7.20	
				3	60.0	14.2	8.73	7.80	
				4	60.0	14.2	8.73	7.00	
				5	60.0	14.2	8.73	6.40	
			RG_FOBPC	15-Mar-22	1	69.4	14.3	8.73	9.10
					2	69.4	14.3	8.73	8.30
					3	69.4	14.3	8.73	9.60
					4	69.4	14.3	8.73	11.0
					5	69.4	14.3	8.73	11.0
		29-Jun-22		1	69.4	14.3	8.73	8.20	
				2	69.4	14.3	8.73	8.70	
				3	69.4	14.3	8.73	6.80	
				4	69.4	14.3	8.73	7.10	
				5	69.4	14.3	8.73	8.20	
		14-Sep-22		1	69.4	14.3	8.73	9.80	
				2	69.4	14.3	8.73	12.0	
				3	69.4	14.3	8.73	9.50	
				15-Sep-22	4	69.4	14.3	8.73	8.80
					5	69.4	14.3	8.73	12.0
		RG_FODPO	19-Jan-22	1	67.8	14.3	8.73	3.60	
				2	67.8	14.3	8.73	4.40	
				3	67.8	14.3	8.73	4.10	
				4	67.8	14.3	8.73	4.50	
				5	67.8	14.3	8.73	3.50	
			16-Feb-22	1	67.8	14.3	8.73	6.70	
				2	67.8	14.3	8.73	6.30	
				3	67.8	14.3	8.73	4.10	
				4	67.8	14.3	8.73	5.60	
				5	67.8	14.3	8.73	5.30	
			16-Mar-22	1	67.8	14.3	8.73	7.80	
				2	67.8	14.3	8.73	7.20	
				3	67.8	14.3	8.73	4.80	
				4	67.8	14.3	8.73	5.60	
				5	67.8	14.3	8.73	6.70	
			28-Jun-22	1	67.8	14.3	8.73	9.20	
				2	67.8	14.3	8.73	12.0	
				3 ^a	67.8	14.3	8.73	14.0	
				4 ^a	67.8	14.3	8.73	17.0	
				5 ^a	67.8	14.3	8.73	22.0	
18-Sep-22	1		67.8	14.3	8.73	7.40			
	2		67.8	14.3	8.73	9.20			
	3		67.8	14.3	8.73	5.20			
	4		67.8	14.3	8.73	7.10			
	5		67.8	14.3	8.73	6.70			
7-Dec-22	1	67.8	14.3	8.73	5.20				
	2	67.8	14.3	8.73	4.60				
	3	67.8	14.3	8.73	5.30				
	4	67.8	14.3	8.73	4.00				
	5	67.8	14.3	8.73	3.60				

Shaded cells signify those individual replicates that were associated with a biological trigger (i.e. higher than both the upper 95% prediction limit [as based on predicted water quality] and the upper 97.5th percentile of normal range).

Notes: M= Mainstem; T = Tributary; dw = dry weight. Samples containing oligochaetes are highlighted in purple.

^a Denotes samples that contained annelids.

Table K.2: Biological Trigger Analysis for Selenium Concentrations in Benthic Invertebrate Tissue in Fording River, FRO LAEMP, 2022

Waterbody	Stream Type	Area	Date	Replicate	Predicted Selenium Water Concentration (mg/L)	Benthic Invertebrate Selenium Tissue			
						Upper 95% Prediction Limit (mg/kg dw)	Upper 97.5th Percentile of Normal Range (mg/kg dw)	Reported Concentration (mg/kg dw)	
Fording River	Mine-Exposed	M	RG_FO22	20-Jan-22	1	65.4	14.2	8.73	7.70
					2	65.4	14.2	8.73	7.60
					3	65.4	14.2	8.73	7.90
					4	65.4	14.2	8.73	5.20
					5	65.4	14.2	8.73	6.60
				18-Feb-22	1	65.4	14.2	8.73	7.60
					2	65.4	14.2	8.73	6.30
					3	65.4	14.2	8.73	6.90
					4	65.4	14.2	8.73	5.30
					5	65.4	14.2	8.73	8.50
				17-Mar-22	1	65.4	14.2	8.73	10.0
					2	65.4	14.2	8.73	6.20
					3	65.4	14.2	8.73	9.60
					4	65.4	14.2	8.73	8.50
					5	65.4	14.2	8.73	10.0
				9-Sep-22	1	65.4	14.2	8.73	13.0
					2	65.4	14.2	8.73	8.70
					3	65.4	14.2	8.73	11.0
					4	65.4	14.2	8.73	12.0
					5	65.4	14.2	8.73	9.70
				8-Nov-22	1	65.4	14.2	8.73	5.70
					2	65.4	14.2	8.73	8.10
					3	65.4	14.2	8.73	6.40
					4	65.4	14.2	8.73	5.70
					5	65.4	14.2	8.73	4.40
8-Dec-22	1	65.4	14.2	8.73	9.10				
	2	65.4	14.2	8.73	8.90				
	3	65.4	14.2	8.73	5.60				
	4	65.4	14.2	8.73	1.80				
	5	65.4	14.2	8.73	3.50				

Shaded cells signify those individual replicates that were associated with a biological trigger (i.e. higher than both the upper 95% prediction limit [as based on predicted water quality] and the upper 97.5th percentile of normal range).

Notes: M= Mainstem; T = Tributary; dw = dry weight. Samples containing oligochaetes are highlighted in purple.

^a Denotes samples that contained annelids.

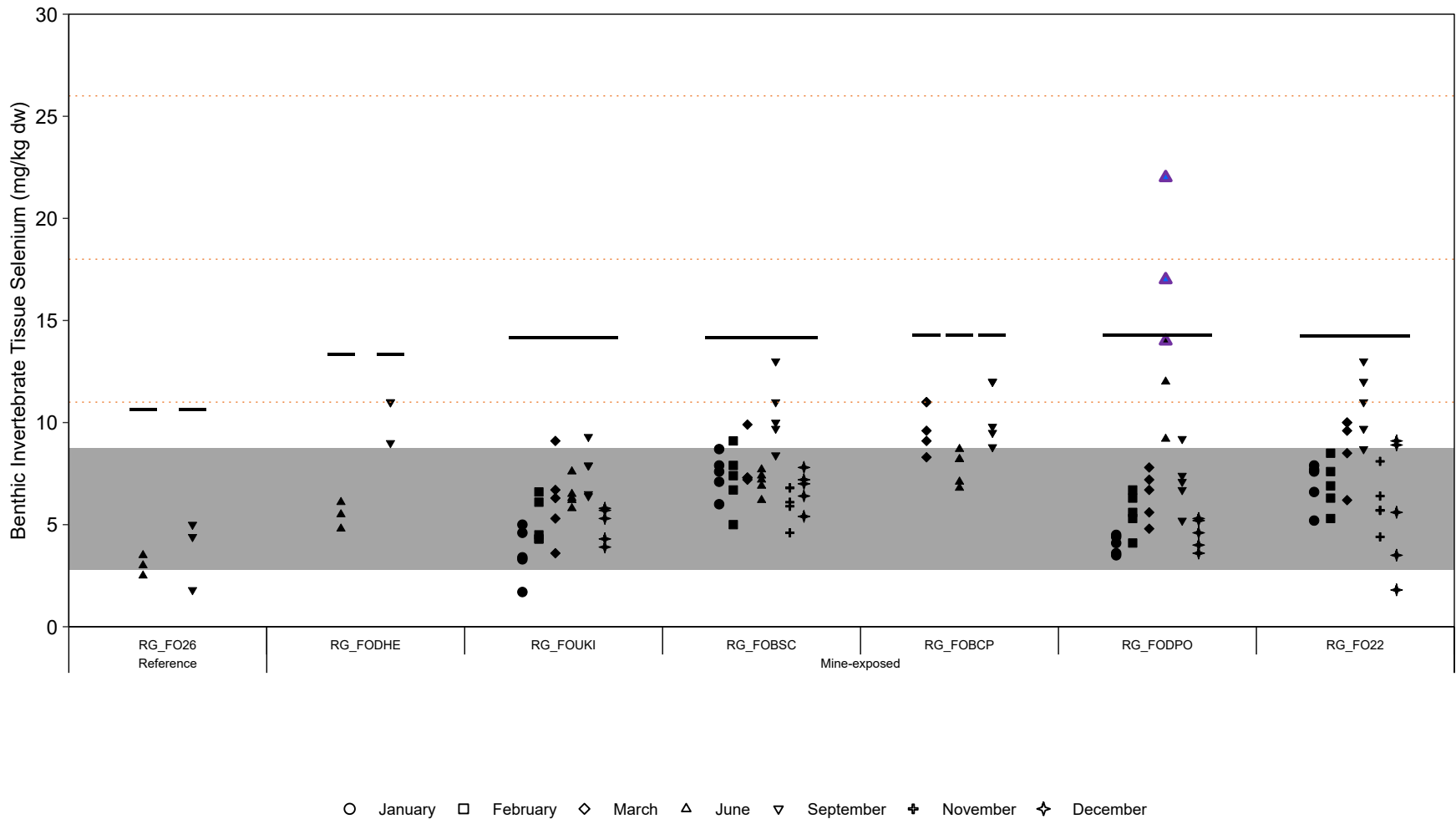


Figure K.2: Selenium Concentrations in Benthic Invertebrate Composite-Taxa Samples Compared to Predicted Values, Fording LAEMP, 2022

Notes: Black bars indicate the upper 95th prediction interval of the bioaccumulation model. Blue dots represent values exceeding the trigger (above the 97.5th percentile of normal range and above upper 95% prediction interval). Dotted lines indicate EVWQP benchmarks (11, 18, and 26 mg/kg respectively) for juvenile fish. Gray shading represents the reference area normal range defined as the 2.5th and 97.5th percentiles of the distribution of reference area data (pooled 1996 to 2019 data) reported in the RAEMP. Samples containing oligochaetes are highlighted with a purple border.

K4 SUMMARY

Except for two of three replicates at RG_FODHE, all samples from both mine-exposed and reference areas exceeded the %EPT biological trigger in 2022. This represented an increase in the number of trigger exceedances compared to previous years (Minnow and Lotic 2021, 2022) and is consistent with other findings in the 2022 FRO LAEMP identifying a greater spatial extent of effects to BIC.

The biological trigger for benthic invertebrate tissue selenium concentrations was not exceeded at any of the biological monitoring areas in 2022, except for two replicates collected at RG_FODPO in June; however, both replicate samples exceeding the biological trigger contained oligochaetes which are known to accumulate selenium more readily than other taxa (Luoma 2021). Overall, results from 2022 were improved compared to 2021, as two replicates at RG_FOBSC in 2021 exceeded the biological trigger for benthic invertebrate tissue selenium concentrations and these exceedances could not be understood from assessment of aqueous selenium concentrations or composite-taxa samples.

As discussed in the main report, biological triggers are consistent with the findings of the FRO LAEMP. Current biological triggers were sufficient to identify monitoring areas where biological responses are occurring, based on the integrated assessment conducted in the LAEMP, and no additional triggers are recommended at this time. Uncertainty, however, remains around the cause of the observed % EPT response at multiple FRO LAEMP monitoring areas, as noted above. In an effort to resolve uncertainty around the combined and individual effects of water quality, habitat, and other mine-related stressors on benthic invertebrate communities in lotic areas in the Elk River watershed, Minnow is developing a predictive model for benthic invertebrate community endpoints, as recently discussed with the EMC in April 2023. Uncertainties are expected to be reduced through this modelling effort, and additional monitoring or potential management responses will continue to be assessed through the adaptive management process.



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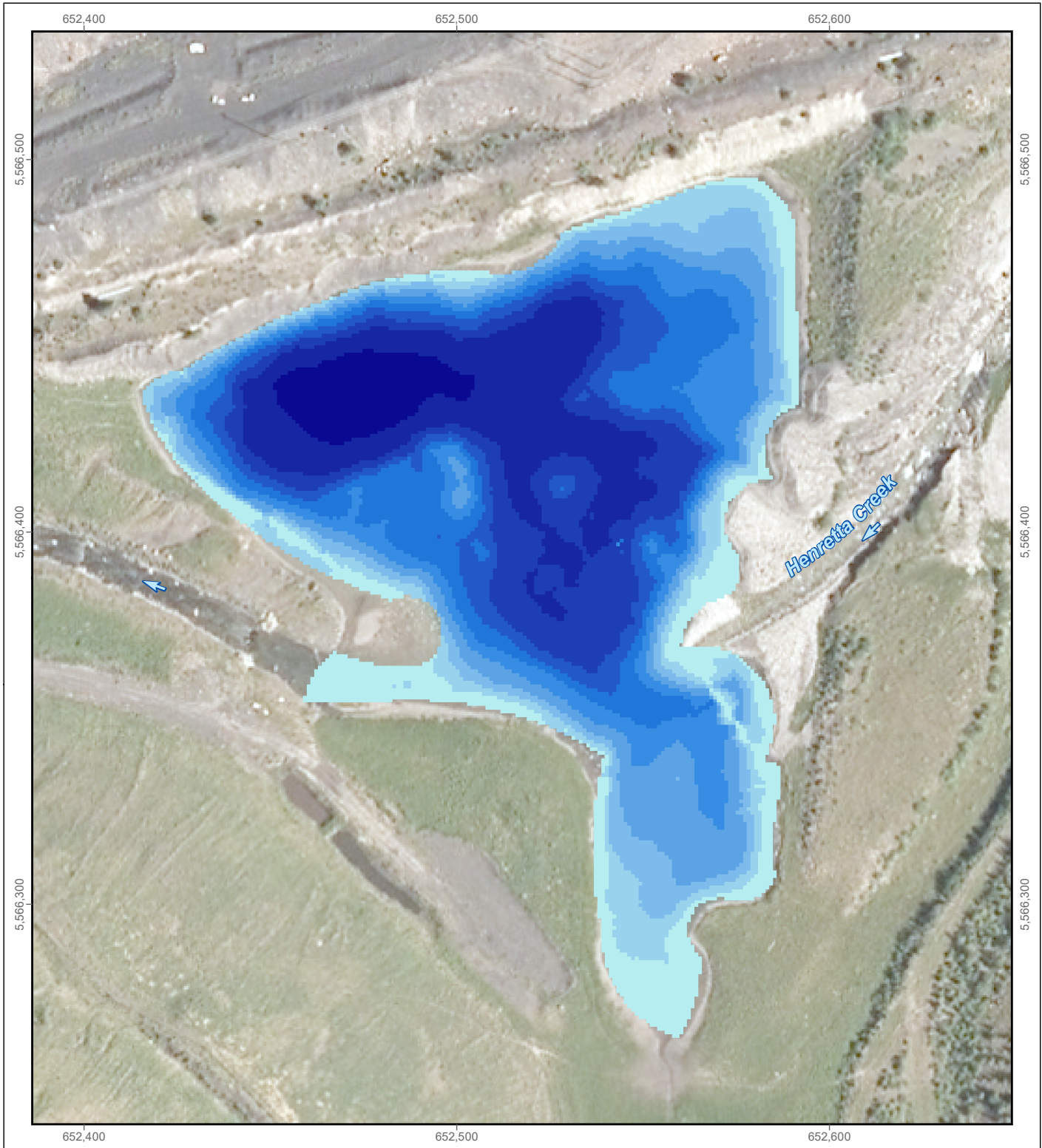
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APPENDIX

**HENRETTA
LAKE**

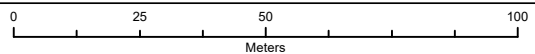


LEGEND

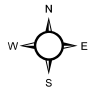
Bathymetry (m)

 0 - 1	 5 - 6
 1 - 2	 6 - 7
 2 - 3	 7 - 8
 3 - 4	 8 - 9
 4 - 5	 9 - 10

Henretta Lake Bathymetry



Projection: North American Datum 1983 UTM Zone 11
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Date: April 2023
 Project 227202.0022



Figure

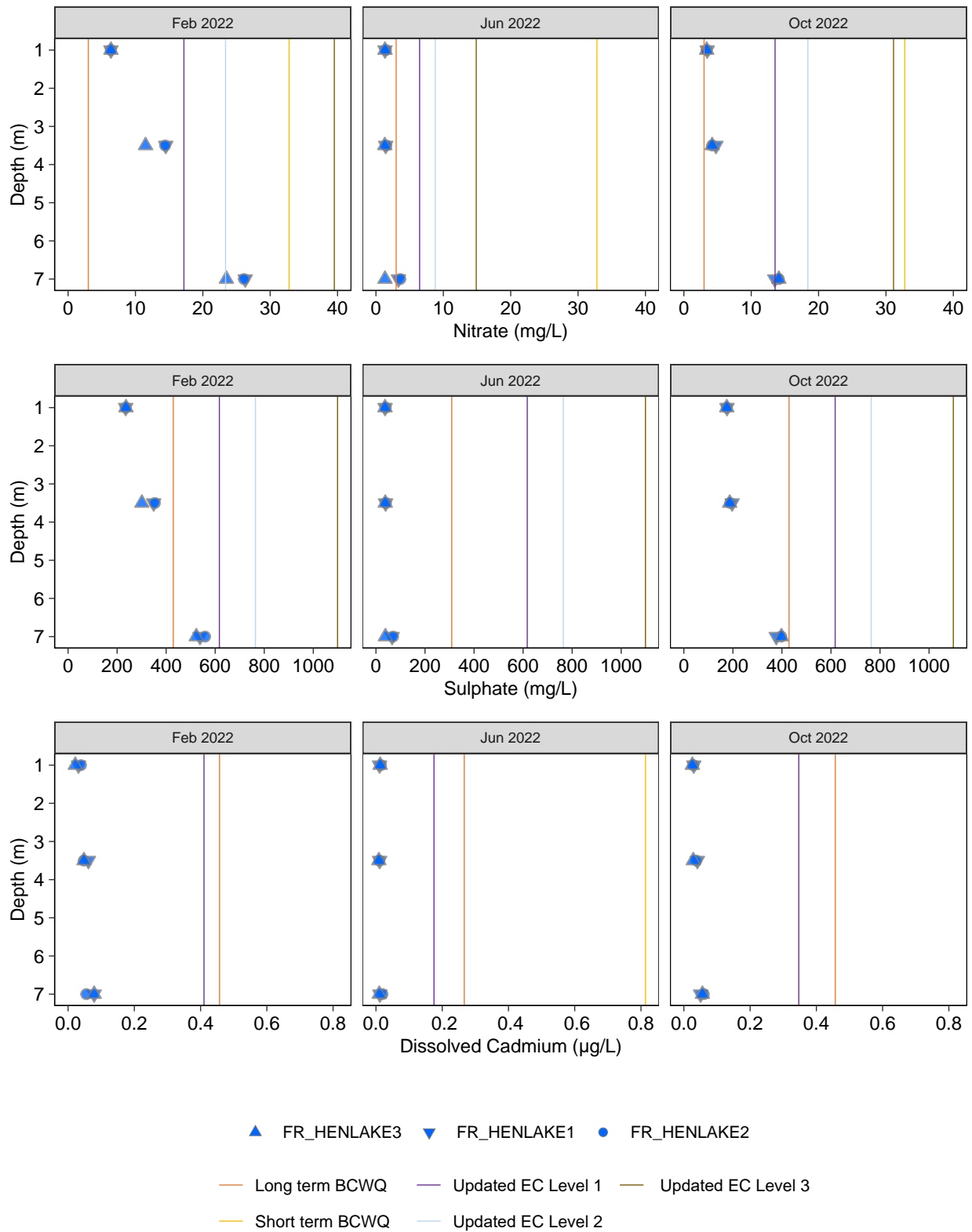


Figure : Selected Water Quality Concentrations in Henretta Lake, 2022

Note: 'EC' = Effects Concentration; Dissolved Cadmium is the only parameter with an EVWQP Benchmark shown instead of a UEC. The proposed benchmark for dissolved nickel was also applied. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Selenium speciation parameters that had 100 % censored data were excluded from the analyses.

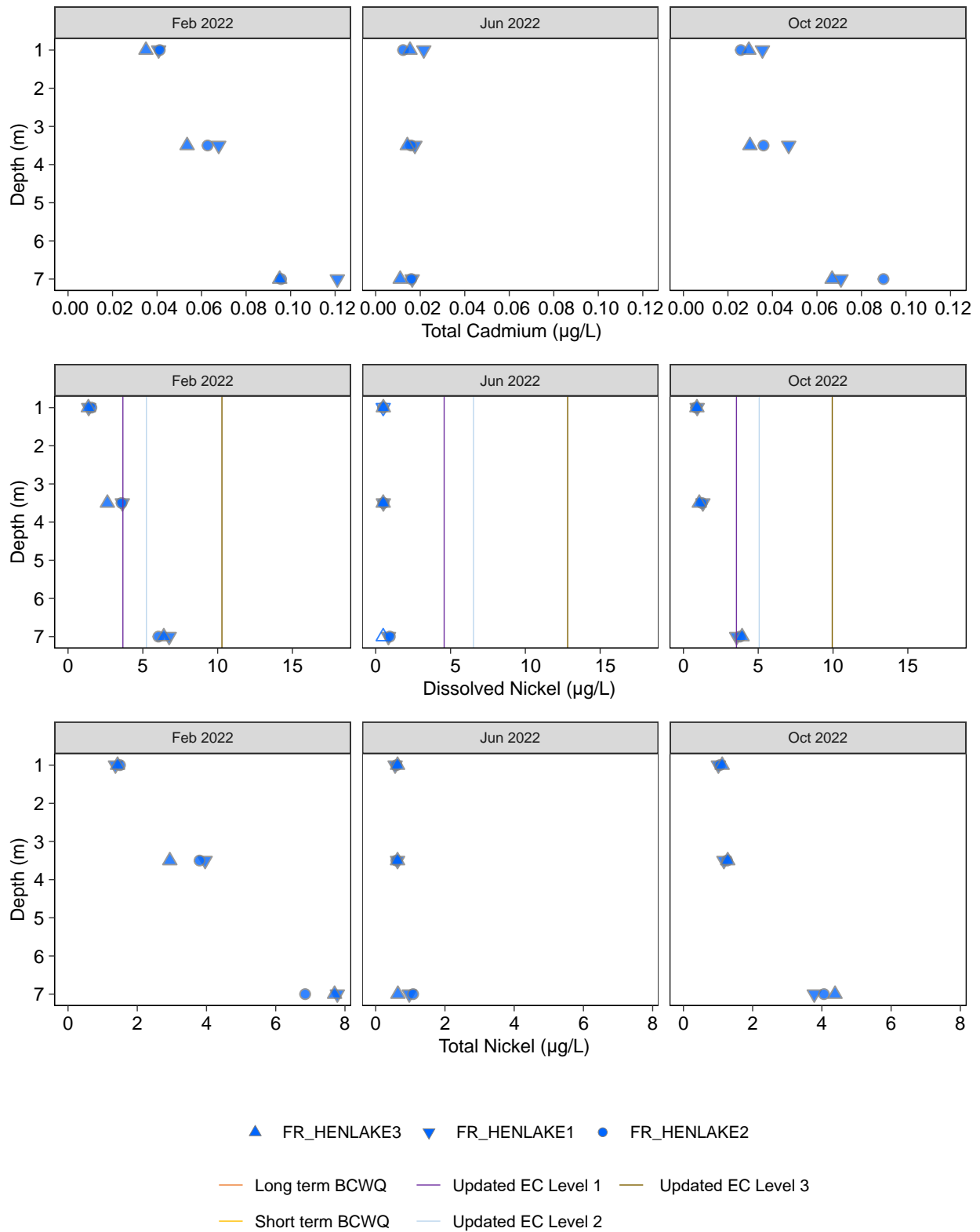


Figure : Selected Water Quality Concentrations in Henretta Lake, 2022

Note: 'EC' = Effects Concentration; Dissolved Cadmium is the only parameter with an EVWQP Benchmark shown instead of a UEC. The proposed benchmark for dissolved nickel was also applied. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Selenium speciation parameters that had 100 % censored data were excluded from the analyses.

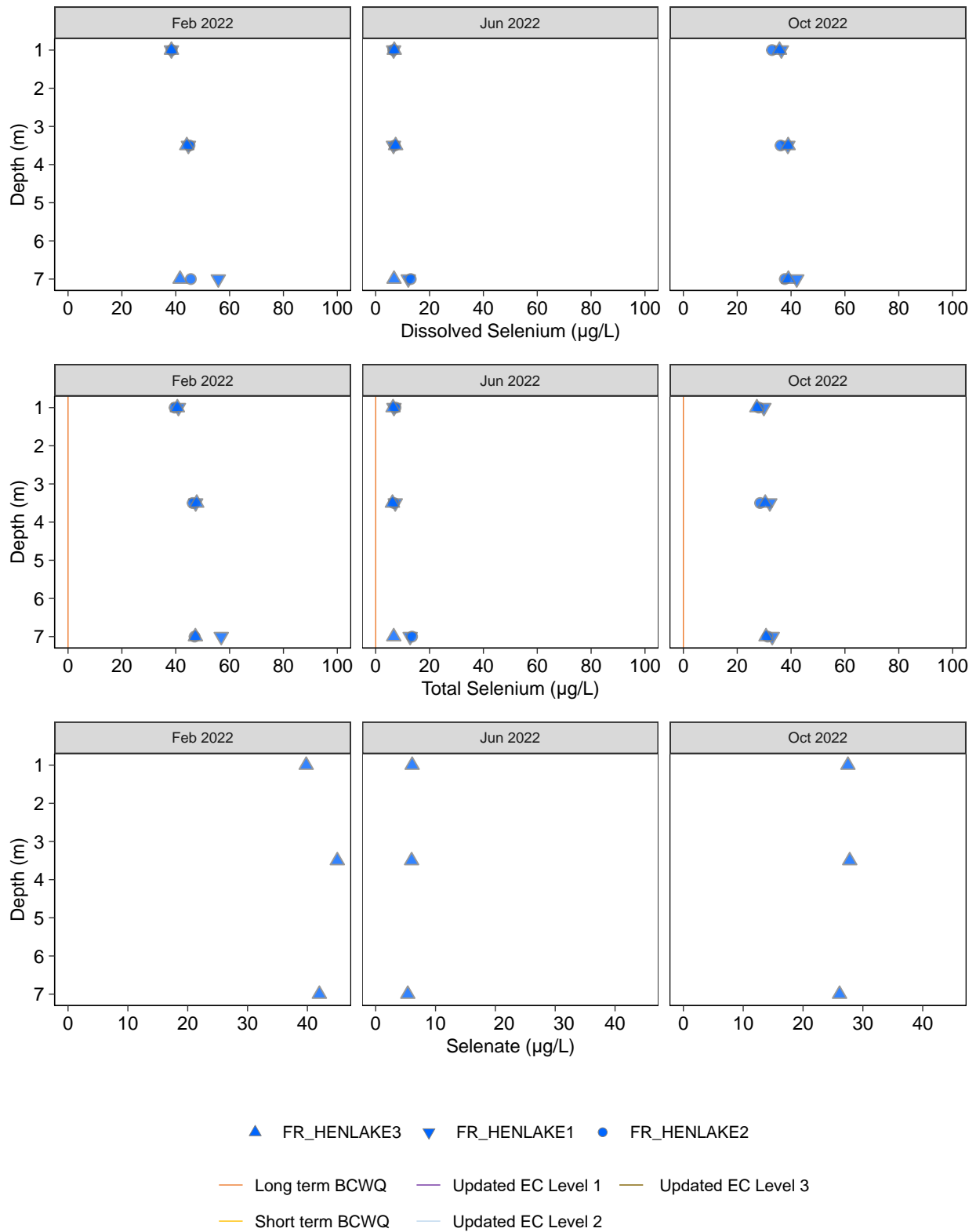


Figure : Selected Water Quality Concentrations in Henretta Lake, 2022

Note: 'EC' = Effects Concentration; Dissolved Cadmium is the only parameter with an EVWQP Benchmark shown instead of a UEC. The proposed benchmark for dissolved nickel was also applied. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Selenium speciation parameters that had 100 % censored data were excluded from the analyses.

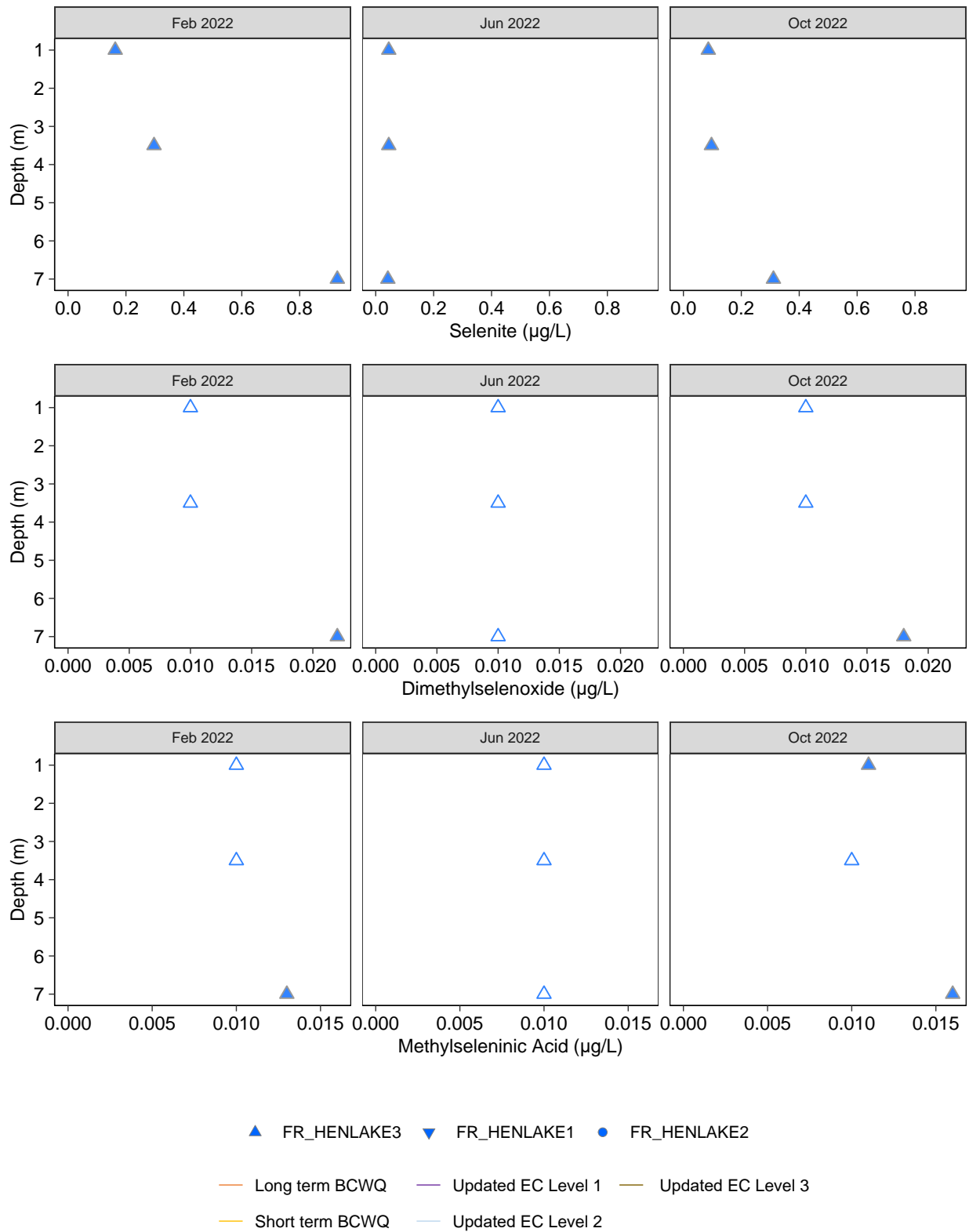


Figure : Selected Water Quality Concentrations in Henretta Lake, 2022

Note: 'EC' = Effects Concentration; Dissolved Cadmium is the only parameter with an EVWQP Benchmark shown instead of a UEC. The proposed benchmark for dissolved nickel was also applied. Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Selenium speciation parameters that had 100 % censored data were excluded from the analyses.

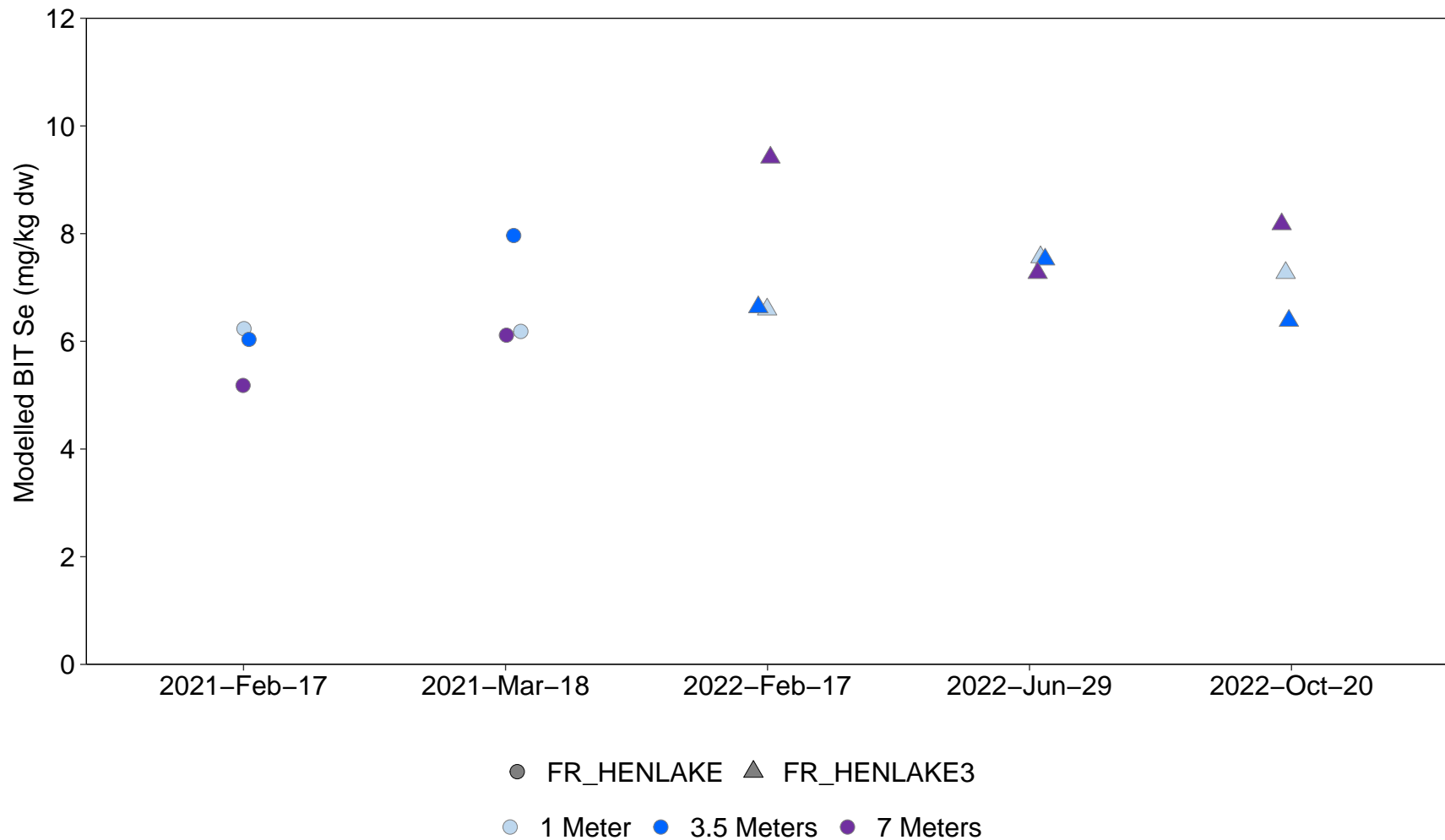


Figure 3: Modelled Benthic Invertebrate Tissue Selenium Concentrations, FRO LAEMP, 2021 to 2022

Notes: Predicted selenium concentrations in benthic invertebrate tissue were derived from de Bruyn and Luoma (2021) using selenium speciation data and sulphate concentrations from each sample to predict benthic invertebrate tissue selenium concentrations.

Table L.1: Henretta Lake *In Situ* Profile Comparisons, 2022

Depth	Temperature (°C)									Dissolved Oxygen (mg/L)									Conductivity								
	17-Feb-22			29-Jun-22			20-Oct-22			17-Feb-22			29-Jun-22			20-Oct-22			17-Feb-22			29-Jun-22			20-Oct-22		
	Min	Max	Range	Min	Max	Range	Min	Max	Range	Min	Max	Range	Min	Max	Range	Min	Max	Range	Min	Max	Range	Min	Max	Range	Min	Max	Range
0.5	0	1.2	1.2	4.5	4.7	0.2	4.9	5	0.1	9.21	9.94	0.73	10.35	10.38	0.03	10.31	10.71	0.4	375.9	401.1	25.2	165.7	171.3	5.6	351.9	356.6	4.7
1	0.3	1.2	0.9	4.7	4.8	0.1	4.9	5	0.1	9.4	9.79	0.39	10.35	10.39	0.04	10.43	10.58	0.15	377.2	405.1	27.9	165.2	171.3	6.1	352.8	356.6	3.8
1.5	0.3	1.3	1	4.5	4.7	0.2	4.9	4.9	0	9.4	9.97	0.57	10.34	10.39	0.05	10.42	10.42	0	369.5	405.9	36.4	165	172.8	7.8	353.4	353.4	0
2	1.2	1.3	0.1	4.5	4.7	0.2	4.9	5	0.1	9.36	9.69	0.33	10.33	10.39	0.06	10.33	10.45	0.12	381.4	407.2	25.8	165.1	172.5	7.4	353.3	356.6	3.3
2.5	1.3	1.4	0.1	4.6	4.8	0.2	4.9	5	0.1	8.91	9.4	0.49	10.34	10.38	0.04	10.18	10.51	0.33	379.8	417.6	37.8	165.1	173.5	8.4	354.5	357.9	3.4
3	1.4	1.8	0.4	4.6	4.8	0.2	4.9	5	0.1	7.16	8.89	1.73	10.33	10.37	0.04	10.33	10.49	0.16	416.9	507	90.1	166.8	172.8	6	355	361.1	6.1
3.5	2.2	2.4	0.2	4.6	4.7	0.1	5.1	5.2	0.1	5.09	5.76	0.67	10.33	10.37	0.04	10.25	10.32	0.07	548	597	49	167.2	173.1	5.9	360.1	382.4	22.3
4	2.5	2.5	0	4.6	4.7	0.1	5.2	5.5	0.3	4.4	4.77	0.37	10.32	10.36	0.04	9.44	10.12	0.68	579	629	50	166.9	172	5.1	390.4	411.4	21
4.5	2.6	2.7	0.1	4.6	4.7	0.1	5.4	5.4	0	3.77	4.22	0.45	10.32	10.37	0.05	9.82	9.82	0	599	649	50	167.1	174	6.9	415.2	415.2	0
5	2.8	3.2	0.4	4.6	4.7	0.1	5.2	5.5	0.3	1.16	3.8	2.64	10.32	10.36	0.04	9.24	9.83	0.59	359	803	444	167.1	178.4	11.3	408.4	427	18.6
5.5	3.2	3.4	0.2	4.6	4.7	0.1	5.7	6.3	0.6	0.6	1.59	0.99	10.25	10.34	0.09	9.61	9.86	0.25	780	858	78	168	182.1	14.1	440.6	470.4	29.8
6	3.3	3.6	0.3	4.6	4.7	0.1	6.2	7.1	0.9	0.36	0.98	0.62	10.21	10.34	0.13	10.36	11.17	0.81	827	891	64	167.5	197.1	29.6	485.1	534	48.9
6.5	3.4	3.8	0.4	4.6	4.7	0.1	7	8.2	1.2	0.32	0.72	0.4	10.2	10.35	0.15	11.85	12.87	1.02	860	933	73	170.1	198.9	28.8	558	631	73
7	3.5	4	0.5	4.6	4.7	0.1	7.6	8.4	0.8	0.32	0.6	0.28	9.9	10.34	0.44	12.22	13.13	0.91	901	979	78	168.2	221	52.8	624	681	57
7.5	3.6	4.1	0.5	4.6	4.8	0.2	8.3	8.3	0	0.3	0.49	0.19	9.77	10.35	0.58	12.43	12.43	0	958	1012	54	167.6	254.9	87.3	693	693	0
8	3.8	4	0.2	4.6	4.6	0	7.9	8.3	0.4	0.38	0.41	0.03	10.34	10.34	0	12.28	12.63	0.35	1036	1060	24	168.4	168.4	0	687	712	25
8.5	3.7	4.1	0.4	4.6	4.6	0	84.4	98.1	13.7	0.37	0.55	0.18	10.34	10.34	0	9.94	11.56	1.62	1083	1263	180	168	168	0	710	719	9
Average			0.4			0.1			1.1			0.65			0.11			0.44			81.6			16.7			19.2

Notes: In February 2022, *in situ* water quality profiles were collected from 11 locations within Henretta Lake. In June and October, *in situ* water quality profiles were only collected from FR_HENLAKE1, FR_HENLAKE2, and FR_HENLAKE3.

APPENDIX

**LABORATORY
REPORTS**

Results Summary CG2213010

Project REGIONAL EFFECTS PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 17-Sep-2022 11:30
Issue Date 04-Oct-2022 17:53
Amendment 0

Client Sample ID			RG_FO22_SE-1_2022-09-09_N	RG_FO22_SE-2_2022-09-09_N	RG_FO22_SE-3_2022-09-09_N	RG_FO22_SE-4_2022-09-09_N	RG_FO22_SE-5_2022-09-09_N	RG_HENUP_SE-1_2022-09-12_N	RG_HENUP_SE-2_2022-09-12_N	RG_HENUP_SE-3_2022-09-12_N	RG_FOUKI_SE-1_2022-09-13_N	RG_FOUKI_SE-2_2022-09-13_N
Date Sampled			09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	12-Sep-2022	12-Sep-2022	12-Sep-2022	13-Sep-2022	13-Sep-2022
Time Sampled			10:00	10:30	11:00	11:30	12:00	13:30	14:00	14:30	08:30	08:40
ALS Sample ID			CG2213010-001	CG2213010-002	CG2213010-003	CG2213010-004	CG2213010-005	CG2213010-006	CG2213010-007	CG2213010-008	CG2213010-009	CG2213010-010
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Physical Tests (Matrix: Soil/Solid)												
moisture	0.25	%	32.7	45.4	37.5	34.0	34.2	29.3	33.0	25.3	66.7	45.9
pH (1:2 soil:water)	0.10	pH units	8.02	7.53	7.90	7.95	8.11	8.19	8.40	8.50	7.92	8.27
Particle Size (Matrix: Soil/Solid)												
clay (<0.004mm)	1.0	%	2.1	4.7	2.5	1.4	1.6	2.0	2.5	1.7	4.8	5.1
grain size curve			See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached
silt (0.063mm - 0.0312mm)	1.0	%	7.5	20.9	9.0	2.9	9.2	9.3	8.1	4.1	19.7	17.3
silt (0.0312mm - 0.004mm)	1.0	%	6.0	19.7	9.3	3.5	8.2	8.4	9.3	5.4	22.3	21.1
sand (0.125mm - 0.063mm)	1.0	%	14.3	29.5	12.3	3.7	13.1	14.8	10.8	5.0	12.1	9.8
sand (0.25mm - 0.125mm)	1.0	%	39.0	22.7	40.0	21.6	23.1	22.4	20.3	15.5	18.7	11.8
sand (0.5mm - 0.25mm)	1.0	%	26.6	2.3	21.6	58.2	24.2	32.7	30.0	34.2	15.9	11.8
sand (1.0mm - 0.50mm)	1.0	%	4.3	<1.0	1.7	7.1	14.5	9.7	14.2	23.4	3.8	10.7
sand (2.0mm - 1.0mm)	1.0	%	<1.0	<1.0	<1.0	1.3	4.5	<1.0	3.0	6.1	<1.0	4.6
gravel (>2mm)	1.0	%	<1.0	<1.0	3.2	<1.0	1.6	<1.0	1.8	4.6	1.8	7.8
Organic / Inorganic Carbon (Matrix: Soil/Solid)												
carbon, inorganic [IC]	0.050	%	0.862	1.32	1.03	0.741	0.872	5.09	5.50	5.93	2.27	1.97
carbon, total [TC]	0.050	%	2.94	6.88	5.44	5.41	3.80	10.8	10.8	11.1	11.9	10.5
carbon, total organic [TOC]	0.050	%	2.08	5.56	4.41	4.67	2.93	5.71	5.30	5.17	9.63	8.53
carbon, inorganic [IC], (as CaCO3 equivalent)	0.40	%	7.18	11.0	8.61	6.17	7.27	42.4	45.8	49.4	19.0	16.4

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Date Sampled			09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	12-Sep-2022	12-Sep-2022	12-Sep-2022	13-Sep-2022	13-Sep-2022
Time Sampled			10:00	10:30	11:00	11:30	12:00	13:30	14:00	14:30	08:30	08:40
ALS Sample ID			CG2213010-001	CG2213010-002	CG2213010-003	CG2213010-004	CG2213010-005	CG2213010-006	CG2213010-007	CG2213010-008	CG2213010-009	CG2213010-010
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Metals (Matrix: Soil/Solid)												
aluminum	50	mg/kg	7810	7620	7800	7990	7140	2120	2340	1590	6700	6710
antimony	0.10	mg/kg	0.69	0.61	0.65	0.72	0.74	<0.10	0.11	<0.10	0.63	0.74
arsenic	0.10	mg/kg	6.74	5.22	5.77	6.92	6.32	1.76	1.84	1.34	5.51	5.72
barium	0.50	mg/kg	180	176	180	199	200	18.5	22.4	14.7	247	208
beryllium	0.10	mg/kg	0.66	0.64	0.68	0.75	0.71	0.14	0.17	0.12	0.56	0.62
bismuth	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
boron	5.0	mg/kg	7.1	7.9	8.4	6.7	6.2	<5.0	<5.0	<5.0	6.4	7.0
cadmium	0.020	mg/kg	1.06	1.44	1.20	1.12	1.21	0.436	0.352	0.352	1.87	2.28
calcium	50	mg/kg	33700	47400	36300	25800	34900	304000	372000	343000	86000	80600
chromium	0.50	mg/kg	14.6	14.5	13.7	14.7	13.9	7.55	7.78	6.07	12.6	12.4
cobalt	0.10	mg/kg	6.56	5.75	6.07	6.87	6.08	1.20	1.39	0.97	8.71	7.94
copper	0.50	mg/kg	12.6	13.9	12.5	13.1	13.3	1.89	2.19	1.54	15.3	16.5
iron	50	mg/kg	17700	13700	15600	18600	18800	3550	3900	2770	15500	17800
lead	0.50	mg/kg	9.74	9.24	9.72	10.0	9.76	2.26	2.68	1.93	9.37	11.8
lithium	2.0	mg/kg	9.4	10.3	9.6	8.9	9.3	8.5	9.9	7.1	10.7	11.6
magnesium	20	mg/kg	9210	12600	9050	5970	9280	46600	51300	37500	12600	12200
manganese	1.0	mg/kg	394	395	390	458	393	120	138	108	609	736
mercury	0.0050	mg/kg	0.0321	0.0413	0.0366	0.0270	0.0307	0.0081	0.0080	0.0075	0.0410	0.0418
molybdenum	0.10	mg/kg	1.48	1.45	1.55	1.64	1.64	0.46	0.49	0.34	1.83	2.46
nickel	0.50	mg/kg	28.0	30.9	28.3	29.7	26.7	8.04	9.36	6.56	45.9	53.6
phosphorus	50	mg/kg	1670	1360	1350	1500	1720	329	505	405	1390	1050
potassium	100	mg/kg	1750	1730	1850	1910	1650	570	660	460	1460	1350
selenium	0.20	mg/kg	1.57	2.56	1.84	1.59	1.56	0.32	0.39	0.28	2.80	21.2
silver	0.10	mg/kg	0.14	0.22	0.16	0.12	0.15	<0.10	<0.10	<0.10	0.19	0.22
sodium	50	mg/kg	85	84	83	76	79	196	212	187	89	90
strontium	0.50	mg/kg	69.1	62.8	69.2	71.6	68.7	141	167	155	83.8	84.7
sulfur	1000	mg/kg	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	1200	1100
thallium	0.050	mg/kg	0.227	0.252	0.236	0.226	0.216	0.057	0.070	<0.050	0.197	0.199
tin	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	1.0	mg/kg	19.5	25.8	18.3	13.3	19.0	18.4	25.3	15.9	21.6	21.7
tungsten	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	0.050	mg/kg	1.41	1.29	1.36	1.39	1.40	0.622	0.694	0.625	1.40	1.24
vanadium	0.20	mg/kg	34.6	30.7	33.9	35.6	33.5	7.66	8.15	5.75	28.0	27.0
zinc	2.0	mg/kg	122	115	113	126	121	41.3	44.9	36.5	153	184
zirconium	1.0	mg/kg	1.9	1.5	1.7	1.4	1.4	<1.0	<1.0	<1.0	1.0	1.1

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Date Sampled			09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	12-Sep-2022	12-Sep-2022	12-Sep-2022	13-Sep-2022	13-Sep-2022
Time Sampled			10:00	10:30	11:00	11:30	12:00	13:30	14:00	14:30	08:30	08:40
ALS Sample ID			CG2213010-001	CG2213010-002	CG2213010-003	CG2213010-004	CG2213010-005	CG2213010-006	CG2213010-007	CG2213010-008	CG2213010-009	CG2213010-010
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Polycyclic Aromatic Hydrocarbons (Matrix: Soil/Solid)												
acenaphthene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.117	0.079
acenaphthylene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
acridine	0.050	mg/kg	<0.050	0.052	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.202	0.145
anthracene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
benz(a)anthracene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.051	<0.050
benzo(a)pyrene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(b+j)fluoranthene	0.050	mg/kg	<0.050	0.076	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.116	0.084
benzo(b+j+k)fluoranthene	0.075	mg/kg	<0.075	0.076	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	0.116	0.084
benzo(g,h,i)perylene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.062	<0.050
benzo(k)fluoranthene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
chrysene	0.050	mg/kg	0.072	0.178	0.088	0.106	0.109	<0.050	<0.050	<0.050	0.298	0.187
dibenz(a,h)anthracene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
fluoranthene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
fluorene	0.050	mg/kg	<0.050	0.071	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.310	0.219
indeno(1,2,3-c,d)pyrene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
methylnaphthalene, 1+2-	0.050	mg/kg	0.344	1.21	0.625	0.616	0.582	0.095	0.166	0.248	3.54	2.43
methylnaphthalene, 1-	0.030	mg/kg	0.136	0.473	0.246	0.245	0.228	0.036	0.065	0.092	1.26	0.869
methylnaphthalene, 2-	0.030	mg/kg	0.208	0.733	0.379	0.371	0.354	0.059	0.101	0.156	2.28	1.56
naphthalene	0.010	mg/kg	0.090	0.302	0.168	0.158	0.151	0.021	0.033	0.053	0.721	0.502
phenanthrene	0.050	mg/kg	0.178	0.628	0.293	0.305	0.297	<0.050	<0.050	0.061	1.04	0.668
pyrene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.084	0.057
quinoline	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	0.065	mg/kg	<0.065	0.067	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	0.075	0.068
IACR (CCME)	0.60		0.61	0.98	0.62	0.63	0.63	<0.60	<0.60	<0.60	1.37	1.04
IACR AB (coarse)	0.10		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	0.10		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	<0.10
PAHs, total (BC Sched 3.4)	0.20	mg/kg	0.55	1.91	0.93	0.94	0.91	<0.20	<0.20	0.27	4.90	3.27
PAHs, total (EPA 16)	0.20	mg/kg	0.34	1.26	0.55	0.57	0.56	<0.20	<0.20	<0.20	2.80	1.80
Polycyclic Aromatic Hydrocarbons Surrogates (Matrix: Soil/Solid)												
acridine-d9	0.1	%	68.7	72.8	69.9	70.7	67.5	103	105	105	106	101
chrysene-d12	0.1	%	72.9	63.5	69.3	71.7	69.5	124	124	123	124	119
naphthalene-d8	0.1	%	68.1	61.3	65.9	68.2	65.4	113	112	113	116	109
phenanthrene-d10	0.1	%	66.1	62.1	65.5	65.8	63.3	115	116	115	114	109

Results Summary CG2213010

Project REGIONAL EFFECTS PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 17-Sep-2022 11:30
Issue Date 04-Oct-2022 17:53
Amendment 0

Client Sample ID			RG_FOUKI_SE-3_2022-09-13_N 13-Sep-2022	RG_FOUKI_SE-4_2022-09-13_N 13-Sep-2022	RG_FOUKI_SE-5_2022-09-13_N 13-Sep-2022	RG_SCOUTDS_SE-1_2022-09-13_N 14-Sep-2022	RG_SCOUTDS_SE-2_2022-09-14_N 14-Sep-2022	RG_SCOUTDS_SE-3_2022-09-14_N 14-Sep-2022	RG_SCOUTDS_SE-4_2022-09-14_N 14-Sep-2022	RG_SCOUTDS_SE-5_2022-09-14_N 14-Sep-2022
Date Sampled			08:50	09:00	09:10	10:30	11:00	11:30	12:00	13:30
Time Sampled			CG2213010-011	CG2213010-012	CG2213010-013	CG2213010-014	CG2213010-015	CG2213010-016	CG2213010-017	CG2213010-018
ALS Sample ID			Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Analyte	Lowest Detection Limit	Units								
Physical Tests (Matrix: Soil/Solid)										
moisture	0.25	%	87.2	85.5	71.7	77.5	85.3	78.0	84.3	69.7
pH (1:2 soil:water)	0.10	pH units	7.05	7.80	7.87	8.00	7.93	8.10	8.20	8.15
Particle Size (Matrix: Soil/Solid)										
clay (<0.004mm)	1.0	%	9.6	8.4	7.2	4.9	6.5	5.5	4.5	4.0
grain size curve			See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached
silt (0.063mm - 0.0312mm)	1.0	%	32.5	29.6	22.8	19.2	24.4	19.5	16.7	16.6
silt (0.0312mm - 0.004mm)	1.0	%	37.5	34.3	26.6	21.0	27.1	21.9	19.5	17.6
sand (0.125mm - 0.063mm)	1.0	%	7.1	11.2	12.0	11.5	11.0	11.3	9.9	13.8
sand (0.25mm - 0.125mm)	1.0	%	5.3	8.8	11.4	11.5	8.3	10.8	11.4	16.1
sand (0.5mm - 0.25mm)	1.0	%	4.1	3.7	10.5	14.9	5.2	11.3	24.9	16.7
sand (1.0mm - 0.50mm)	1.0	%	2.4	2.0	3.9	9.2	5.7	12.5	9.3	6.7
sand (2.0mm - 1.0mm)	1.0	%	1.5	2.0	2.3	3.9	4.0	7.2	2.6	2.7
gravel (>2mm)	1.0	%	<1.0	<1.0	3.3	3.9	7.8	<1.0	1.2	5.8
Organic / Inorganic Carbon (Matrix: Soil/Solid)										
carbon, inorganic [IC]	0.050	%	2.60	2.41	2.08	1.94	2.17	2.00	1.82	1.92
carbon, total [TC]	0.050	%	19.2	16.6	14.6	10.7	13.3	10.4	10.3	9.18
carbon, total organic [TOC]	0.050	%	16.6	14.2	12.5	8.76	11.1	8.40	8.48	7.26
carbon, inorganic [IC], (as CaCO3 equivalent)	0.40	%	21.6	20.1	17.4	16.2	18.1	16.7	15.2	16.0

Results Summary CG2213010

Project REGIONAL EFFECTS PROGRAM
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Amendment 0

Client Sample ID			RG_FOUKI_SE-3_2022-09-13_N 13-Sep-2022	RG_FOUKI_SE-4_2022-09-13_N 13-Sep-2022	RG_FOUKI_SE-5_2022-09-13_N 13-Sep-2022	RG_SCOUTDS_SE-1_2022-09-13_N 14-Sep-2022	RG_SCOUTDS_SE-2_2022-09-14_N 14-Sep-2022	RG_SCOUTDS_SE-3_2022-09-14_N 14-Sep-2022	RG_SCOUTDS_SE-4_2022-09-14_N 14-Sep-2022	RG_SCOUTDS_SE-5_2022-09-14_N 14-Sep-2022
Date Sampled			08:50	09:00	09:10	10:30	11:00	11:30	12:00	13:30
Time Sampled										
ALS Sample ID			CG2213010-011	CG2213010-012	CG2213010-013	CG2213010-014	CG2213010-015	CG2213010-016	CG2213010-017	CG2213010-018
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Metals (Matrix: Soil/Solid)										
aluminum	50	mg/kg	8500	4680	4430	4850	3560	4990	4960	4610
antimony	0.10	mg/kg	0.76	0.57	0.56	0.54	0.39	0.49	0.52	0.48
arsenic	0.10	mg/kg	4.80	4.70	4.43	4.79	4.02	4.68	4.78	4.43
barium	0.50	mg/kg	299	268	176	166	180	184	190	154
beryllium	0.10	mg/kg	0.63	0.50	0.53	0.49	0.41	0.52	0.47	0.47
bismuth	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
boron	5.0	mg/kg	8.3	6.6	5.2	6.7	5.5	5.5	5.4	5.1
cadmium	0.020	mg/kg	3.09	2.60	2.11	2.10	2.79	2.07	2.10	1.85
calcium	50	mg/kg	104000	92100	69100	68900	83400	64600	64700	68000
chromium	0.50	mg/kg	13.4	9.73	8.87	9.71	7.71	9.39	9.85	9.29
cobalt	0.10	mg/kg	9.12	8.60	6.82	7.07	7.83	7.30	7.69	6.78
copper	0.50	mg/kg	18.8	16.1	13.7	13.2	14.0	14.6	13.9	12.8
iron	50	mg/kg	16800	13400	13000	15700	11700	14700	14500	13900
lead	0.50	mg/kg	9.95	9.00	8.54	8.30	8.51	8.51	8.69	8.03
lithium	2.0	mg/kg	9.6	8.1	7.0	7.8	6.1	8.0	8.0	8.0
magnesium	20	mg/kg	14600	12200	11500	11200	11200	9590	9860	10800
manganese	1.0	mg/kg	926	949	624	590	659	570	607	514
mercury	0.0050	mg/kg	0.0384	0.0388	0.0363	0.0331	0.0340	0.0350	0.0349	0.0324
molybdenum	0.10	mg/kg	2.29	1.85	1.66	1.55	1.45	1.51	1.50	1.38
nickel	0.50	mg/kg	60.4	52.2	43.6	45.8	54.6	47.7	49.4	42.4
phosphorus	50	mg/kg	1600	776	1310	1850	1050	1420	1440	1430
potassium	100	mg/kg	1620	1010	940	1120	800	1140	1090	940
selenium	0.20	mg/kg	5.04	3.56	3.22	2.75	3.39	2.20	1.74	1.93
silver	0.10	mg/kg	0.22	0.21	0.18	0.16	0.19	0.17	0.17	0.15
sodium	50	mg/kg	107	86	74	80	74	76	80	72
strontium	0.50	mg/kg	99.6	76.7	67.8	66.9	74.2	67.4	76.5	66.4
sulfur	1000	mg/kg	<1000	1300	<1000	1100	1400	<1000	<1000	<1000
thallium	0.050	mg/kg	0.203	0.148	0.146	0.163	0.119	0.147	0.158	0.138
tin	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	1.0	mg/kg	17.1	21.1	15.8	15.6	14.2	18.2	16.0	12.5
tungsten	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	0.050	mg/kg	1.31	1.28	1.11	1.13	1.15	1.11	1.11	1.03
vanadium	0.20	mg/kg	28.2	21.1	19.7	21.8	15.3	21.9	21.4	19.6
zinc	2.0	mg/kg	240	186	157	159	194	165	167	147
zirconium	1.0	mg/kg	1.0	1.1	1.0	1.5	1.3	<1.0	<1.0	<1.0

Results Summary CG2213010

Project REGIONAL EFFECTS PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 17-Sep-2022 11:30
Issue Date 04-Oct-2022 17:53
Amendment 0

Client Sample ID			RG_FOUKI_SE-3_2022-09-13_N 13-Sep-2022	RG_FOUKI_SE-4_2022-09-13_N 13-Sep-2022	RG_FOUKI_SE-5_2022-09-13_N 13-Sep-2022	RG_SCOUTDS_SE-1_2022-09-13_N 14-Sep-2022	RG_SCOUTDS_SE-2_2022-09-14_N 14-Sep-2022	RG_SCOUTDS_SE-3_2022-09-14_N 14-Sep-2022	RG_SCOUTDS_SE-4_2022-09-14_N 14-Sep-2022	RG_SCOUTDS_SE-5_2022-09-14_N 14-Sep-2022
Date Sampled			08:50	09:00	09:10	10:30	11:00	11:30	12:00	13:30
Time Sampled			CG2213010-011	CG2213010-012	CG2213010-013	CG2213010-014	CG2213010-015	CG2213010-016	CG2213010-017	CG2213010-018
ALS Sample ID			Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Analyte	Lowest Detection Limit	Units								
Polycyclic Aromatic Hydrocarbons (Matrix: Soil/Solid)										
acenaphthene	0.050	mg/kg	0.375	0.326	0.157	0.130	0.262	0.241	0.314	0.121
acenaphthylene	0.050	mg/kg	<0.074	<0.073	<0.050	<0.050	<0.074	<0.050	<0.069	<0.050
acridine	0.050	mg/kg	0.674	0.583	0.292	0.224	0.452	0.448	0.572	0.231
anthracene	0.050	mg/kg	<0.074	<0.073	<0.050	<0.050	<0.074	<0.050	<0.069	<0.050
benz(a)anthracene	0.050	mg/kg	0.163	0.147	0.074	0.059	0.129	0.118	0.146	0.061
benzo(a)pyrene	0.050	mg/kg	0.140	0.123	0.061	0.051	0.098	0.100	0.116	<0.050
benzo(b+j)fluoranthene	0.050	mg/kg	0.368	0.290	0.165	0.142	0.271	0.286	0.389	0.138
benzo(b+j+k)fluoranthene	0.075	mg/kg	0.368	0.290	0.165	0.142	0.271	0.286	0.497	0.138
benzo(g,h,i)perylene	0.050	mg/kg	0.180	0.150	0.082	0.071	0.138	0.149	0.174	0.062
benzo(k)fluoranthene	0.050	mg/kg	<0.074	<0.073	<0.050	<0.050	<0.074	<0.050	0.108	<0.050
chrysene	0.050	mg/kg	0.887	0.668	0.383	0.319	0.676	0.711	0.892	0.273
dibenz(a,h)anthracene	0.050	mg/kg	0.082	0.073	<0.050	<0.050	<0.074	0.060	0.072	<0.050
fluoranthene	0.050	mg/kg	0.115	0.110	0.055	<0.050	0.102	0.112	0.131	<0.050
fluorene	0.050	mg/kg	1.03	0.878	0.444	0.343	0.714	0.658	0.811	0.340
indeno(1,2,3-c,d)pyrene	0.050	mg/kg	<0.074	<0.073	<0.050	<0.050	<0.074	<0.050	<0.069	<0.050
methylnaphthalene, 1+2-	0.050	mg/kg	11.2	9.77	4.85	4.11	7.69	7.41	9.78	3.90
methylnaphthalene, 1-	0.030	mg/kg	3.97	3.48	1.73	1.49	2.79	2.75	3.56	1.40
methylnaphthalene, 2-	0.030	mg/kg	7.28	6.29	3.12	2.62	4.90	4.66	6.22	2.50
naphthalene	0.010	mg/kg	2.29	2.02	0.982	0.846	1.58	1.52	2.07	0.785
phenanthrene	0.050	mg/kg	3.03	2.72	1.38	1.17	2.26	2.28	3.02	1.14
pyrene	0.050	mg/kg	0.248	0.228	0.114	0.098	0.187	0.192	0.240	0.093
quinoline	0.050	mg/kg	<0.074	<0.073	<0.050	<0.050	<0.074	<0.050	<0.069	<0.050
B(a)P total potency equivalents [B(a)P TPE]	0.065	mg/kg	0.293	0.255	0.120	0.105	0.190	0.214	0.266	0.078
IACR (CCME)	0.60		4.22	3.49	1.89	1.64	3.10	3.20	4.64	1.53
IACR AB (coarse)	0.10		0.14	0.12	<0.10	<0.10	0.11	0.10	0.20	<0.10
IACR AB (fine)	0.10		0.27	0.23	0.13	0.12	0.21	0.20	0.38	0.11
PAHs, total (BC Sched 3.4)	0.20	mg/kg	15.6	13.6	6.77	5.64	10.9	10.6	14.0	5.31
PAHs, total (EPA 16)	0.20	mg/kg	8.91	7.73	3.90	3.23	6.42	6.43	8.48	3.01
Polycyclic Aromatic Hydrocarbons Surrogates (Matrix: Soil/Solid)										
acridine-d9	0.1	%	112	114	109	111	68.1	63.0	62.7	115
chrysene-d12	0.1	%	127	112	128	128	83.0	75.1	72.0	114
naphthalene-d8	0.1	%	126	115	120	119	76.1	70.9	72.1	120
phenanthrene-d10	0.1	%	112	127	119	118	74.8	69.4	68.6	118

Results Summary CG2213410

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 23-Sep-2022 09:30
Issue Date 13-Oct-2022 20:13
Amendment 0

Client Sample ID			RG_FOBCP_SE-1_LAEMP_FRO_2022-09-14_N	RG_FOBCP_SE-2_LAEMP_FRO_2022-09-14_N	RG_FOBCP_SE-3_LAEMP_FRO_2022-09-14_N	RG_FOBCP_SE-4_LAEMP_FRO_2022-09-14_N	RG_FOBCP_SE-5_LAEMP_FRO_2022-09-15_N	RG_FOBKS_SE-1_LAEMP_FRO_2022-09-12_N	RG_FOBKS_SE-2_LAEMP_FRO_2022-09-13_N	RG_FOBKS_SE-3_LAEMP_FRO_2022-09-13_N	RG_FOBKS_SE-4_LAEMP_FRO_2022-09-13_N	RG_FOBKS_SE-5_LAEMP_FRO_2022-09-13_N	RG_RIVER_SE-1_LAEMP_FRO_2022-09-15_N
Date Sampled			14-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022	15-Sep-2022	12-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	15-Sep-2022
Time Sampled			12:50	13:00	13:10	13:20	13:30	11:30	11:40	11:50	12:00	12:10	12:50
ALS Sample ID			CG2213410-001	CG2213410-002	CG2213410-003	CG2213410-004	CG2213410-005	CG2213410-006	CG2213410-007	CG2213410-008	CG2213410-009	CG2213410-010	CG2213410-011
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Physical Tests (Matrix: Soil/Solid)													
moisture	0.25	%	47.0	32.6	30.4	32.0	42.9	25.4	27.8	37.0	32.9	47.3	37.8
pH (1:2 soil:water)	0.10	pH units	8.26	8.28	8.16	8.06	8.33	8.14	8.23	8.26	8.19	8.23	8.33
Particle Size (Matrix: Soil/Solid)													
clay (<0.004mm)	1.0	%	3.4	1.7	<1.0	2.1	3.0	2.6	2.0	2.9	2.6	2.8	4.6
grain size curve			See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached
silt (0.063mm - 0.0312mm)	1.0	%	13.2	3.7	3.3	3.4	14.7	10.0	4.8	9.3	7.9	12.3	12.7
silt (0.0312mm - 0.004mm)	1.0	%	16.0	5.0	4.3	4.3	15.1	12.1	6.1	10.8	8.8	14.9	16.9
sand (0.125mm - 0.063mm)	1.0	%	14.8	5.1	6.1	4.8	20.1	7.3	5.2	13.3	12.9	8.9	14.4
sand (0.25mm - 0.125mm)	1.0	%	17.7	11.7	27.1	7.4	26.1	11.2	7.8	19.4	24.4	9.4	15.8
sand (0.5mm - 0.25mm)	1.0	%	19.4	42.6	43.1	35.0	13.2	14.0	18.5	24.5	29.5	11.0	19.4
sand (1.0mm - 0.50mm)	1.0	%	8.4	26.3	12.8	37.3	2.6	14.2	29.8	8.1	6.4	25.6	7.8
sand (2.0mm - 1.0mm)	1.0	%	1.7	2.3	1.4	4.9	1.9	16.0	15.5	5.3	2.8	14.5	3.4
gravel (>2mm)	1.0	%	5.4	1.6	1.9	<1.0	3.3	12.6	10.3	6.4	4.7	<1.0	5.0
Organic / Inorganic Carbon (Matrix: Soil/Solid)													
carbon, inorganic [IC]	0.050	%	2.13	1.29	1.41	1.20	2.04	2.00	1.77	2.00	1.73	1.50	1.98
carbon, total [TC]	0.050	%	7.29	4.01	3.72	4.98	6.69	7.11	4.56	8.65	5.70	6.70	7.67
carbon, total organic [TOC]	0.050	%	5.16	2.72	2.31	3.78	4.65	5.11	2.79	6.65	3.97	5.20	5.69
carbon, inorganic [IC], (as CaCO3 equivalent)	0.40	%	17.7	10.8	11.7	10.0	17.0	16.7	14.8	16.6	14.4	12.5	16.5

Results Summary CG2213410

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 23-Sep-2022 09:30
Issue Date 13-Oct-2022 20:13
Amendment 0

Client Sample ID			RG_FOBCP_SE-1_LAEMP_FRO_2022-09-14_N	RG_FOBCP_SE-2_LAEMP_FRO_2022-09-14_N	RG_FOBCP_SE-3_LAEMP_FRO_2022-09-14_N	RG_FOBCP_SE-4_LAEMP_FRO_2022-09-14_N	RG_FOBCP_SE-5_LAEMP_FRO_2022-09-15_N	RG_FOBKS_SE-1_LAEMP_FRO_2022-09-12_N	RG_FOBKS_SE-2_LAEMP_FRO_2022-09-13_N	RG_FOBKS_SE-3_LAEMP_FRO_2022-09-13_N	RG_FOBKS_SE-4_LAEMP_FRO_2022-09-13_N	RG_FOBKS_SE-5_LAEMP_FRO_2022-09-13_N	RG_RIVER_SE-1_LAEMP_FRO_2022-09-15_N
Date Sampled			14-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022	15-Sep-2022	12-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	15-Sep-2022
Time Sampled			12:50	13:00	13:10	13:20	13:30	11:30	11:40	11:50	12:00	12:10	12:50
ALS Sample ID			CG2213410-001	CG2213410-002	CG2213410-003	CG2213410-004	CG2213410-005	CG2213410-006	CG2213410-007	CG2213410-008	CG2213410-009	CG2213410-010	CG2213410-011
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Metals (Matrix: Soil/Solid)													
aluminum	50	mg/kg	5200	5400	5320	7920	6370	8730	5630	4640	5000	5280	5250
antimony	0.10	mg/kg	0.59	0.73	0.73	0.89	0.57	0.62	0.61	0.63	0.65	0.58	0.58
arsenic	0.10	mg/kg	4.62	5.92	6.16	6.45	4.78	5.95	5.24	4.75	5.04	4.51	5.48
barium	0.50	mg/kg	210	200	184	266	215	198	160	200	161	216	209
beryllium	0.10	mg/kg	0.50	0.60	0.63	0.82	0.55	0.67	0.58	0.54	0.52	0.50	0.55
bismuth	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
boron	5.0	mg/kg	5.2	5.1	5.2	8.5	7.5	10.0	5.9	<5.0	<5.0	<5.0	5.7
cadmium	0.020	mg/kg	1.99	1.37	1.35	1.55	1.84	1.43	1.38	1.44	1.42	1.58	1.91
calcium	50	mg/kg	72600	44400	61900	41900	71900	70600	75400	63800	57900	60100	72800
chromium	0.50	mg/kg	9.75	9.89	10.7	13.5	11.9	14.5	10.4	8.19	8.92	9.91	10.1
cobalt	0.10	mg/kg	6.65	5.42	5.74	6.18	5.74	5.47	5.06	6.02	5.83	6.01	6.54
copper	0.50	mg/kg	12.5	12.7	11.2	15.1	11.7	12.6	12.4	11.1	12.1	13.3	12.3
iron	50	mg/kg	13700	16900	22400	19100	12800	21300	19300	13000	13700	12300	13200
lead	0.50	mg/kg	7.15	7.90	7.50	9.09	7.15	7.85	7.07	7.21	7.81	7.50	7.21
lithium	2.0	mg/kg	8.3	10.0	7.9	11.3	9.8	11.8	9.5	8.3	9.3	8.6	8.3
magnesium	20	mg/kg	10600	7810	9030	6780	13300	10200	10100	10400	10400	11700	11000
manganese	1.0	mg/kg	459	437	464	500	465	468	425	448	437	432	465
mercury	0.0050	mg/kg	0.0339	0.0270	0.0308	0.0281	0.0317	0.0263	0.0252	0.0319	0.0288	0.0345	0.0376
molybdenum	0.10	mg/kg	1.46	1.47	1.59	1.93	1.24	1.65	1.33	1.22	1.26	1.33	1.36
nickel	0.50	mg/kg	47.1	35.6	34.4	39.9	51.4	32.7	30.3	33.9	35.5	36.1	47.6
phosphorus	50	mg/kg	1050	1370	1370	1550	1270	3850	1130	1040	1120	986	1190
potassium	100	mg/kg	1310	1330	1390	2170	1780	2450	1430	1120	1160	1290	1350
selenium	0.20	mg/kg	1.87	0.92	0.78	1.07	1.86	0.97	0.90	1.23	1.01	1.74	1.85
silver	0.10	mg/kg	0.15	0.14	0.10	0.15	0.15	0.13	0.12	0.12	0.13	0.16	0.15
sodium	50	mg/kg	71	64	72	69	83	113	72	68	67	69	71
strontium	0.50	mg/kg	79.9	98.1	79.2	109	75.7	98.3	95.8	70.3	68.8	69.0	74.0
sulfur	1000	mg/kg	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
thallium	0.050	mg/kg	0.224	0.194	0.187	0.263	0.230	0.208	0.171	0.161	0.180	0.170	0.199
tin	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	1.0	mg/kg	7.9	5.8	7.0	9.8	11.5	10.5	6.2	4.4	4.3	8.0	9.3
tungsten	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	0.050	mg/kg	1.07	1.09	1.05	1.25	1.02	1.60	1.02	0.966	0.982	0.979	1.07
vanadium	0.20	mg/kg	26.3	28.5	30.9	39.5	30.6	39.4	28.7	22.1	23.5	25.1	26.6
zinc	2.0	mg/kg	149	136	132	145	140	129	121	122	126	134	150
zirconium	1.0	mg/kg	<1.0	<1.0	<1.0	1.0	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	<1.0

Results Summary CG2213410

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 23-Sep-2022 09:30
Issue Date 13-Oct-2022 20:13
Amendment 0

Client Sample ID			RG_FOBCP_SE-1_LAEMP_FRO_2022-09-14_N	RG_FOBCP_SE-2_LAEMP_FRO_2022-09-14_N	RG_FOBCP_SE-3_LAEMP_FRO_2022-09-14_N	RG_FOBCP_SE-4_LAEMP_FRO_2022-09-14_N	RG_FOBCP_SE-5_LAEMP_FRO_2022-09-15_N	RG_FOBKS_SE-1_LAEMP_FRO_2022-09-12_N	RG_FOBKS_SE-2_LAEMP_FRO_2022-09-13_N	RG_FOBKS_SE-3_LAEMP_FRO_2022-09-13_N	RG_FOBKS_SE-4_LAEMP_FRO_2022-09-13_N	RG_FOBKS_SE-5_LAEMP_FRO_2022-09-13_N	RG_RIVER_SE-1_LAEMP_FRO_2022-09-15_N
Date Sampled			14-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022	15-Sep-2022	12-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	15-Sep-2022
Time Sampled			12:50	13:00	13:10	13:20	13:30	11:30	11:40	11:50	12:00	12:10	12:50
ALS Sample ID			CG2213410-001	CG2213410-002	CG2213410-003	CG2213410-004	CG2213410-005	CG2213410-006	CG2213410-007	CG2213410-008	CG2213410-009	CG2213410-010	CG2213410-011
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Polycyclic Aromatic Hydrocarbons (Matrix: Soil/Solid)													
acenaphthene	0.050	mg/kg	0.070	<0.050	<0.050	<0.050	0.059	<0.050	<0.050	<0.050	<0.050	0.087	0.050
acenaphthylene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
acridine	0.050	mg/kg	0.125	<0.050	<0.050	<0.050	0.097	<0.050	<0.050	0.067	0.062	0.140	0.088
anthracene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
benz(a)anthracene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(a)pyrene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(b+j)fluoranthene	0.050	mg/kg	0.083	<0.050	<0.050	<0.050	0.075	<0.050	<0.050	<0.050	<0.050	0.082	0.070
benzo(b+j+k)fluoranthene	0.075	mg/kg	0.083	<0.075	<0.075	<0.075	0.075	<0.075	<0.075	<0.075	<0.075	0.082	<0.075
benzo(g,h,i)perylene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(k)fluoranthene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
chrysene	0.050	mg/kg	0.198	0.089	0.078	0.072	0.178	<0.050	0.054	0.097	0.110	0.189	0.152
dibenz(a,h)anthracene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
fluoranthene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
fluorene	0.050	mg/kg	0.181	0.063	<0.050	<0.050	0.147	<0.050	<0.050	0.111	0.099	0.258	0.135
indeno(1,2,3-c,d)pyrene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
methylnaphthalene, 1+2-	0.050	mg/kg	2.20	0.904	0.713	0.899	1.86	0.629	0.631	1.36	1.25	3.02	1.60
methylnaphthalene, 1-	0.030	mg/kg	0.833	0.336	0.268	0.338	0.720	0.234	0.240	0.498	0.460	1.10	0.615
methylnaphthalene, 2-	0.030	mg/kg	1.37	0.568	0.445	0.561	1.14	0.395	0.391	0.857	0.790	1.92	0.990
naphthalene	0.010	mg/kg	0.446	0.202	0.161	0.220	0.369	0.137	0.139	0.286	0.262	0.661	0.334
phenanthrene	0.050	mg/kg	0.707	0.304	0.263	0.285	0.630	0.186	0.192	0.396	0.395	0.850	0.525
pyrene	0.050	mg/kg	0.058	<0.050	<0.050	<0.050	0.053	<0.050	<0.050	<0.050	<0.050	0.062	<0.050
quinoline	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	0.065	mg/kg	0.068	<0.065	<0.065	<0.065	0.067	<0.065	<0.065	<0.065	<0.065	0.068	0.066
IACR (CCME)	0.60		1.03	0.62	0.61	0.61	0.97	<0.60	0.60	0.62	0.63	1.02	0.93
IACR AB (coarse)	0.10		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	0.10		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
PAHs, total (BC Sched 3.4)	0.20	mg/kg	3.03	1.23	0.95	1.14	2.58	0.72	0.78	1.75	1.66	4.03	2.19
PAHs, total (EPA 16)	0.20	mg/kg	1.74	0.66	0.50	0.58	1.51	0.32	0.38	0.89	0.87	2.19	1.27
Polycyclic Aromatic Hydrocarbons Surrogates (Matrix: Soil/Solid)													
acridine-d9	0.1	%	105	120	103	111	98.1	106	110	101	115	105	97.8
chrysene-d12	0.1	%	109	122	123	123	116	125	130	121	127	123	115
naphthalene-d8	0.1	%	113	125	107	123	112	117	122	114	129	120	112
phenanthrene-d10	0.1	%	114	120	118	125	111	119	122	115	129	117	110

Results Summary CG2213498

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 23-Sep-2022 09:30
Issue Date 19-Oct-2022 17:45
Amendment 0

Client Sample ID			RG_LILC3_SE-1_2022-09-12_N	RG_LILC3_SE-2_2022-09-12_N	RG_LILC3_SE-3_2022-09-12_N	RG_LILC3_SE-4_2022-09-12_N	RG_LILC3_SE-5_2022-09-12_N	RG_LCUT_SE-1_2022-09-15_N	RG_LCUT_SE-2_2022-09-15_N	RG_LCUT_SE-3_2022-09-15_N	RG_MP1_SE-1_2022-09-12_N	RG_MP1_SE-2_2022-09-12_N	RG_MP1_SE-3_2022-09-12_N
Date Sampled			12-Sep-2022	12-Sep-2022	12-Sep-2022	12-Sep-2022	12-Sep-2022	15-Sep-2022	15-Sep-2022	15-Sep-2022	12-Sep-2022	12-Sep-2022	12-Sep-2022
Time Sampled			12:45	13:00	13:25	13:50	14:14	12:00	13:00	14:00	10:00	10:30	11:00
ALS Sample ID			CG2213498-001	CG2213498-002	CG2213498-003	CG2213498-004	CG2213498-005	CG2213498-006	CG2213498-007	CG2213498-008	CG2213498-009	CG2213498-010	CG2213498-011
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Physical Tests (Matrix: Soil/Solid)													
moisture	0.25	%		98.5	92.6	94.2	88.3	98.0	97.4	97.4	41.4	42.5	31.8
pH (1:2 soil:water)	0.10	pH units									8.03	7.99	8.02
Particle Size (Matrix: Soil/Solid)													
clay (<0.004mm)	1.0	%		7.2	7.0	5.3	2.6	14.4	12.3	8.4	5.6	4.7	4.4
grain size curve				See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached
silt (0.063mm - 0.0312mm)	1.0	%		20.7	21.6	16.4	8.1	28.2	27.8	23.0	10.0	14.4	10.1
silt (0.0312mm - 0.004mm)	1.0	%		24.2	25.4	20.0	9.4	36.5	39.1	29.6	14.4	16.9	13.3
sand (0.125mm - 0.063mm)	1.0	%		8.5	6.4	7.5	6.3	6.8	7.7	7.5	9.3	13.6	10.6
sand (0.25mm - 0.125mm)	1.0	%		11.7	9.0	10.7	10.5	5.8	6.8	9.5	18.2	21.1	16.1
sand (0.5mm - 0.25mm)	1.0	%		9.8	6.2	11.9	12.3	3.5	2.7	6.6	32.1	17.3	23.3
sand (1.0mm - 0.50mm)	1.0	%		6.4	5.6	13.2	11.1	1.4	<1.0	3.6	9.3	8.7	15.8
sand (2.0mm - 1.0mm)	1.0	%		5.5	5.7	6.7	7.7	1.3	1.3	2.6	<1.0	2.3	4.1
gravel (>2mm)	1.0	%		6.0	13.1	8.3	32.0	2.1	1.4	9.2	<1.0	1.0	2.3
Organic / Inorganic Carbon (Matrix: Soil/Solid)													
carbon, inorganic [IC]	0.050	%	4.48	3.60	3.91	2.77	3.11	3.11	2.38	1.48	1.64	1.92	1.69
carbon, total [TC]	0.050	%	13.9	16.6	17.3	11.6	9.77	20.3	19.0	21.3	10.9	10.8	8.59
carbon, total organic [TOC]	0.050	%	9.42	13.0	13.4	8.83	6.66	17.2	16.6	19.8	9.26	8.88	6.90
carbon, inorganic [IC], (as CaCO3 equivalent)	0.40	%	37.4	30.0	32.6	23.1	25.9	25.9	19.9	12.4	13.7	16.0	14.1

Results Summary CG2213498

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 23-Sep-2022 09:30
Issue Date 19-Oct-2022 17:45
Amendment 0

Client Sample ID			RG_LILC3_SE-1_2022-09-12_N	RG_LILC3_SE-2_2022-09-12_N	RG_LILC3_SE-3_2022-09-12_N	RG_LILC3_SE-4_2022-09-12_N	RG_LILC3_SE-5_2022-09-12_N	RG_LCUT_SE-1_2022-09-15_N	RG_LCUT_SE-2_2022-09-15_N	RG_LCUT_SE-3_2022-09-15_N	RG_MP1_SE-1_2022-09-12_N	RG_MP1_SE-2_2022-09-12_N	RG_MP1_SE-3_2022-09-12_N
Date Sampled			12-Sep-2022	12-Sep-2022	12-Sep-2022	12-Sep-2022	12-Sep-2022	15-Sep-2022	15-Sep-2022	15-Sep-2022	12-Sep-2022	12-Sep-2022	12-Sep-2022
Time Sampled			12:45	13:00	13:25	13:50	14:14	12:00	13:00	14:00	10:00	10:30	11:00
ALS Sample ID			CG2213498-001	CG2213498-002	CG2213498-003	CG2213498-004	CG2213498-005	CG2213498-006	CG2213498-007	CG2213498-008	CG2213498-009	CG2213498-010	CG2213498-011
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Metals (Matrix: Soil/Solid)													
aluminum	50	mg/kg	2430	2110	1810	2630	2720	1810	3160	4590	4820	4560	4690
antimony	0.10	mg/kg	0.73	0.61	0.49	0.50	0.52	0.45	0.57	0.81	0.74	0.62	0.73
arsenic	0.10	mg/kg	7.28	4.92	3.61	4.45	4.77	2.67	3.51	4.06	5.27	4.96	5.56
barium	0.50	mg/kg	169	219	195	160	146	176	218	262	184	171	164
beryllium	0.10	mg/kg	0.28	0.30	0.24	0.35	0.38	0.27	0.38	0.58	0.53	0.48	0.54
bismuth	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
boron	5.0	mg/kg	6.2	7.6	7.5	6.5	<5.0	15.6	11.6	10.1	<5.0	<5.0	<5.0
cadmium	0.020	mg/kg	13.5	17.6	15.9	10.7	11.3	11.0	9.06	6.50	1.38	1.50	1.41
calcium	50	mg/kg	124000	119000	127000	93400	111000	101000	75800	48200	45100	48300	48800
chromium	0.50	mg/kg	7.42	5.89	5.14	6.89	6.24	4.31	6.22	9.40	16.6	29.8	29.3
cobalt	0.10	mg/kg	24.1	30.4	28.1	23.6	26.6	8.64	11.0	16.7	6.23	6.03	6.97
copper	0.50	mg/kg	22.6	31.2	24.7	27.1	25.5	30.8	34.3	53.6	14.0	14.0	14.4
iron	50	mg/kg	10800	12400	10600	12600	13000	4250	6460	8400	13400	12500	14400
lead	0.50	mg/kg	13.9	8.70	5.35	7.48	7.24	5.08	7.30	10.3	7.88	7.51	7.76
lithium	2.0	mg/kg	4.0	3.9	3.7	5.0	5.4	3.4	4.7	5.7	6.9	7.0	7.3
magnesium	20	mg/kg	7940	6400	6660	8940	9650	4980	5670	6030	10400	11000	10100
manganese	1.0	mg/kg	1460	2090	1860	1230	1270	117	139	156	395	436	425
mercury	0.0050	mg/kg	0.0394	0.0431	0.0337	0.0377	0.0356	0.0391	0.0530	0.0773	0.0413	0.0391	0.0358
molybdenum	0.10	mg/kg	1.42	1.85	1.53	1.46	1.69	1.06	1.51	2.09	2.59	3.84	3.91
nickel	0.50	mg/kg	127	161	146	130	118	66.3	74.2	118	42.2	55.0	55.9
phosphorus	50	mg/kg	1150	1290	1250	1350	1150	1520	1260	1260	1190	1290	1320
potassium	100	mg/kg	970	1080	1050	860	780	1340	1410	1430	1220	1120	1130
selenium	0.20	mg/kg	5.45	12.5	8.71	5.92	5.17	7.61	9.79	13.5	2.34	1.90	1.84
silver	0.10	mg/kg	0.35	0.19	<0.10	0.13	0.13	0.12	0.16	0.22	0.16	0.16	0.15
sodium	50	mg/kg	243	247	239	185	133	365	238	155	66	74	68
strontium	0.50	mg/kg	110	98.6	109	93.9	102	87.5	81.0	70.0	69.5	69.2	61.3
sulfur	1000	mg/kg	2200	2600	2600	1700	1200	3300	2700	1800	<1000	<1000	<1000
thallium	0.050	mg/kg	0.205	0.167	0.138	0.189	0.198	0.146	0.212	0.346	0.158	0.156	0.172
tin	2.0	mg/kg	<2.0	2.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	1.0	mg/kg	12.2	11.8	10.1	<20.0	9.8	<20.0	16.8	28.9	20.5	22.6	19.9
tungsten	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	0.050	mg/kg	1.25	1.62	1.41	1.27	1.20	1.27	1.84	2.82	0.951	0.955	1.02
vanadium	0.20	mg/kg	13.6	14.8	12.6	14.7	14.7	9.41	15.0	21.7	25.3	23.7	25.3
zinc	2.0	mg/kg	465	530	543	405	382	368	338	298	130	132	135
zirconium	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	1.7	<1.0	1.1	1.1

Qualifier Legend

DLM Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
FR5 As per applicable reference method(s), soil:water ratio for Fixed Ratio Leach was modified to 1:5 due to high soil organic content

Results Summary CG2213498

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 23-Sep-2022 09:30
Issue Date 19-Oct-2022 17:45
Amendment 0

Client Sample ID			RG_FOUNGD_SE-1_2022-09-15_N	RG_FOUNGD_SE-2_2022-09-15_N	RG_FOUNGD_SE-3_2022-09-15_N	RG_FOUCL_SE-1_2022-09-16_N	RG_FOUCL_SE-2_2022-09-16_N	RG_FOUCL_SE-3_2022-09-16_N	RG_FOUCL_SE-4_2022-09-16_N	RG_FOUCL_SE-5_2022-09-16_N	RG_GRASSY_SE-1_2022-09-16_N	RG_GRASSY_SE-2_2022-09-16_N	RG_GRASSY_SE-3_2022-09-16_N
Date Sampled			15-Sep-2022	15-Sep-2022	15-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022
Time Sampled			09:00	09:30	09:45	09:00	09:30	10:00	10:30	11:00	09:00	09:30	10:00
ALS Sample ID			CG2213498-012	CG2213498-013	CG2213498-014	CG2213498-015	CG2213498-016	CG2213498-017	CG2213498-018	CG2213498-019	CG2213498-020	CG2213498-021	CG2213498-022
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Physical Tests (Matrix: Soil/Solid)													
moisture	0.25	%	36.1	36.7	37.4	29.7	39.9	36.1	41.1	31.9	38.6	40.9	39.4
pH (1:2 soil:water)	0.10	pH units	8.12	8.05	7.99	8.00	7.98	8.03	8.04	8.12	8.08	7.99	8.11
Particle Size (Matrix: Soil/Solid)													
clay (<0.004mm)	1.0	%	2.7	3.1	3.9	3.9	4.2	3.1	4.4	3.8	3.7	4.1	3.3
grain size curve			See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached
silt (0.063mm - 0.0312mm)	1.0	%	12.9	9.2	14.0	15.4	15.4	7.9	19.6	14.8	12.8	19.2	10.9
silt (0.0312mm - 0.004mm)	1.0	%	9.0	9.5	13.3	17.3	15.6	8.7	22.3	14.0	11.4	20.6	11.8
sand (0.125mm - 0.063mm)	1.0	%	29.0	14.2	23.1	15.6	20.9	10.7	15.4	23.9	23.0	17.2	10.8
sand (0.25mm - 0.125mm)	1.0	%	36.8	27.1	33.2	17.8	22.5	28.6	18.1	30.6	35.8	24.1	24.1
sand (0.5mm - 0.25mm)	1.0	%	8.2	30.5	11.3	17.7	16.8	31.3	10.9	11.1	11.6	9.1	30.7
sand (1.0mm - 0.50mm)	1.0	%	1.0	5.0	<1.0	7.2	4.2	7.1	3.8	1.3	1.3	2.7	7.6
sand (2.0mm - 1.0mm)	1.0	%	<1.0	<1.0	<1.0	3.1	<1.0	1.9	2.8	<1.0	<1.0	1.2	<1.0
gravel (>2mm)	1.0	%	<1.0	<1.0	<1.0	2.0	<1.0	<1.0	2.7	<1.0	<1.0	1.8	<1.0
Organic / Inorganic Carbon (Matrix: Soil/Solid)													
carbon, inorganic [IC]	0.050	%	2.02	1.94	2.16	1.94	1.89	1.73	2.26	2.01	1.71	1.21	1.82
carbon, total [TC]	0.050	%	4.99	5.28	5.66	9.90	8.13	6.51	9.00	7.58	7.36	11.6	6.08
carbon, total organic [TOC]	0.050	%	2.97	3.34	3.50	7.96	6.24	4.78	6.74	5.57	5.65	10.4	4.26
carbon, inorganic [IC], (as CaCO3 equivalent)	0.40	%	16.8	16.2	18.0	16.2	15.8	14.4	18.9	16.7	14.2	10.1	15.2

Results Summary CG2213498

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 23-Sep-2022 09:30
Issue Date 19-Oct-2022 17:45
Amendment 0

Client Sample ID			RG_FOUNGD_SE-1_2022-09-15_N	RG_FOUNGD_SE-2_2022-09-15_N	RG_FOUNGD_SE-3_2022-09-15_N	RG_FOUCL_SE-1_2022-09-16_N	RG_FOUCL_SE-2_2022-09-16_N	RG_FOUCL_SE-3_2022-09-16_N	RG_FOUCL_SE-4_2022-09-16_N	RG_FOUCL_SE-5_2022-09-16_N	RG_GRASSY_SE-1_2022-09-16_N	RG_GRASSY_SE-2_2022-09-16_N	RG_GRASSY_SE-3_2022-09-16_N
Date Sampled			15-Sep-2022	15-Sep-2022	15-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022
Time Sampled			09:00	09:30	09:45	09:00	09:30	10:00	10:30	11:00	09:00	09:30	10:00
ALS Sample ID			CG2213498-012	CG2213498-013	CG2213498-014	CG2213498-015	CG2213498-016	CG2213498-017	CG2213498-018	CG2213498-019	CG2213498-020	CG2213498-021	CG2213498-022
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Metals (Matrix: Soil/Solid)													
aluminum	50	mg/kg	4540	4260	4370	4760	4980	4530	5000	4560	4360	4640	4770
antimony	0.10	mg/kg	0.55	0.60	0.53	0.66	0.62	0.60	0.60	0.56	0.59	0.65	0.65
arsenic	0.10	mg/kg	4.65	4.94	4.41	5.06	4.75	5.30	4.54	4.62	4.77	4.86	5.40
barium	0.50	mg/kg	110	113	110	189	170	155	135	123	102	99.0	128
beryllium	0.10	mg/kg	0.44	0.45	0.43	0.52	0.51	0.50	0.47	0.44	0.45	0.48	0.53
bismuth	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
boron	5.0	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.2	<5.0	<5.0	<5.0	<5.0
cadmium	0.020	mg/kg	1.03	1.02	0.917	1.05	1.04	1.06	1.03	0.914	1.05	0.995	1.20
calcium	50	mg/kg	52400	55000	56700	53100	55000	48800	63300	55300	58000	44400	56300
chromium	0.50	mg/kg	11.4	9.90	9.34	14.8	12.5	10.1	13.4	10.6	9.96	10.9	11.7
cobalt	0.10	mg/kg	5.02	5.20	4.79	5.33	5.42	5.66	5.27	4.93	5.08	5.03	5.81
copper	0.50	mg/kg	9.99	11.0	10.4	13.5	13.2	13.0	11.8	11.1	11.2	12.4	12.8
iron	50	mg/kg	11900	13500	11700	13000	12600	14200	12000	12000	12300	13000	14500
lead	0.50	mg/kg	7.03	7.42	6.90	7.93	7.85	8.24	7.35	7.19	7.33	8.08	8.08
lithium	2.0	mg/kg	8.2	7.2	7.7	7.7	7.9	6.7	8.6	7.6	8.1	9.0	8.5
magnesium	20	mg/kg	17600	13600	17200	12900	14500	11200	16200	15800	14900	13800	10200
manganese	1.0	mg/kg	362	366	404	452	525	462	388	385	404	349	456
mercury	0.0050	mg/kg	0.0314	0.0299	0.0358	0.0426	0.0409	0.0446	0.0403	0.0337	0.0342	0.0376	0.0294
molybdenum	0.10	mg/kg	1.49	1.39	1.20	1.97	1.58	1.43	1.62	1.38	1.33	1.55	1.56
nickel	0.50	mg/kg	33.1	27.2	24.7	25.4	24.0	29.4	28.6	26.7	31.3	42.8	37.5
phosphorus	50	mg/kg	1390	1310	1310	1280	1340	1340	1280	1250	1290	1330	1300
potassium	100	mg/kg	1020	980	920	1090	1130	1040	1160	1020	1000	1010	1130
selenium	0.20	mg/kg	1.08	1.31	1.41	1.61	2.13	1.04	1.83	1.10	1.73	3.54	1.73
silver	0.10	mg/kg	0.14	0.14	0.14	0.17	0.19	0.15	0.18	0.16	0.15	0.17	0.14
sodium	50	mg/kg	82	80	86	71	87	82	80	73	90	82	80
strontium	0.50	mg/kg	50.8	55.1	51.8	76.8	66.6	57.8	59.4	54.0	56.4	52.4	67.1
sulfur	1000	mg/kg	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
thallium	0.050	mg/kg	0.156	0.146	0.140	0.166	0.176	0.162	0.153	0.157	0.151	0.160	0.166
tin	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	1.0	mg/kg	17.6	15.9	19.1	21.5	20.7	14.9	18.7	20.1	19.6	17.0	13.0
tungsten	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	0.050	mg/kg	0.885	0.951	0.838	0.995	0.990	0.931	0.878	0.841	0.920	1.12	0.964
vanadium	0.20	mg/kg	21.8	22.0	20.2	23.8	23.2	22.6	22.7	21.3	21.3	22.2	24.5
zinc	2.0	mg/kg	103	106	96.4	98.6	98.0	110	104	94.6	102	105	118
zirconium	1.0	mg/kg	1.2	<1.0	1.2	1.3	1.3	<1.0	<1.0	<1.0	1.0	1.3	<1.0

Qualifier Legend

DLM Detection Limit Adjusted due to sample
 FR5 As per applicable reference method(s),

Results Summary CG2213498

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 23-Sep-2022 09:30
Issue Date 19-Oct-2022 17:45
Amendment 0

Client Sample ID			RG_GRASSY_SE-4_2022-09-16_N	RG_GRASSY_SE-5_2022-09-16_N	RG_ERCKUC_SE-1_2022-09-14_N	RG_ERCKUC_SE-2_2022-09-14_N	RG_ERCKUC_SE-3_2022-09-14_N	RG_BOCK_SE-1_2022-09-15_N	RG_BOCK_SE-2_2022-09-15_N	RG_BOCK_SE-3_2022-09-15_N	RG_UFR1_SE-1_2022-09-14_N	RG_UFR1_SE-2_2022-09-14_N	RG_UFR1_SE-3_2022-09-14_N
Date Sampled			16-Sep-2022	16-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022	15-Sep-2022	15-Sep-2022	15-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022
Time Sampled			10:30	11:00	13:00	14:00	15:00	13:00	14:00	15:00	09:00	09:10	09:20
ALS Sample ID			CG2213498-023	CG2213498-024	CG2213498-025	CG2213498-026	CG2213498-027	CG2213498-028	CG2213498-029	CG2213498-030	CG2213498-031	CG2213498-032	CG2213498-033
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Physical Tests (Matrix: Soil/Solid)													
moisture	0.25	%	40.2	27.5	75.9	75.1	72.6	42.9	50.5	44.2	30.5	33.2	41.8
pH (1:2 soil:water)	0.10	pH units	7.96	8.23	7.91	7.97	7.91	8.09	8.05	8.23	8.24	8.02	8.23
Particle Size (Matrix: Soil/Solid)													
clay (<0.004mm)	1.0	%	4.4	2.2	6.8	8.4	8.5	4.4	4.4	4.1	3.5	4.0	4.6
grain size curve			See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached
silt (0.063mm - 0.0312mm)	1.0	%	24.5	7.5	19.7	24.9	24.6	13.4	13.1	11.9	5.9	14.7	18.3
silt (0.0312mm - 0.004mm)	1.0	%	24.7	7.7	27.9	37.9	37.5	16.9	16.4	14.7	7.9	16.2	21.3
sand (0.125mm - 0.063mm)	1.0	%	19.8	8.0	3.8	4.6	5.7	16.5	13.8	16.9	6.1	10.9	13.8
sand (0.25mm - 0.125mm)	1.0	%	19.1	17.3	9.0	6.0	7.8	20.5	20.7	22.3	10.2	13.8	15.6
sand (0.5mm - 0.25mm)	1.0	%	6.1	29.6	14.1	6.5	8.1	16.1	19.7	16.7	18.4	12.8	11.5
sand (1.0mm - 0.50mm)	1.0	%	<1.0	17.5	11.7	6.3	4.9	5.9	9.4	6.5	33.9	12.0	7.7
sand (2.0mm - 1.0mm)	1.0	%	<1.0	5.3	6.4	4.6	2.7	2.1	2.2	2.8	12.5	9.0	5.4
gravel (>2mm)	1.0	%	<1.0	4.9	<1.0	<1.0	<1.0	4.2	<1.0	4.1	1.6	6.6	1.8
Organic / Inorganic Carbon (Matrix: Soil/Solid)													
carbon, inorganic [IC]	0.050	%	1.71	1.35	3.98	1.92	1.75	7.00	6.99	6.57	0.807	1.07	1.22
carbon, total [TC]	0.050	%	9.17	4.47	24.6	23.8	22.3	13.5	16.0	13.8	4.73	6.50	7.50
carbon, total organic [TOC]	0.050	%	7.46	3.12	20.6	21.9	20.6	6.50	9.01	7.23	3.92	5.43	6.28
carbon, inorganic [IC], (as CaCO3 equivalent)	0.40	%	14.3	11.3	33.1	16.0	14.6	58.4	58.3	54.8	6.72	8.89	10.2

Results Summary CG2213498

Project Regional Effects Program
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Date Received 23-Sep-2022 09:30
Issue Date 19-Oct-2022 17:45
Amendment 0

Client Sample ID			RG_GRASSY_SE-4_2022-09-16_N	RG_GRASSY_SE-5_2022-09-16_N	RG_ERCKUC_SE-1_2022-09-14_N	RG_ERCKUC_SE-2_2022-09-14_N	RG_ERCKUC_SE-3_2022-09-14_N	RG_BOCK_SE-1_2022-09-15_N	RG_BOCK_SE-2_2022-09-15_N	RG_BOCK_SE-3_2022-09-15_N	RG_UFR1_SE-1_2022-09-14_N	RG_UFR1_SE-2_2022-09-14_N	RG_UFR1_SE-3_2022-09-14_N
Date Sampled			16-Sep-2022	16-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022	15-Sep-2022	15-Sep-2022	15-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022
Time Sampled			10:30	11:00	13:00	14:00	15:00	13:00	14:00	15:00	09:00	09:10	09:20
ALS Sample ID			CG2213498-023	CG2213498-024	CG2213498-025	CG2213498-026	CG2213498-027	CG2213498-028	CG2213498-029	CG2213498-030	CG2213498-031	CG2213498-032	CG2213498-033
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Metals (Matrix: Soil/Solid)													
aluminum	50	mg/kg	4410	4680	1760	2580	2450	1210	1940	1460	5420	5410	5260
antimony	0.10	mg/kg	0.57	0.80	0.78	0.71	0.71	0.45	0.50	0.37	0.77	0.78	0.83
arsenic	0.10	mg/kg	4.61	5.79	2.56	2.99	3.15	3.26	2.07	2.59	5.85	5.52	6.93
barium	0.50	mg/kg	106	128	152	136	132	1870	2550	2680	184	208	189
beryllium	0.10	mg/kg	0.44	0.53	0.27	0.32	0.31	<0.14	0.15	<0.15	0.64	0.58	0.55
bismuth	0.20	mg/kg	<0.20	<0.20	<0.29	<0.20	<0.20	<0.28	<0.30	<0.30	<0.20	<0.20	<0.20
boron	5.0	mg/kg	<5.0	<5.0	15.5	10.2	12.1	<7.0	8.0	<7.4	<5.0	6.6	5.3
cadmium	0.020	mg/kg	1.12	1.07	2.37	1.55	2.54	9.11	12.0	9.49	0.968	1.14	1.51
calcium	50	mg/kg	56300	44200	124000	59900	68800	231000	275000	270000	29100	35400	39400
chromium	0.50	mg/kg	10.4	47.5	8.28	8.06	8.45	5.89	4.38	7.11	14.2	14.3	15.0
cobalt	0.10	mg/kg	5.18	6.20	16.3	15.4	9.58	5.84	6.94	5.35	5.90	6.03	6.28
copper	0.50	mg/kg	12.2	13.0	14.4	13.8	14.1	6.85	9.11	6.51	15.2	15.3	16.0
iron	50	mg/kg	11600	17200	4230	6750	6160	6690	3540	4910	16200	15000	14200
lead	0.50	mg/kg	7.64	7.88	6.41	7.50	9.43	2.30	2.58	2.31	8.87	9.22	9.24
lithium	2.0	mg/kg	8.1	7.4	<2.9	3.0	2.7	<2.8	3.8	3.2	8.4	8.3	8.0
magnesium	20	mg/kg	15700	9610	5600	6100	5780	5000	5620	5420	5720	8340	8340
manganese	1.0	mg/kg	396	500	355	302	193	228	374	183	502	507	487
mercury	0.0050	mg/kg	0.0399	0.0288	0.0685	0.0636	0.0755	0.0197	0.0232	0.0168	0.0423	0.0501	0.0719
molybdenum	0.10	mg/kg	1.44	6.07	3.06	1.84	2.17	1.19	1.24	1.20	2.07	2.08	1.96
nickel	0.50	mg/kg	37.2	62.6	77.7	80.0	62.9	63.6	103	55.6	25.0	25.7	27.8
phosphorus	50	mg/kg	1260	1310	961	867	871	371	448	375	1340	1410	1460
potassium	100	mg/kg	1010	1140	680	620	670	570	740	600	1250	1240	1110
selenium	0.20	mg/kg	2.73	1.66	32.7	45.4	25.5	3.91	5.21	2.91	0.75	1.29	1.12
silver	0.10	mg/kg	0.18	0.13	0.17	0.20	0.20	<0.14	<0.15	<0.15	0.16	0.21	0.25
sodium	50	mg/kg	90	70	<73	53	58	109	152	123	59	73	66
strontium	0.50	mg/kg	56.2	62.6	82.9	55.4	59.2	1150	430	786	65.4	64.0	61.6
sulfur	1000	mg/kg	<1000	<1000	3100	2500	2700	7100	7100	7400	<1000	<1000	<1000
thallium	0.050	mg/kg	0.154	0.170	0.184	0.234	0.206	0.157	0.201	0.132	0.206	0.203	0.284
tin	2.0	mg/kg	<2.0	<2.0	<2.9	<2.0	<2.0	<2.8	<3.0	<3.0	<2.0	<2.0	<2.0
titanium	1.0	mg/kg	16.2	13.5	18.8	10.9	11.9	12.1	26.6	21.7	16.6	19.0	24.5
tungsten	0.50	mg/kg	<0.50	<0.50	<0.73	<0.50	<0.50	<0.70	<0.74	<0.74	<0.50	<0.50	<0.50
uranium	0.050	mg/kg	1.06	0.983	3.97	3.84	3.77	1.69	2.28	1.66	0.901	0.996	0.898
vanadium	0.20	mg/kg	20.7	27.6	14.7	16.2	16.2	7.39	9.65	7.90	27.8	25.8	29.0
zinc	2.0	mg/kg	104	125	86.2	75.6	107	488	703	517	109	108	114
zirconium	1.0	mg/kg	1.1	<1.0	1.8	1.7	1.6	<1.4	<1.5	<1.5	1.0	1.2	1.4

Qualifier Legend

DLM Detection Limit Adjusted due to sample
 FR5 As per applicable reference method(s),

Results Summary CG2213498

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 23-Sep-2022 09:30
Issue Date 19-Oct-2022 17:45
Amendment 0

Client Sample ID			RG_UFR1_SE-4_2022-09-14_N	RG_UFR1_SE-5_2022-09-14_N	RG_FRDSCC1_SE-1_2022-09-14_N	RG_FRDSCC1_SE-2_2022-09-14_N	RG_FRDSCC1_SE-3_2022-09-14_N	RG_FRDSCC1_SE-4_2022-09-14_N	RG_FRDSCC1_SE-5_2022-09-14_N	RG_MIDGA_SE-1_2022-09-18_N	RG_MIDGA_SE-2_2022-09-18_N	RG_MIDGA_SE-3_2022-09-18_N	RG_MIDBO_SE-1_2022-09-13_N
Date Sampled			14-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	13-Sep-2022
Time Sampled			09:30	09:40	09:50	10:00	10:10	10:20	10:30	10:00	09:00	08:00	13:45
ALS Sample ID			CG2213498-034	CG2213498-035	CG2213498-036	CG2213498-037	CG2213498-038	CG2213498-039	CG2213498-040	CG2213498-041	CG2213498-042	CG2213498-043	CG2213498-044
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Physical Tests (Matrix: Soil/Solid)													
moisture	0.25	%	33.5	39.7	31.3	26.7	25.2	30.9	25.8	35.0	50.8	66.5	73.8
pH (1:2 soil:water)	0.10	pH units	8.13	7.95	8.26	8.38	8.39	8.24	8.35	7.93	7.83	7.48	7.24
Particle Size (Matrix: Soil/Solid)													
clay (<0.004mm)	1.0	%	3.7	3.3	2.0	2.5	1.9	2.0	2.2	3.6	4.8	7.0	5.1
grain size curve			See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached
silt (0.063mm - 0.0312mm)	1.0	%	9.1	7.8	5.8	3.9	4.2	9.3	4.5	20.4	21.3	29.2	22.7
silt (0.0312mm - 0.004mm)	1.0	%	9.4	9.8	7.2	5.2	5.1	9.2	5.4	19.8	25.1	35.7	25.2
sand (0.125mm - 0.063mm)	1.0	%	11.1	8.0	4.7	4.4	4.5	10.6	4.3	27.9	15.7	10.7	6.0
sand (0.25mm - 0.125mm)	1.0	%	24.9	14.6	9.2	10.5	20.7	30.4	11.8	17.4	14.3	5.1	5.2
sand (0.5mm - 0.25mm)	1.0	%	28.0	25.4	31.2	32.7	55.2	32.5	39.4	4.8	7.2	2.2	8.1
sand (1.0mm - 0.50mm)	1.0	%	12.3	19.9	35.0	34.7	7.8	4.3	25.2	<1.0	2.1	1.3	9.8
sand (2.0mm - 1.0mm)	1.0	%	1.3	5.5	4.5	4.4	<1.0	<1.0	6.5	<1.0	2.0	1.2	7.2
gravel (>2mm)	1.0	%	<1.0	5.7	<1.0	1.7	<1.0	1.3	<1.0	5.4	7.5	7.6	10.7
Organic / Inorganic Carbon (Matrix: Soil/Solid)													
carbon, inorganic [IC]	0.050	%	0.618	0.921	1.35	1.43	1.74	1.79	1.82	2.54	3.10	4.43	2.31
carbon, total [TC]	0.050	%	4.73	7.19	4.30	4.07	3.68	5.68	4.30	6.77	8.07	11.5	9.15
carbon, total organic [TOC]	0.050	%	4.11	6.27	2.95	2.64	1.94	3.89	2.48	4.23	4.97	7.07	6.84
carbon, inorganic [IC], (as CaCO3 equivalent)	0.40	%	5.15	7.68	11.2	12.0	14.5	14.9	15.2	21.1	25.9	37.0	19.2

Results Summary CG2213498

Project Regional Effects Program
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Date Received 23-Sep-2022 09:30
Issue Date 19-Oct-2022 17:45
Amendment 0

Client Sample ID			RG_UFR1_SE-4_2022-09-14_N	RG_UFR1_SE-5_2022-09-14_N	RG_FRDSCC1_SE-1_2022-09-14_N	RG_FRDSCC1_SE-2_2022-09-14_N	RG_FRDSCC1_SE-3_2022-09-14_N	RG_FRDSCC1_SE-4_2022-09-14_N	RG_FRDSCC1_SE-5_2022-09-14_N	RG_MIDGA_SE-1_2022-09-18_N	RG_MIDGA_SE-2_2022-09-18_N	RG_MIDGA_SE-3_2022-09-18_N	RG_MIDBO_SE-1_2022-09-13_N
Date Sampled			14-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	13-Sep-2022
Time Sampled			09:30	09:40	09:50	10:00	10:10	10:20	10:30	10:00	09:00	08:00	13:45
ALS Sample ID			CG2213498-034	CG2213498-035	CG2213498-036	CG2213498-037	CG2213498-038	CG2213498-039	CG2213498-040	CG2213498-041	CG2213498-042	CG2213498-043	CG2213498-044
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Metals (Matrix: Soil/Solid)													
aluminum	50	mg/kg	5500	5830	5040	4960	4950	4610	4470	2770	3250	2580	2550
antimony	0.10	mg/kg	0.77	0.82	0.71	0.76	0.78	0.67	0.84	0.50	0.42	0.32	0.52
arsenic	0.10	mg/kg	5.96	5.68	5.65	6.14	6.02	5.22	5.89	3.98	3.97	3.32	4.28
barium	0.50	mg/kg	187	454	160	182	142	141	132	1280	1310	1470	395
beryllium	0.10	mg/kg	0.63	0.72	0.55	0.58	0.54	0.52	0.51	0.29	0.35	0.26	0.29
bismuth	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
boron	5.0	mg/kg	<5.0	5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.9	<5.0
cadmium	0.020	mg/kg	1.09	1.03	1.40	1.20	1.20	1.09	1.23	1.82	1.84	2.24	1.21
calcium	50	mg/kg	20700	29500	36400	42900	42900	46500	46000	86900	104000	141000	73100
chromium	0.50	mg/kg	13.2	15.2	10.1	10.1	9.81	9.04	9.44	5.64	17.1	11.8	32.0
cobalt	0.10	mg/kg	6.57	5.95	6.08	6.02	6.00	5.62	5.90	4.10	4.37	3.58	3.38
copper	0.50	mg/kg	15.4	15.6	12.9	12.9	12.3	12.3	12.5	9.32	10.4	8.87	9.64
iron	50	mg/kg	16500	17800	16500	17100	17000	14000	16200	9040	10900	9400	13000
lead	0.50	mg/kg	9.70	8.83	8.13	8.30	7.99	8.07	8.09	6.60	9.59	5.14	5.68
lithium	2.0	mg/kg	8.0	8.1	7.8	7.8	6.9	7.6	7.0	4.0	5.2	5.0	3.8
magnesium	20	mg/kg	5480	6160	8040	7380	8480	10600	9610	5280	6210	6530	5330
manganese	1.0	mg/kg	588	437	513	467	464	458	473	150	186	197	189
mercury	0.0050	mg/kg	0.0395	0.0381	0.0326	0.0275	0.0289	0.0313	0.0291	0.0278	0.0353	0.0264	0.0273
molybdenum	0.10	mg/kg	1.92	2.06	1.43	1.50	1.44	1.37	1.42	1.14	2.26	1.71	4.28
nickel	0.50	mg/kg	25.8	26.0	42.7	34.2	37.7	31.2	36.9	33.1	40.2	41.4	38.5
phosphorus	50	mg/kg	1490	1700	1370	1390	1430	1330	1460	1050	1140	897	1050
potassium	100	mg/kg	1150	1300	1170	1160	1210	1050	1030	530	660	560	520
selenium	0.20	mg/kg	0.72	0.78	0.90	0.84	0.72	1.01	0.98	5.36	6.27	9.82	6.82
silver	0.10	mg/kg	0.17	0.17	0.13	0.13	0.12	0.14	0.12	0.13	0.15	0.12	0.14
sodium	50	mg/kg	54	61	63	67	66	69	84	80	107	133	87
strontium	0.50	mg/kg	51.8	198	64.1	68.8	66.3	62.9	56.6	149	164	198	94.0
sulfur	1000	mg/kg	<1000	<1000	<1000	<1000	<1000	<1000	<1000	2400	2300	3200	2000
thallium	0.050	mg/kg	0.181	0.181	0.187	0.184	0.172	0.171	0.177	0.117	0.133	0.116	0.107
tin	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	1.0	mg/kg	18.8	18.9	15.9	13.8	12.6	14.7	13.6	18.9	18.4	16.0	15.1
tungsten	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	0.050	mg/kg	0.889	1.01	0.991	0.946	0.907	0.884	0.936	1.23	1.28	1.11	0.916
vanadium	0.20	mg/kg	27.7	30.0	27.4	27.7	27.6	23.5	25.7	15.6	16.2	13.0	15.3
zinc	2.0	mg/kg	114	108	138	127	133	110	129	119	127	140	87.6
zirconium	1.0	mg/kg	1.1	1.2	<1.0	1.0	<1.0	1.0	<1.0	<1.0	1.1	<1.0	1.0

Qualifier Legend

DLM Detection Limit Adjusted due to sample
 FR5 As per applicable reference method(s),

Results Summary CG2213498

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 23-Sep-2022 09:30
Issue Date 19-Oct-2022 17:45
Amendment 0

Client Sample ID			RG_MIDBO_SE-2_2022-09-13_N	RG_MIDBO_SE-3_2022-09-13_N	RG_GATE_SE-1_2022-09-15_N	RG_GATE_SE-2_2022-09-15_N	RG_GATE_SE-3_2022-09-15_N	RG_ERCKMD_SE-1_2022-09-20_N	RG_ERCKMD_SE-2_2022-09-20_N	RG_ERCKMD_SE-3_2022-09-20_N	RG_ERCKMD_SE-4_2022-09-20_N	RG_ERCKMD_SE-5_2022-09-20_N	RG_GATEDP_SE-1_2022-09-15_N
Date Sampled			13-Sep-2022	13-Sep-2022	15-Sep-2022	15-Sep-2022	15-Sep-2022	20-Sep-2022	20-Sep-2022	20-Sep-2022	20-Sep-2022	20-Sep-2022	15-Sep-2022
Time Sampled			14:45	15:15	10:00	11:00	12:00	11:00	11:10	11:20	11:30	11:40	12:45
ALS Sample ID			CG2213498-045	CG2213498-046	CG2213498-047	CG2213498-048	CG2213498-049	CG2213498-050	CG2213498-051	CG2213498-052	CG2213498-053	CG2213498-054	CG2213498-055
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Physical Tests (Matrix: Soil/Solid)													
moisture	0.25	%	87.6	59.5	52.5	47.9	61.6	81.5	75.3	63.6	83.3	87.3	49.4
pH (1:2 soil:water)	0.10	pH units	7.29	7.65	8.20	7.92	8.04	7.84	7.81	7.82	7.82	7.79	8.31
Particle Size (Matrix: Soil/Solid)													
clay (<0.004mm)	1.0	%	7.1	3.1	19.9	17.6	14.6	8.2	7.5	7.8	9.3	11.5	5.9
grain size curve			See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached
silt (0.063mm - 0.0312mm)	1.0	%	36.7	10.3	20.4	20.6	11.2	35.9	9.7	28.9	11.5	31.4	15.4
silt (0.0312mm - 0.004mm)	1.0	%	44.5	11.7	46.1	41.2	35.1	37.0	23.5	34.7	27.4	43.7	22.7
sand (0.125mm - 0.063mm)	1.0	%	6.8	9.3	10.3	13.1	15.2	8.8	10.1	9.2	5.2	5.4	16.4
sand (0.25mm - 0.125mm)	1.0	%	2.0	30.2	2.3	5.2	9.6	4.4	13.3	7.5	10.9	3.2	14.2
sand (0.5mm - 0.25mm)	1.0	%	1.5	28.5	<1.0	1.7	6.7	2.2	15.5	6.1	22.7	3.1	8.9
sand (1.0mm - 0.50mm)	1.0	%	1.0	2.9	<1.0	<1.0	5.0	2.3	12.9	3.4	10.9	1.4	4.1
sand (2.0mm - 1.0mm)	1.0	%	<1.0	1.0	<1.0	<1.0	2.4	<1.0	7.5	1.2	2.0	<1.0	2.5
gravel (>2mm)	1.0	%	<1.0	3.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	9.9
Organic / Inorganic Carbon (Matrix: Soil/Solid)													
carbon, inorganic [IC]	0.050	%	3.25	1.49	4.13	3.97	4.55	3.07	4.42	2.53	2.00	3.41	6.21
carbon, total [TC]	0.050	%	13.5	4.83	23.7	21.6	19.0	15.0	11.6	15.1	9.26	15.8	10.8
carbon, total organic [TOC]	0.050	%	10.2	3.34	19.6	17.6	14.4	11.9	7.18	12.6	7.26	12.4	4.59
carbon, inorganic [IC], (as CaCO3 equivalent)	0.40	%	27.1	12.4	34.4	33.1	37.9	25.6	36.8	21.1	16.7	28.4	51.8

Results Summary CG2213498

Project Regional Effects Program
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Amendment 0

Client Sample ID			RG_MIDBO_SE-2_2022-09-13_N	RG_MIDBO_SE-3_2022-09-13_N	RG_GATE_SE-1_2022-09-15_N	RG_GATE_SE-2_2022-09-15_N	RG_GATE_SE-3_2022-09-15_N	RG_ERCKMD_SE-1_2022-09-20_N	RG_ERCKMD_SE-2_2022-09-20_N	RG_ERCKMD_SE-3_2022-09-20_N	RG_ERCKMD_SE-4_2022-09-20_N	RG_ERCKMD_SE-5_2022-09-20_N	RG_GATEDP_SE-1_2022-09-15_N
Date Sampled			13-Sep-2022	13-Sep-2022	15-Sep-2022	15-Sep-2022	15-Sep-2022	20-Sep-2022	20-Sep-2022	20-Sep-2022	20-Sep-2022	20-Sep-2022	15-Sep-2022
Time Sampled			14:45	15:15	10:00	11:00	12:00	11:00	11:10	11:20	11:30	11:40	12:45
ALS Sample ID			CG2213498-045	CG2213498-046	CG2213498-047	CG2213498-048	CG2213498-049	CG2213498-050	CG2213498-051	CG2213498-052	CG2213498-053	CG2213498-054	CG2213498-055
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment	Sub-Matrix: Sediment
Metals (Matrix: Soil/Solid)													
aluminum	50	mg/kg	3180	4380	4180	3810	3670	3100	2840	3520	7460	2710	1830
antimony	0.10	mg/kg	0.38	0.78	0.88	0.80	0.67	0.90	0.71	0.99	2.08	1.28	0.58
arsenic	0.10	mg/kg	3.18	5.87	4.45	4.36	4.08	16.4	7.42	7.13	28.4	28.0	7.27
barium	0.50	mg/kg	588	286	899	749	617	371	220	206	498	317	129
beryllium	0.10	mg/kg	0.29	0.44	0.46	0.43	0.40	0.56	0.41	0.54	1.22	0.62	0.28
bismuth	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.29	<0.20	<0.20
boron	5.0	mg/kg	9.6	<5.0	5.8	5.7	5.6	7.2	5.5	8.4	12.6	9.3	<5.0
cadmium	0.020	mg/kg	1.42	1.80	5.24	5.53	6.45	7.60	4.60	6.29	11.3	11.8	2.91
calcium	50	mg/kg	101000	42700	127000	123000	153000	99100	135000	89800	124000	107000	30500
chromium	0.50	mg/kg	11.9	13.5	8.17	7.73	7.61	7.56	18.1	10.1	17.3	7.90	4.37
cobalt	0.10	mg/kg	3.43	4.68	8.70	7.89	5.96	249	96.8	266	363	367	95.2
copper	0.50	mg/kg	9.22	11.2	19.4	17.4	15.4	16.9	12.0	17.8	31.8	18.0	7.91
iron	50	mg/kg	8630	14500	8730	8980	9640	32500	15500	15300	58100	49300	14500
lead	0.50	mg/kg	5.80	7.36	8.68	7.35	6.62	10.2	7.18	8.42	21.9	12.9	5.21
lithium	2.0	mg/kg	4.7	5.8	4.8	5.1	5.7	4.5	3.7	4.5	10.4	3.9	2.3
magnesium	20	mg/kg	5440	4860	5740	5940	6580	7050	5750	7340	10400	7910	2660
manganese	1.0	mg/kg	148	250	201	204	188	6850	3030	6730	11000	11900	2840
mercury	0.0050	mg/kg	0.0297	0.0309	0.0579	0.0503	0.0422	0.0605	0.0394	0.0715	0.0976	0.0604	0.0235
molybdenum	0.10	mg/kg	1.69	2.07	1.96	1.78	1.60	1.83	2.99	3.06	4.26	2.71	1.07
nickel	0.50	mg/kg	33.1	26.5	62.4	59.4	58.8	147	84.4	331	206	223	52.4
phosphorus	50	mg/kg	1000	1210	809	844	902	1880	1320	1400	3220	2160	836
potassium	100	mg/kg	780	870	1280	1140	1060	800	780	860	1900	810	530
selenium	0.20	mg/kg	10.2	3.13	14.4	13.3	11.7	28.8	19.7	17.6	30.6	48.2	8.29
silver	0.10	mg/kg	0.12	0.15	0.29	0.27	0.21	0.24	0.16	0.26	0.36	0.24	<0.10
sodium	50	mg/kg	140	68	104	99	115	99	83	70	143	106	<50
strontium	0.50	mg/kg	126	74.9	498	566	580	82.7	83.4	76.2	126	89.0	33.4
sulfur	1000	mg/kg	3900	<1000	4200	4200	4400	2800	3300	2400	3500	3900	<1000
thallium	0.050	mg/kg	0.135	0.150	0.168	0.172	0.208	0.407	0.230	0.339	0.688	0.623	0.188
tin	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.9	<2.0	<2.0
titanium	1.0	mg/kg	17.0	25.0	21.6	17.4	21.0	18.7	20.0	19.0	27.2	14.2	9.3
tungsten	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	0.50	<0.50	<0.50	<0.50	<0.72	<0.50	<0.50
uranium	0.050	mg/kg	0.974	0.906	1.66	1.48	1.65	1.74	1.90	1.62	2.91	2.21	0.724
vanadium	0.20	mg/kg	14.0	26.6	24.8	22.6	19.9	19.6	16.4	18.4	47.8	22.2	12.1
zinc	2.0	mg/kg	104	99.1	308	335	391	354	195	329	548	562	140
zirconium	1.0	mg/kg	1.2	1.2	<1.0	<1.0	<1.0	1.4	<1.0	1.8	1.8	<1.0	<1.0

Qualifier Legend

DLM Detection Limit Adjusted due to sample
 FR5 As per applicable reference method(s),

Results Summary CG2213501

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 27-Sep-2022 09:00
Issue Date 18-Oct-2022 18:20
Amendment 0

Client Sample ID			RG_FRUPO_SE-1_LAEMP_FRO_2022-09-18_N	RG_FRUPO_SE-2_LAEMP_FRO_2022-09-18_N	RG_FRUPO_SE-3_LAEMP_FRO_2022-09-18_N	RG_FRUPO_SE-4_LAEMP_FRO_2022-09-18_N	RG_FRUPO_SE-5_LAEMP_FRO_2022-09-18_N	RG_RIVER_SE-1_LAEMP_FRO_2022-09-18_N	RG_RIVER_SE-5_LAEMP_FRO_2022-09-18_N	RG_WED_SE-1_LAEMP_FRO_2022-09-18_N	RG_WED_SE-2_LAEMP_FRO_2022-09-18_N	RG_WED_SE-3_LAEMP_FRO_2022-09-18_N	RG_WED_SE-4_LAEMP_FRO_2022-09-18_N
Date Sampled			18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022
Time Sampled			12:00	12:05	12:10	12:15	12:20	12:00	12:20	14:00	14:05	14:10	14:15
ALS Sample ID			CG2213501-001	CG2213501-002	CG2213501-003	CG2213501-004	CG2213501-005	CG2213501-006	CG2213501-007	CG2213501-008	CG2213501-009	CG2213501-010	CG2213501-011
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil
Physical Tests (Matrix: Soil/Solid)													
moisture	0.25	%	51.6	33.3	49.5	46.4	45.8	54.9	46.7				
pH (1:2 soil:water)	0.10	pH units	8.08	8.18	8.04	8.09	8.15	8.08	8.10	7.92	7.79	7.90	7.87
Particle Size (Matrix: Soil/Solid)													
clay (<0.004mm)	1.0	%	5.0	2.1	5.1	3.7	3.2	4.8	4.1	4.4	5.0	4.1	3.4
grain size curve			See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached
silt (0.063mm - 0.0312mm)	1.0	%	19.0	6.6	17.5	15.6	18.7	21.4	20.4	32.0	27.4	23.3	20.4
silt (0.0312mm - 0.004mm)	1.0	%	23.2	7.2	21.5	17.5	18.1	25.4	21.0	36.4	32.0	27.2	21.9
sand (0.125mm - 0.063mm)	1.0	%	10.5	9.3	11.4	13.8	22.7	8.9	19.2	4.6	5.2	4.9	11.1
sand (0.25mm - 0.125mm)	1.0	%	12.8	16.0	18.6	19.8	25.0	11.1	23.6	3.5	4.0	3.7	13.0
sand (0.5mm - 0.25mm)	1.0	%	11.5	42.3	21.3	21.4	6.9	10.3	6.9	3.6	2.9	3.0	6.0
sand (1.0mm - 0.50mm)	1.0	%	12.4	13.2	4.4	6.5	2.0	12.4	2.0	6.0	3.7	3.7	3.1
sand (2.0mm - 1.0mm)	1.0	%	2.5	2.7	<1.0	<1.0	1.5	3.5	2.1	5.3	5.5	6.1	2.7
gravel (>2mm)	1.0	%	3.1	<1.0	<1.0	1.1	1.9	2.2	<1.0	4.2	14.3	24.0	18.4
Organic / Inorganic Carbon (Matrix: Soil/Solid)													
carbon, inorganic [IC]	0.050	%	1.77	1.49	1.83	1.82	1.98	1.78	1.92	1.64	1.94	1.78	1.64
carbon, total [TC]	0.050	%	9.44	4.20	7.32	6.88	6.22	9.80	6.68	16.9	16.7	17.1	10.4
carbon, total organic [TOC]	0.050	%	7.67	2.71	5.49	5.06	4.24	8.02	4.76	15.3	14.8	15.3	8.76
carbon, inorganic [IC], (as CaCO3 equivalent)	0.40	%	14.7	12.4	15.3	15.1	16.5	14.8	16.0	13.7	16.2	14.9	13.6

Results Summary CG2213501

Project Regional Effects Program
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Client Sample ID			RG_FRUPO_SE-1_LAEMP_FRO_2022-09-18_N	RG_FRUPO_SE-2_LAEMP_FRO_2022-09-18_N	RG_FRUPO_SE-3_LAEMP_FRO_2022-09-18_N	RG_FRUPO_SE-4_LAEMP_FRO_2022-09-18_N	RG_FRUPO_SE-5_LAEMP_FRO_2022-09-18_N	RG_RIVER_SE-1_LAEMP_FRO_2022-09-18_N	RG_RIVER_SE-5_LAEMP_FRO_2022-09-18_N	RG_WED_SE-1_LAEMP_FRO_2022-09-18_N	RG_WED_SE-2_LAEMP_FRO_2022-09-18_N	RG_WED_SE-3_LAEMP_FRO_2022-09-18_N	RG_WED_SE-4_LAEMP_FRO_2022-09-18_N
Date Sampled			18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022
Time Sampled			12:00	12:05	12:10	12:15	12:20	12:00	12:20	14:00	14:05	14:10	14:15
ALS Sample ID			CG2213501-001	CG2213501-002	CG2213501-003	CG2213501-004	CG2213501-005	CG2213501-006	CG2213501-007	CG2213501-008	CG2213501-009	CG2213501-010	CG2213501-011
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil
Metals (Matrix: Soil/Solid)													
aluminum	50	mg/kg	5210	5980	6680	6100	5500	5250	5430	3510	3500	3770	5330
antimony	0.10	mg/kg	0.65	0.67	0.65	0.59	0.53	0.58	0.56	0.49	0.46	0.52	0.48
arsenic	0.10	mg/kg	5.00	5.76	5.36	5.14	4.76	4.81	4.32	3.30	3.48	3.60	4.65
barium	0.50	mg/kg	186	168	197	175	156	185	165	186	204	184	178
beryllium	0.10	mg/kg	0.48	0.61	0.55	0.58	0.50	0.52	0.50	0.40	0.37	0.47	0.51
bismuth	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
boron	5.0	mg/kg	<5.0	<5.0	5.7	5.4	5.0	5.7	5.2	5.3	6.3	<5.0	5.1
cadmium	0.020	mg/kg	1.39	1.24	1.32	1.32	1.20	1.36	1.34	1.26	1.25	1.06	1.02
calcium	50	mg/kg	46600	40300	49200	49600	47900	41300	48700	53500	53000	36800	35300
chromium	0.50	mg/kg	10.4	10.5	12.7	11.4	10.6	10.1	10.2	11.2	20.1	24.9	10.5
cobalt	0.10	mg/kg	5.33	5.43	5.86	5.56	5.01	5.81	5.64	4.43	4.60	4.14	4.92
copper	0.50	mg/kg	15.2	12.4	14.2	12.5	11.4	13.0	11.3	12.3	12.6	14.4	12.1
iron	50	mg/kg	11900	15000	13200	13600	11300	13000	12200	8590	9270	11500	12800
lead	0.50	mg/kg	7.77	7.99	8.53	7.90	7.26	7.67	7.86	6.91	7.15	7.64	7.93
lithium	2.0	mg/kg	6.9	8.3	8.9	9.0	7.9	7.6	8.0	5.0	5.5	5.3	8.9
magnesium	20	mg/kg	10100	9160	10800	11500	12300	9990	12100	12500	12400	11000	14400
manganese	1.0	mg/kg	427	416	444	427	382	485	480	253	485	220	229
mercury	0.0050	mg/kg	0.0436	0.0298	0.0365	0.0331	0.0333	0.0402	0.0446	0.0406	0.0427	0.0441	0.0406
molybdenum	0.10	mg/kg	1.55	1.56	1.69	1.52	1.36	1.38	1.28	1.38	2.50	3.13	1.14
nickel	0.50	mg/kg	28.1	28.7	28.6	28.4	25.1	30.4	28.3	21.1	26.4	26.9	21.2
phosphorus	50	mg/kg	1430	1610	1400	1610	1460	1350	1310	1260	1290	1500	1140
potassium	100	mg/kg	1330	1460	1650	1490	1290	1270	1260	910	960	930	1050
selenium	0.20	mg/kg	2.92	1.26	1.80	1.75	2.04	2.50	1.93	15.6	12.3	10.3	5.29
silver	0.10	mg/kg	0.19	0.13	0.18	0.15	0.15	0.17	0.16	0.19	0.20	0.19	0.18
sodium	50	mg/kg	71	67	89	75	78	68	74	80	85	67	73
strontium	0.50	mg/kg	60.0	69.0	74.1	67.7	62.7	56.6	58.2	54.8	56.0	48.5	41.6
sulfur	1000	mg/kg	<1000	<1000	<1000	<1000	<1000	<1000	<1000	1300	1200	<1000	<1000
thallium	0.050	mg/kg	0.183	0.193	0.201	0.192	0.174	0.216	0.186	0.109	0.106	0.102	0.137
tin	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	1.0	mg/kg	7.4	6.7	6.8	7.2	7.1	7.0	9.5	17.6	20.1	19.0	21.7
tungsten	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	0.050	mg/kg	1.14	1.16	1.10	1.12	0.992	1.06	0.953	1.06	1.06	1.06	1.07
vanadium	0.20	mg/kg	24.8	30.0	30.1	28.2	24.4	25.0	24.4	17.1	17.8	18.6	21.9
zinc	2.0	mg/kg	103	114	110	109	100	104	114	85.2	95.7	76.3	87.2
zirconium	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	1.1	1.1	1.2

Results Summary CG2213501

Project Regional Effects Program
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Amendment 0

Client Sample ID			RG_FRUPO_SE-1_LAEMP_FRO_2022-09-18_N	RG_FRUPO_SE-2_LAEMP_FRO_2022-09-18_N	RG_FRUPO_SE-3_LAEMP_FRO_2022-09-18_N	RG_FRUPO_SE-4_LAEMP_FRO_2022-09-18_N	RG_FRUPO_SE-5_LAEMP_FRO_2022-09-18_N	RG_RIVER_SE-1_LAEMP_FRO_2022-09-18_N	RG_RIVER_SE-5_LAEMP_FRO_2022-09-18_N	RG_WED_SE-1_LAEMP_FRO_2022-09-18_N	RG_WED_SE-2_LAEMP_FRO_2022-09-18_N	RG_WED_SE-3_LAEMP_FRO_2022-09-18_N	RG_WED_SE-4_LAEMP_FRO_2022-09-18_N
Date Sampled			18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022
Time Sampled			12:00	12:05	12:10	12:15	12:20	12:00	12:20	14:00	14:05	14:10	14:15
ALS Sample ID			CG2213501-001	CG2213501-002	CG2213501-003	CG2213501-004	CG2213501-005	CG2213501-006	CG2213501-007	CG2213501-008	CG2213501-009	CG2213501-010	CG2213501-011
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil
Polycyclic Aromatic Hydrocarbons (Matrix: Soil/Solid)													
acenaphthene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
acenaphthylene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
acridine	0.050	mg/kg	0.059	<0.050	0.059	0.054	<0.050	0.056	0.051				
anthracene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
benz(a)anthracene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(a)pyrene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(b+j)fluoranthene	0.050	mg/kg	0.055	<0.050	<0.050	<0.050	<0.050	0.058	0.051				
benzo(b+j+k)fluoranthene	0.075	mg/kg	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075
benzo(g,h,i)perylene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
benzo(k)fluoranthene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
chrysene	0.050	mg/kg	0.123	0.061	0.140	0.117	0.094	0.134	0.118				
dibenz(a,h)anthracene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
fluoranthene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
fluorene	0.050	mg/kg	0.092	<0.050	0.100	0.086	0.069	0.092	0.083				
indeno(1,2,3-c,d)pyrene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
methylnaphthalene, 1+2-	0.050	mg/kg	1.27	0.583	1.57	1.21	0.970	1.44	1.12				
methylnaphthalene, 1-	0.030	mg/kg	0.473	0.224	0.590	0.465	0.378	0.546	0.429				
methylnaphthalene, 2-	0.030	mg/kg	0.801	0.359	0.980	0.746	0.592	0.890	0.695				
naphthalene	0.010	mg/kg	0.305	0.146	0.422	0.308	0.244	0.385	0.275				
phenanthrene	0.050	mg/kg	0.426	0.216	0.544	0.416	0.345	0.501	0.410				
pyrene	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
quinoline	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
B(a)P total potency equivalents [B(a)P TPE]	0.065	mg/kg	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065
IACR (CCME)	0.60		0.82	0.61	0.64	0.63	0.62	0.85	0.80				
IACR AB (coarse)	0.10		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
IACR AB (fine)	0.10		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
PAHs, total (BC Sched 3.4)	0.20	mg/kg	1.75	0.78	2.19	1.67	1.34	2.00	1.58				
PAHs, total (EPA 16)	0.20	mg/kg	1.00	0.42	1.21	0.93	0.75	1.17	0.94				
Polycyclic Aromatic Hydrocarbons Surrogates (Matrix: Soil/Solid)													
acridine-d9	0.1	%	85.8	87.9	98.6	87.8	94.2	87.6	89.4				
chrysene-d12	0.1	%	102	106	114	104	112	104	106				
naphthalene-d8	0.1	%	107	105	116	102	112	107	110				
phenanthrene-d10	0.1	%	93.7	96.2	104	96.1	102	93.9	96.8				

Qualifier Legend

FR5 As per applicable reference method(s), soil:water ratio for Fixed Ratio Leach was modified to 1:5 due to high soil organic content

Results Summary CG2213501

Project Regional Effects Program
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Amendment 0

Client Sample ID			RG_WED_SE-5_LAEMP_FRO_2022-09-18_N	RG_FO26_SE-1_LAEMP_FRO_2022-09-16_N	RG_FO26_SE-2_LAEMP_FRO_2022-09-16_N	RG_FO26_SE-3_LAEMP_FRO_2022-09-16_N	RG_RIVER_SE-1_LAEMP_FRO_2022-09-16_N
Date Sampled			18-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022
Time Sampled			14:20	12:00	12:05	12:10	12:00
ALS Sample ID			CG2213501-012	CG2213501-013	CG2213501-014	CG2213501-015	CG2213501-018
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil
Physical Tests (Matrix: Soil/Solid)							
moisture	0.25	%		52.6	43.5	40.7	
pH (1:2 soil:water)	0.10	pH units	7.75	7.97	8.16	8.05	8.03
Particle Size (Matrix: Soil/Solid)							
clay (<0.004mm)	1.0	%	5.4	3.2	2.2	1.8	3.6
grain size curve			See Attached	See Attached	See Attached	See Attached	See Attached
silt (0.063mm - 0.0312mm)	1.0	%	20.7	19.4	10.5	6.1	19.4
silt (0.0312mm - 0.004mm)	1.0	%	25.1	20.0	9.9	6.3	20.5
sand (0.125mm - 0.063mm)	1.0	%	9.8	8.9	14.8	7.6	11.1
sand (0.25mm - 0.125mm)	1.0	%	18.3	20.5	29.2	23.5	21.0
sand (0.5mm - 0.25mm)	1.0	%	10.1	13.6	23.5	35.4	13.9
sand (1.0mm - 0.50mm)	1.0	%	2.7	7.0	5.4	16.1	5.8
sand (2.0mm - 1.0mm)	1.0	%	1.3	4.6	2.7	2.0	2.8
gravel (>2mm)	1.0	%	6.6	2.8	1.8	1.2	1.9
Organic / Inorganic Carbon (Matrix: Soil/Solid)							
carbon, inorganic [IC]	0.050	%	1.72	2.12	2.43	2.20	2.09
carbon, total [TC]	0.050	%	12.7	7.02	5.24	4.99	8.41
carbon, total organic [TOC]	0.050	%	11.0	4.90	2.81	2.79	6.32
carbon, inorganic [IC], (as CaCO3 equivalent)	0.40	%	14.4	17.7	20.2	18.3	17.4

Results Summary CG2213501

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 27-Sep-2022 09:00
Issue Date 18-Oct-2022 18:20
Amendment 0

Client Sample ID			RG_WED_SE- 5_LAEMP_FRO_2022- 09-18_N	RG_FO26_SE- 1_LAEMP_FRO_2022- 09-16_N	RG_FO26_SE- 2_LAEMP_FRO_2022- 09-16_N	RG_FO26_SE- 3_LAEMP_FRO_2022- 09-16_N	RG_RIVER_SE- 1_LAEMP_FRO_2022- 09-16_N
Date Sampled			18-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022
Time Sampled			14:20	12:00	12:05	12:10	12:00
ALS Sample ID			CG2213501-012	CG2213501-013	CG2213501-014	CG2213501-015	CG2213501-018
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil
Metals (Matrix: Soil/Solid)							
aluminum	50	mg/kg	4300	5820	5960	5640	5340
antimony	0.10	mg/kg	0.52	0.50	0.58	0.58	0.46
arsenic	0.10	mg/kg	4.67	5.06	5.27	5.37	5.20
barium	0.50	mg/kg	166	139	144	144	123
beryllium	0.10	mg/kg	0.44	0.52	0.54	0.50	0.49
bismuth	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
boron	5.0	mg/kg	<5.0	5.6	<5.0	<5.0	5.9
cadmium	0.020	mg/kg	1.04	0.755	0.731	0.747	0.766
calcium	50	mg/kg	42000	54500	62400	59700	58600
chromium	0.50	mg/kg	9.56	10.5	10.3	9.95	10.3
cobalt	0.10	mg/kg	4.93	5.57	5.84	5.67	5.92
copper	0.50	mg/kg	12.3	13.6	13.6	13.2	14.2
iron	50	mg/kg	11700	13800	15700	14900	13900
lead	0.50	mg/kg	8.21	8.85	9.18	8.62	8.98
lithium	2.0	mg/kg	7.5	8.6	9.8	8.4	9.6
magnesium	20	mg/kg	12700	11300	11900	10600	12100
manganese	1.0	mg/kg	242	497	449	469	517
mercury	0.0050	mg/kg	0.0408	0.0353	0.0306	0.0307	0.0384
molybdenum	0.10	mg/kg	1.19	1.46	1.62	1.47	1.38
nickel	0.50	mg/kg	21.1	19.2	19.3	18.8	19.9
phosphorus	50	mg/kg	1370	1320	1320	1310	1360
potassium	100	mg/kg	870	1280	1260	1230	1160
selenium	0.20	mg/kg	6.79	0.99	0.83	0.75	1.04
silver	0.10	mg/kg	0.18	0.15	0.13	0.13	0.18
sodium	50	mg/kg	66	74	75	71	95
strontium	0.50	mg/kg	49.7	59.4	68.1	68.8	60.6
sulfur	1000	mg/kg	<1000	<1000	<1000	<1000	<1000
thallium	0.050	mg/kg	0.118	0.196	0.189	0.204	0.177
tin	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
titanium	1.0	mg/kg	18.9	7.0	6.6	6.1	16.5
tungsten	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
uranium	0.050	mg/kg	1.08	0.870	0.819	0.837	0.847
vanadium	0.20	mg/kg	20.2	21.5	22.2	23.3	19.4
zinc	2.0	mg/kg	92.9	90.2	90.9	93.0	91.5
zirconium	1.0	mg/kg	1.3	<1.0	<1.0	<1.0	1.1

Results Summary CG2213501

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 27-Sep-2022 09:00
Issue Date 18-Oct-2022 18:20
Amendment 0

Client Sample ID			RG_WED_SE-5_LAEMP_FRO_2022-09-18_N	RG_FO26_SE-1_LAEMP_FRO_2022-09-16_N	RG_FO26_SE-2_LAEMP_FRO_2022-09-16_N	RG_FO26_SE-3_LAEMP_FRO_2022-09-16_N	RG_RIVER_SE-1_LAEMP_FRO_2022-09-16_N
Date Sampled			18-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022
Time Sampled			14:20	12:00	12:05	12:10	12:00
ALS Sample ID			CG2213501-012	CG2213501-013	CG2213501-014	CG2213501-015	CG2213501-018
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil	Sub-Matrix: Soil
Polycyclic Aromatic Hydrocarbons (Matrix: Soil/Solid)							
acenaphthene	0.050	mg/kg		<0.050	<0.050	<0.050	
acenaphthylene	0.050	mg/kg		<0.050	<0.050	<0.050	
acridine	0.050	mg/kg		<0.050	<0.050	<0.050	
anthracene	0.050	mg/kg		<0.050	<0.050	<0.050	
benz(a)anthracene	0.050	mg/kg		<0.050	<0.050	<0.050	
benzo(a)pyrene	0.050	mg/kg		<0.050	<0.050	<0.050	
benzo(b+j)fluoranthene	0.050	mg/kg		<0.050	<0.050	<0.050	
benzo(b+j+k)fluoranthene	0.075	mg/kg		<0.075	<0.075	<0.075	
benzo(g,h,i)perylene	0.050	mg/kg		<0.050	<0.050	<0.050	
benzo(k)fluoranthene	0.050	mg/kg		<0.050	<0.050	<0.050	
chrysene	0.050	mg/kg		0.111	0.083	0.092	
dibenz(a,h)anthracene	0.050	mg/kg		<0.050	<0.050	<0.050	
fluoranthene	0.050	mg/kg		<0.050	<0.050	<0.050	
fluorene	0.050	mg/kg		0.054	<0.050	<0.050	
indeno(1,2,3-c,d)pyrene	0.050	mg/kg		<0.050	<0.050	<0.050	
methylnaphthalene, 1+2-	0.050	mg/kg		0.796	0.524	0.493	
methylnaphthalene, 1-	0.030	mg/kg		0.299	0.195	0.191	
methylnaphthalene, 2-	0.030	mg/kg		0.497	0.329	0.302	
naphthalene	0.010	mg/kg		0.195	0.139	0.140	
phenanthrene	0.050	mg/kg		0.365	0.270	0.317	
pyrene	0.050	mg/kg		<0.050	<0.050	<0.050	
quinoline	0.050	mg/kg		<0.050	<0.050	<0.050	
B(a)P total potency equivalents [B(a)P TPE]	0.065	mg/kg		<0.065	<0.065	<0.065	
IACR (CCME)	0.60			0.63	0.62	0.62	
IACR AB (coarse)	0.10			<0.10	<0.10	<0.10	
IACR AB (fine)	0.10			<0.10	<0.10	<0.10	
PAHs, total (BC Sched 3.4)	0.20	mg/kg		1.22	0.82	0.85	
PAHs, total (EPA 16)	0.20	mg/kg		0.72	0.49	0.55	
Polycyclic Aromatic Hydrocarbons Surrogates (Matrix: Soil/Solid)							
acridine-d9	0.1	%		103	105	106	
chrysene-d12	0.1	%		119	122	124	
naphthalene-d8	0.1	%		107	114	116	
phenanthrene-d10	0.1	%		112	116	115	

Qualifier Legend

FR5 As per applicable reference method(s).

Results Summary CG2207615

Project REGIONAL EFFECT PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 15-Jun-2022 08:55
Issue Date 29-Jun-2022 13:44
Amendment 0

Client Sample ID			RG_FOUSH_WS_LA EMP_FRO_2022- 06_NP	RG_FOBKS_WS_LAE MP_FRO_2022- 06_NP	RG_SCOUTDS_WS LAEMP_FRO_2022- 06_NP	RG_TRIP_WS_LAEM P_FRO_2022-06_NP	RG_FODHE_WS_LA EMP_FRO_2022- 06_NP	RG_FOUCL_WS_LAE MP_FRO_2022- 06_NP	RG_FOUNGD_WS_L AEMP_FRO_2022- 06_NP	RG_FODNGD_WS_L AEMP_FRO_2022- 06_NP	RG_MP1_WS_LAEM P_FRO_2022-06_NP
Date Sampled			13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022
Time Sampled			08:30	13:00	14:00	00:00	11:30	10:30	10:45	09:35	09:40
ALS Sample ID			CG2207615-001	CG2207615-002	CG2207615-003	CG2207615-004	CG2207615-005	CG2207615-006	CG2207615-007	CG2207615-008	CG2207615-009
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Physical Tests (Matrix: Water)											
conductivity	2.0	µS/cm	323	335	362	<2.0	232	259	304	303	322
acidity (as CaCO3)	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
alkalinity, bicarbonate (as CaCO3)	1.0	mg/L	120	130	124	<1.0	109	113	117	119	118
alkalinity, bicarbonate (as HCO3)	1.0	mg/L	147	159	151	<1.0	133	138	142	145	144
alkalinity, carbonate (as CO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, carbonate (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as OH)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	1.0	mg/L	120	130	124	<1.0	109	113	117	119	118
hardness (as CaCO3), dissolved	0.50	mg/L	176	181	200	<0.50	128	138	164	160	172
oxidation-reduction potential [ORP]	0.10	mV	329	336	334	525	344	328	330	336	341
pH	0.10	pH units	8.02	8.10	8.08	5.39	7.97	7.98	8.07	8.10	8.02
solids, total dissolved [TDS]	10	mg/L	209	220	244	<10	149	152	187	190	209
solids, total suspended [TSS]	1.0	mg/L	29.0	17.3	21.6	<1.0	8.3	7.4	9.6	11.7	34.8
turbidity	0.10	NTU	3.90	5.73	6.43	<0.10	2.86	2.37	3.57	4.32	6.06
Anions and Nutrients (Matrix: Water)											
Kjeldahl nitrogen, total [TKN]	0.050	mg/L	<0.500	<0.500	0.758	<0.050	<0.500	<0.500	<0.500	<0.500	<0.500
ammonia, total (as N)	0.0050	mg/L	<0.0050	<0.0050	0.0054	<0.0050	<0.0050	0.0112	<0.0050	0.0080	0.0108
bromide	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
chloride	0.10	mg/L	0.20	0.24	0.72	<0.10	0.18	0.28	0.16	0.14	0.19
fluoride	0.020	mg/L	0.143	0.146	0.138	<0.020	0.150	0.154	0.146	0.141	0.141
nitrate (as N)	0.0050	mg/L	3.31	3.57	3.51	<0.0050	0.525	0.989	2.71	2.65	3.38
nitrite (as N)	0.0010	mg/L	<0.0010	<0.0010	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
phosphate, ortho-, dissolved (as P)	0.0010	mg/L	<0.0010	<0.0010	0.0014	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
phosphorus, total	0.0020	mg/L	0.0155	0.0234	0.0068	<0.0020	0.0086	0.0109	0.0083	0.0205	0.0297
sulfate (as SO4)	0.30	mg/L	55.0	60.8	72.7	<0.30	24.3	34.2	49.7	48.2	54.8
Organic / Inorganic Carbon (Matrix: Water)											
carbon, dissolved organic [DOC]	0.50	mg/L	2.05	1.72	2.04		3.33	2.17	1.93	1.67	2.12
carbon, total organic [TOC]	0.50	mg/L	2.22	1.89	1.96	<0.50	2.04	3.13	1.84	1.63	2.60
Ion Balance (Matrix: Water)											
anion sum	0.10	meq/L	3.79	4.13	4.27	<0.10	2.73	3.06	3.58	3.58	3.75
cation sum	0.10	meq/L	3.56	3.67	4.07	<0.10	2.59	2.79	3.33	3.24	3.48
ion balance (APHA)	0.010	%	3.13	5.90	2.40	<0.010	2.63	4.62	3.62	4.98	3.73
ion balance (cations/anions)	0.010	%	93.9	88.9	95.3	100	94.9	91.2	93.0	90.5	92.8

Results Summary CG2207615

Project REGIONAL EFFECT PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 15-Jun-2022 08:55
Issue Date 29-Jun-2022 13:44
Amendment 0

Client Sample ID			RG_FOUSH_WS_LA EMP_FRO_2022- 06_NP	RG_FOBKS_WS_LAE MP_FRO_2022- 06_NP	RG_SCOUTDS_WS LAEMP_FRO_2022- 06_NP	RG_TRIP_WS_LAEM P_FRO_2022-06_NP	RG_FODHE_WS_LA EMP_FRO_2022- 06_NP	RG_FOUCL_WS_LAE MP_FRO_2022- 06_NP	RG_FOUNGD_WS_L AEMP_FRO_2022- 06_NP	RG_FODNGD_WS_L AEMP_FRO_2022- 06_NP	RG_MP1_WS_LAEM P_FRO_2022-06_NP
Date Sampled			13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022
Time Sampled			08:30	13:00	14:00	00:00	11:30	10:30	10:45	09:35	09:40
ALS Sample ID			CG2207615-001	CG2207615-002	CG2207615-003	CG2207615-004	CG2207615-005	CG2207615-006	CG2207615-007	CG2207615-008	CG2207615-009
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Total Metals (Matrix: Water)											
aluminum, total	0.0030	mg/L	0.0806	0.158	0.131	<0.0030	0.0473	0.0358	0.0584	0.0807	0.0726
antimony, total	0.00010	mg/L	0.00010	0.00013	0.00013	<0.00010	0.00015	<0.00010	<0.00010	<0.00010	0.00013
arsenic, total	0.00010	mg/L	0.00016	0.00019	0.00018	<0.00010	0.00012	0.00010	0.00012	0.00017	0.00016
barium, total	0.00010	mg/L	0.0300	0.0351	0.0324	<0.00010	0.0282	0.0291	0.0288	0.0313	0.0306
beryllium, total	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
bismuth, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, total	0.0050	µg/L	0.0462	0.0641	0.0651	<0.0050	0.0203	0.0189	0.0338	0.0703	0.0612
calcium, total	0.050	mg/L	45.1	46.1	47.9	<0.050	34.7	36.6	41.6	42.2	44.0
chromium, total	0.00010	mg/L	0.00023	0.00033	0.00030	<0.00010	0.00052	0.00013	0.00019	0.00026	0.00023
cobalt, total	0.10	µg/L	<0.10	0.18	0.15	<0.10	<0.10	<0.10	<0.10	0.16	0.13
copper, total	0.00050	mg/L	<0.00050	0.00054	<0.00050	<0.00050	0.00166	<0.00050	<0.00050	<0.00050	<0.00050
iron, total	0.010	mg/L	0.100	0.227	0.184	<0.010	0.046	0.034	0.086	0.187	0.121
lead, total	0.000050	mg/L	0.000064	0.000170	0.000144	<0.000050	0.000173	<0.000050	0.000060	0.000151	0.000152
lithium, total	0.0010	mg/L	0.0110	0.0123	0.0126	<0.0010	0.0029	0.0034	0.0109	0.0103	0.0106
magnesium, total	0.0050	mg/L	16.2	17.1	19.5	<0.0050	10.6	12.2	15.0	14.7	16.5
manganese, total	0.00010	mg/L	0.00578	0.0148	0.0105	<0.00010	0.00777	0.00292	0.00477	0.0326	0.0115
mercury, total	0.00	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, total	0.000050	mg/L	0.000700	0.000759	0.00114	<0.000050	0.000533	0.000630	0.000639	0.000630	0.000672
nickel, total	0.00050	mg/L	0.00200	0.00235	0.00237	<0.00050	0.00118	0.00066	0.00173	0.00290	0.00234
potassium, total	0.050	mg/L	0.673	0.770	0.797	<0.050	0.686	0.457	0.601	0.582	0.660
selenium, total	0.050	µg/L	13.0	13.9	15.9	<0.050	3.94	6.40	10.6	10.2	12.7
silicon, total	0.10	mg/L	1.76	1.80	1.80	<0.10	1.57	1.59	1.64	1.64	1.66
silver, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	0.050	mg/L	0.720	0.785	0.954	<0.050	0.678	0.484	0.720	0.678	0.728
strontium, total	0.00020	mg/L	0.0737	0.0786	0.0744	<0.00020	0.0668	0.0717	0.0771	0.0775	0.0782
sulfur, total	0.50	mg/L	18.6	20.4	25.3	<0.50	8.66	11.3	17.5	16.8	18.6
thallium, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
tin, total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00013	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	0.00030	mg/L	0.00127	0.00139	0.00155	<0.00030	0.00111	0.00065	0.00064	0.00101	0.00112
uranium, total	0.000010	mg/L	0.000876	0.000898	0.00101	<0.000010	0.000476	0.000537	0.000796	0.000810	0.000864
vanadium, total	0.00050	mg/L	<0.00050	0.00076	0.00068	<0.00050	<0.00050	<0.00050	<0.00050	0.00057	<0.00050
zinc, total	0.0030	mg/L	<0.0030	0.0036	0.0038	<0.0030	0.0174	<0.0030	<0.0030	0.0032	0.0039

Results Summary CG2207615

Project REGIONAL EFFECT PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 15-Jun-2022 08:55
Issue Date 29-Jun-2022 13:44
Amendment 0

Client Sample ID			RG_FOUSH_WS_LA EMP_FRO_2022- 06_NP	RG_FOBKS_WS_LAE MP_FRO_2022- 06_NP	RG_SCOUTDS_WS LAEMP_FRO_2022- 06_NP	RG_TRIP_WS_LAEM P_FRO_2022-06_NP	RG_FODHE_WS_LA EMP_FRO_2022- 06_NP	RG_FOUCL_WS_LAE MP_FRO_2022- 06_NP	RG_FOUNGD_WS_L AEMP_FRO_2022- 06_NP	RG_FODNGD_WS_L AEMP_FRO_2022- 06_NP	RG_MP1_WS_LAEM P_FRO_2022-06_NP
Date Sampled			13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022
Time Sampled			08:30	13:00	14:00	00:00	11:30	10:30	10:45	09:35	09:40
ALS Sample ID			CG2207615-001	CG2207615-002	CG2207615-003	CG2207615-004	CG2207615-005	CG2207615-006	CG2207615-007	CG2207615-008	CG2207615-009
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Dissolved Metals (Matrix: Water)											
aluminum, dissolved	0.0010	mg/L	0.0028	0.0030	0.0089		0.0109	0.0030	0.0032	0.0032	0.0031
antimony, dissolved	0.00010	mg/L	<0.00010	<0.00010	0.00011		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, dissolved	0.00010	mg/L	<0.00010	0.00010	0.00011		0.00010	<0.00010	<0.00010	<0.00010	<0.00010
barium, dissolved	0.00010	mg/L	0.0290	0.0298	0.0314		0.0256	0.0295	0.0282	0.0283	0.0292
beryllium, dissolved	0.020	µg/L	<0.020	<0.020	<0.020		<0.020	<0.020	<0.020	<0.020	<0.020
bismuth, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	0.010	mg/L	<0.010	<0.010	<0.010		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, dissolved	0.0050	µg/L	0.0298	0.0267	0.0340		0.0121	0.0125	0.0235	0.0236	0.0297
calcium, dissolved	0.050	mg/L	43.3	44.1	46.6	<0.050	33.7	35.7	41.6	40.5	42.0
chromium, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010		0.00023	0.00011	<0.00010	0.00012	<0.00010
cobalt, dissolved	0.10	µg/L	<0.10	<0.10	<0.10		<0.10	<0.10	<0.10	<0.10	<0.10
copper, dissolved	0.00020	mg/L	0.00021	0.00024	0.00025		0.00082	0.00020	0.00022	0.00020	0.00025
iron, dissolved	0.010	mg/L	<0.010	<0.010	<0.010		<0.010	<0.010	<0.010	<0.010	<0.010
lead, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
lithium, dissolved	0.0010	mg/L	0.0111	0.0124	0.0130		0.0032	0.0037	0.0115	0.0106	0.0106
magnesium, dissolved	0.0050	mg/L	16.4	17.2	20.4	<0.0050	10.6	11.9	14.7	14.3	16.2
manganese, dissolved	0.00010	mg/L	0.00145	0.00122	0.00146		0.00315	0.00058	0.00056	0.00053	0.00063
mercury, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
molybdenum, dissolved	0.000050	mg/L	0.000665	0.000684	0.00112		0.000532	0.000569	0.000612	0.000608	0.000683
nickel, dissolved	0.00050	mg/L	0.00156	0.00149	0.00183		0.00054	<0.00050	0.00132	0.00129	0.00163
potassium, dissolved	0.050	mg/L	0.618	0.698	0.799	<0.050	0.531	0.413	0.554	0.546	0.632
selenium, dissolved	0.050	µg/L	12.0	13.0	13.9		4.02	6.05	10.1	9.83	12.4
silicon, dissolved	0.050	mg/L	1.52	1.53	1.51		1.44	1.47	1.46	1.48	1.53
silver, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	0.050	mg/L	0.715	0.787	0.999	<0.050	0.561	0.488	0.705	0.687	0.723
strontium, dissolved	0.00020	mg/L	0.0697	0.0702	0.0740		0.0643	0.0674	0.0697	0.0724	0.0704
sulfur, dissolved	0.50	mg/L	18.3	19.5	22.9		7.56	10.7	16.3	16.3	17.5
thallium, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
tin, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	0.00030	mg/L	<0.00030	<0.00030	<0.00030		<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
uranium, dissolved	0.000010	mg/L	0.000834	0.000892	0.00106		0.000474	0.000526	0.000800	0.000767	0.000878
vanadium, dissolved	0.00050	mg/L	<0.00050	<0.00050	<0.00050		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
zinc, dissolved	0.0010	mg/L	0.0014	0.0014	0.0018		0.0083	<0.0010	0.0013	0.0011	0.0018
dissolved mercury filtration location			Field	Field	Field		Field	Field	Field	Field	Field
dissolved metals filtration location			Field	Field	Field	Laboratory	Field	Field	Field	Field	Field

Qualifier Legend

DLM Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DTC Dissolved concentration exceeds total. Results were confirmed by re-analysis.
RRV Reported result verified by repeat analysis.

Results Summary CG2208450

Project REGIONAL EFFECTS PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 29-Jun-2022 08:50
Issue Date 13-Jul-2022 13:23
Amendment 0

Client Sample ID			RG_FO26_WS_LAEM P_FRO_2022-06_NP	RG_UFR1_WS_LAEM P_FRO_2022-06_NP	RG_FOUK1_WS_LAE MP_FRO_2022-06_NP	RG_FRCP1SW_WS_L AEMP_FRO_2022- 06_NP	RG_FRSCH2_WS_LA EMP_FRO_2022- 06_NP	RG_FOBSC_WS_LAE MP_FRO_2022-06_NP	RG_RIVER_WS_LAE MP_FRO_2022-06_NP	RG_FODPO_WS_LAE MP_FRO_2022-06_NP	RG_TRIP_WS_LAEM P_FRO_2022-06_NP	RG_FBLANK_WS_LA EMP_FRO_2022- 06_NP
Date Sampled			27-Jun-2022	27-Jun-2022	27-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022
Time Sampled			10:50	12:15	14:20	14:05	12:40	08:35	14:05	10:05	14:05	14:05
ALS Sample ID			CG2208450-001	CG2208450-002	CG2208450-003	CG2208450-004	CG2208450-005	CG2208450-006	CG2208450-007	CG2208450-008	CG2208450-009	CG2208450-010
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Physical Tests (Matrix: Water)												
conductivity	2.0	µS/cm	216	212	422	531	612	748	528	584	<2.0	<2.0
acidity (as CaCO3)	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	2.1
alkalinity, bicarbonate (as CaCO3)	1.0	mg/L	120	113	136	176	187	225	158	187	<1.0	<1.0
alkalinity, bicarbonate (as HCO3)	1.0	mg/L	147	138	165	214	228	275	193	228	<1.0	<1.0
alkalinity, carbonate (as CO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, carbonate (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as OH)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	1.0	mg/L	120	113	136	176	187	225	158	187	<1.0	<1.0
hardness (as CaCO3), dissolved	0.50	mg/L	114	113	222	278	314	409	276	303		<0.50
oxidation-reduction potential [ORP]	0.10	mV	242	266	394	347	323	303	292	401	494	535
pH	0.10	pH units	8.14	8.10	8.17	8.20	8.18	8.27	8.23	8.21	5.34	5.28
solids, total dissolved [TDS]	10	mg/L	141	132	297	380	401	530	344	382	<10	<10
solids, total suspended [TSS]	1.0	mg/L	1.4	7.3	4.7	10.7	12.4	2.2	8.4	15.6	<1.0	<1.0
turbidity	0.10	NTU	0.60	2.11	1.74	3.50	3.65	0.60	2.28	3.75	<0.10	<0.10
Anions and Nutrients (Matrix: Water)												
Kjeldahl nitrogen, total [TKN]	0.050	mg/L	0.106	0.079	1.25	<0.500	0.904	1.95	1.20	0.914	<0.050	<0.050
ammonia, total (as N)	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0709	0.0268	0.0067
bromide	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
chloride	0.10	mg/L	<0.10	0.13	0.30	0.86	1.12	0.68	0.85	1.01	<0.10	<0.10
fluoride	0.020	mg/L	0.111	0.133	0.156	0.166	0.154	0.182	0.163	0.160	<0.020	<0.020
nitrate (as N)	0.0050	mg/L	0.0449	0.0256	5.39	8.50	10.8	16.6	8.35	9.61	<0.0050	<0.0050
nitrite (as N)	0.0010	mg/L	<0.0010	<0.0010	0.0033	0.0038	0.0028	0.0022	0.0031	0.0016	<0.0010	<0.0010
phosphate, ortho-, dissolved (as P)	0.0010	mg/L	0.0032	0.0033	0.0012	0.0045	0.0014	<0.0010	0.0019	0.0032	<0.0010	<0.0010
phosphorus, total	0.0020	mg/L	0.0070	0.0092	0.0114	0.0192	0.0214	0.0054	0.0217	0.0307	<0.0020	<0.0020
sulfate (as SO4)	0.30	mg/L	10.3	9.94	82.3	109	137	151	107	125	<0.30	<0.30
Organic / Inorganic Carbon (Matrix: Water)												
carbon, dissolved organic [DOC]	0.50	mg/L	1.61	1.48	1.45	1.37	1.40	0.74	1.47	1.00		<0.50
carbon, total organic [TOC]	0.50	mg/L	1.68	2.02	1.51	1.52	1.32	1.16	1.48	1.41	<0.50	<0.50
Ion Balance (Matrix: Water)												
anion sum	0.10	meq/L	2.62	2.48	4.83	6.43	7.40	8.85	6.01	7.06	<0.10	<0.10
cation sum	0.10	meq/L	2.30	2.30	4.51	5.67	6.38	8.35	5.62	6.17	<0.10	<0.10
ion balance (APHA)	0.010	%	6.50	3.76	3.43	6.28	7.40	2.91	3.35	6.73	<0.010	<0.010
ion balance (cations/anions)	0.010	%	87.8	92.7	93.4	88.2	86.2	94.4	93.5	87.4	100	100

Results Summary CG2208450

Project REGIONAL EFFECTS PROGRAM
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Amendment 0

Client Sample ID			RG_FO26_WS_LAEM P_FRO_2022-06_NP	RG_UFR1_WS_LAEM P_FRO_2022-06_NP	RG_FOUK1_WS_LAE MP_FRO_2022-06_NP	RG_FRCP1SW_WS_L AEMP_FRO_2022- 06_NP	RG_FRSCH2_WS_LA EMP_FRO_2022- 06_NP	RG_FOBSC_WS_LAE MP_FRO_2022-06_NP	RG_RIVER_WS_LAE MP_FRO_2022-06_NP	RG_FODPO_WS_LAE MP_FRO_2022-06_NP	RG_TRIP_WS_LAEM P_FRO_2022-06_NP	RG_FBLANK_WS_LA EMP_FRO_2022- 06_NP
Date Sampled			27-Jun-2022	27-Jun-2022	27-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022
Time Sampled			10:50	12:15	14:20	14:05	12:40	08:35	14:05	10:05	14:05	14:05
ALS Sample ID			CG2208450-001	CG2208450-002	CG2208450-003	CG2208450-004	CG2208450-005	CG2208450-006	CG2208450-007	CG2208450-008	CG2208450-009	CG2208450-010
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Total Metals (Matrix: Water)												
aluminum, total	0.0030	mg/L	0.0266	0.0604	0.0305	0.0413	0.110	0.0120	0.0419	0.0810	<0.0030	<0.0030
antimony, total	0.00010	mg/L	<0.00010	<0.00010	0.00013	0.00018	0.00017	0.00032	0.00018	0.00017	<0.00010	<0.00010
arsenic, total	0.00010	mg/L	0.00011	0.00013	0.00013	0.00014	0.00021	<0.00010	0.00014	0.00015	<0.00010	<0.00010
barium, total	0.00010	mg/L	0.0280	0.0336	0.0340	0.0336	0.0421	0.0288	0.0344	0.0409	<0.00010	<0.00010
beryllium, total	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
bismuth, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	<0.010	<0.010	<0.010	<0.010
cadmium, total	0.0050	µg/L	0.0076	0.0110	0.0660	0.106	0.132	0.248	0.103	0.0970	<0.0050	<0.0050
calcium, total	0.050	mg/L	32.0	31.0	53.6	66.2	77.0	93.0	63.7	72.2	<0.050	<0.050
chromium, total	0.00010	mg/L	0.00019	0.00014	0.00011	0.00012	0.00022	<0.00010	0.00012	0.00023	<0.00010	<0.00010
cobalt, total	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	0.25	<0.10	<0.10	0.13	<0.10	<0.10
copper, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	0.00121	<0.00050	<0.00050	<0.00050	<0.00050	0.00507
iron, total	0.010	mg/L	0.028	0.074	0.040	0.069	0.238	0.015	0.065	0.128	<0.010	<0.010
lead, total	0.000050	mg/L	<0.000050	0.000063	<0.000050	0.000070	0.000313	<0.000050	0.000072	0.000141	<0.000050	0.000154
lithium, total	0.0010	mg/L	0.0014	0.0014	0.0164	0.0258	0.0277	0.0455	0.0252	0.0258	<0.0010	<0.0010
magnesium, total	0.0050	mg/L	8.64	8.45	21.4	28.1	33.4	41.4	28.6	32.7	<0.0050	<0.0050
manganese, total	0.00010	mg/L	0.00192	0.00360	0.00499	0.00662	0.0239	0.00138	0.00691	0.0104	<0.00010	<0.00010
mercury, total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, total	0.000050	mg/L	0.000579	0.000530	0.000851	0.00145	0.00120	0.00187	0.00146	0.00135	<0.000050	<0.000050
nickel, total	0.00050	mg/L	<0.00050	<0.00050	0.00288	0.00360	0.00372	0.00756	0.00369	0.00336	<0.00050	<0.00050
potassium, total	0.050	mg/L	0.308	0.335	0.899	1.21	1.30	1.91	1.24	1.30	<0.050	<0.050
selenium, total	0.050	µg/L	0.358	0.403	19.6	32.1	38.4	61.4	32.5	36.6	<0.050	<0.050
silicon, total	0.10	mg/L	1.84	1.85	1.63	1.63	1.76	1.52	1.65	1.82	<0.10	<0.10
silver, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	0.050	mg/L	0.519	0.526	0.984	1.75	1.97	2.96	1.71	1.91	<0.050	<0.050
strontium, total	0.00020	mg/L	0.0659	0.0644	0.0870	0.0914	0.102	0.106	0.0926	0.0990	<0.00020	<0.00020
sulfur, total	0.50	mg/L	3.58	3.48	27.8	36.7	46.4	51.5	37.5	44.3	<0.50	<0.50
thallium, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	<0.000010	<0.000010	<0.000010	<0.000010
tin, total	0.00010	mg/L	<0.00010	0.00013	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	0.00030	mg/L	0.00041	0.00055	0.00051	0.00045	0.00118	<0.00030	0.00051	0.00107	<0.00030	<0.00030
uranium, total	0.000010	mg/L	0.000351	0.000326	0.00128	0.00197	0.00213	0.00336	0.00198	0.00207	<0.000010	<0.000010
vanadium, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	0.00069	<0.00050	<0.00050	0.00052	<0.00050	<0.00050
zinc, total	0.0030	mg/L	<0.0030	<0.0030	0.0031	0.0041	0.0058	0.0087	0.0038	0.0044	<0.0030	<0.0030

Results Summary CG2208450

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Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Dissolved Metals (Matrix: Water)												
aluminum, dissolved	0.0010	mg/L	0.0026	0.0028	0.0029	0.0030	0.0036	0.0018	0.0025	0.0029		<0.0010
antimony, dissolved	0.00010	mg/L	<0.00010	<0.00010	0.00013	0.00018	0.00016	0.00031	0.00019	0.00016		<0.00010
arsenic, dissolved	0.00010	mg/L	0.00011	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010
barium, dissolved	0.00010	mg/L	0.0283	0.0322	0.0327	0.0332	0.0369	0.0284	0.0331	0.0377		<0.00010
beryllium, dissolved	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020		<0.020
bismuth, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050
boron, dissolved	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	<0.010	<0.010		<0.010
cadmium, dissolved	0.0050	µg/L	<0.0050	0.0071	0.0556	0.0807	0.0638	0.260	0.0815	0.0826		<0.0050
calcium, dissolved	0.050	mg/L	31.4	31.7	54.2	65.1	71.7	92.7	63.8	68.6	<0.050	<0.050
chromium, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010
cobalt, dissolved	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		<0.10
copper, dissolved	0.00020	mg/L	<0.00020	<0.00020	0.00023	0.00026	0.00064	0.00029	0.00021	0.00027		0.00431
iron, dissolved	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010
lead, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		0.000119
lithium, dissolved	0.0010	mg/L	0.0014	0.0015	0.0164	0.0247	0.0288	0.0474	0.0255	0.0260		<0.0010
magnesium, dissolved	0.0050	mg/L	8.55	8.30	21.1	28.1	32.7	43.2	28.4	32.0	<0.0050	<0.0050
manganese, dissolved	0.00010	mg/L	0.00018	0.00023	0.00220	0.00145	0.00109	0.00060	0.00140	0.00111		<0.00010
mercury, dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050		<0.0000050
molybdenum, dissolved	0.000050	mg/L	0.000552	0.000564	0.000913	0.00152	0.00135	0.00185	0.00148	0.00138		<0.000050
nickel, dissolved	0.00050	mg/L	<0.00050	<0.00050	0.00274	0.00327	0.00264	0.00774	0.00330	0.00259		<0.00050
potassium, dissolved	0.050	mg/L	0.306	0.317	0.895	1.21	1.30	2.07	1.24	1.30	<0.050	<0.050
selenium, dissolved	0.050	µg/L	0.386	0.447	19.7	32.3	37.9	64.4	32.2	38.0		<0.050
silicon, dissolved	0.050	mg/L	1.77	1.80	1.58	1.56	1.69	1.55	1.57	1.67		<0.050
silver, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010
sodium, dissolved	0.050	mg/L	0.510	0.515	0.987	1.80	1.85	2.81	1.66	1.76	<0.050	<0.050
strontium, dissolved	0.00020	mg/L	0.0637	0.0630	0.0871	0.0906	0.0968	0.105	0.0881	0.0927		<0.00020
sulfur, dissolved	0.50	mg/L	3.30	3.38	27.8	35.3	45.0	50.7	35.9	42.7		<0.50
thallium, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000012	<0.000010	<0.000010		<0.000010
tin, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010
titanium, dissolved	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030		<0.00030
uranium, dissolved	0.000010	mg/L	0.000364	0.000330	0.00129	0.00198	0.00205	0.00348	0.00195	0.00206		<0.000010
vanadium, dissolved	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050
zinc, dissolved	0.0010	mg/L	<0.0010	<0.0010	0.0025	0.0030	0.0027	0.0089	0.0031	0.0032		0.0027
dissolved mercury filtration location			Field	Field	Field	Field	Field	Field	Field	Field		Field
dissolved metals filtration location			Field	Field	Field	Field	Field	Field	Field	Field	Laboratory	Field

Qualifier Legend

DLM Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
RRV Reported result verified by repeat analysis.
TKNI TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.

Results Summary CG2208562

Project REGIONAL EFFECTS PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 02-Jul-2022 10:30
Issue Date 12-Jul-2022 17:55
Amendment 0

Client Sample ID			RG_FOBCP_WS_LAE MP_FRO_2022-06_NP	RG_FRUPO_WS_LAE MP_FRO_2022-06_NP	RG_FRGHSC_WS_LAE EMP_FRO_2022- 06_NP	RG_RIVER_WS_LAE MP_FRO_2022-06_NP	RG_TRIP_WS_LAEM P_FRO_2022-06_NP	RG_FBLANK_WS_LA EMP_FRO_2022- 06_NP
Date Sampled			29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022
Time Sampled			08:15	10:00	11:30	10:00	10:00	10:00
ALS Sample ID			CG2208562-004	CG2208562-005	CG2208562-006	CG2208562-007	CG2208562-009	CG2208562-010
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Physical Tests (Matrix: Water)								
conductivity	2.0	µS/cm	487	549	905	558	<2.0	<2.0
acidity (as CaCO3)	2.0	mg/L	<2.0	<2.0	2.8	<2.0	<2.0	<2.0
alkalinity, bicarbonate (as CaCO3)	1.0	mg/L	175	172	249	190	<1.0	<1.0
alkalinity, bicarbonate (as HCO3)	1.0	mg/L	214	210	304	232	<1.0	<1.0
alkalinity, carbonate (as CO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, carbonate (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as OH)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	1.0	mg/L	175	172	249	190	<1.0	<1.0
hardness (as CaCO3), dissolved	0.50	mg/L	285	317	559	330		<0.50
oxidation-reduction potential [ORP]	0.10	mV	223	367	310	281	541	565
pH	0.10	pH units	7.96	8.01	8.02	8.00	5.26	5.13
solids, total dissolved [TDS]	10	mg/L	344	388	724	399	<10	<10
solids, total suspended [TSS]	1.0	mg/L	8.0	9.0	1.3	8.3	<1.0	<1.0
turbidity	0.10	NTU	1.36	1.64	0.36	1.96	<0.10	<0.10
Anions and Nutrients (Matrix: Water)								
Kjeldahl nitrogen, total [TKN]	0.050	mg/L	1.14	1.19	1.93	0.674	<0.050	<0.050
ammonia, total (as N)	0.0050	mg/L	0.0053	0.100	<0.0050	0.0288	0.0125	<0.0050
bromide	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
chloride	0.10	mg/L	0.74	1.10	2.28	0.94	<0.10	<0.10
fluoride	0.020	mg/L	0.149	0.159	0.121	0.144	<0.020	<0.020
nitrate (as N)	0.0050	mg/L	7.58	9.66	22.3	9.77	<0.0050	<0.0050
nitrite (as N)	0.0010	mg/L	0.0146	0.0129	0.0023	0.0101	<0.0010	<0.0010
phosphate, ortho-, dissolved (as P)	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
phosphorus, total	0.0020	mg/L	0.0150	0.0200	0.0038	0.0126	<0.0020	<0.0020
sulfate (as SO4)	0.30	mg/L	94.2	113	225	113	<0.30	<0.30
Organic / Inorganic Carbon (Matrix: Water)								
carbon, dissolved organic [DOC]	0.50	mg/L	1.49	1.34	0.83	1.18		<0.50
carbon, total organic [TOC]	0.50	mg/L	1.86	1.38	0.91	1.46	<0.50	<0.50
Ion Balance (Matrix: Water)								
anion sum	0.10	meq/L	6.03	6.52	11.3	6.88	<0.10	<0.10
cation sum	0.10	meq/L	5.80	6.46	11.4	6.71	<0.10	<0.10
ion balance (APHA)	0.010	%	1.94	0.462	0.440	1.25	<0.010	<0.010
ion balance (cations/anions)	0.010	%	96.2	99.1	101	97.5	100	100

Results Summary CG2208562

Project REGIONAL EFFECTS PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 02-Jul-2022 10:30
Issue Date 12-Jul-2022 17:55
Amendment 0

Client Sample ID			RG_FOBCP_WS_LAE MP_FRO_2022-06_NP	RG_FRUPO_WS_LAE MP_FRO_2022-06_NP	RG_FRGHSC_WS_LA EMP_FRO_2022- 06_NP	RG_RIVER_WS_LAE MP_FRO_2022-06_NP	RG_TRIP_WS_LAEM P_FRO_2022-06_NP	RG_FBLANK_WS_LA EMP_FRO_2022- 06_NP
Date Sampled			29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022
Time Sampled			08:15	10:00	11:30	10:00	10:00	10:00
ALS Sample ID			CG2208562-004	CG2208562-005	CG2208562-006	CG2208562-007	CG2208562-009	CG2208562-010
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Total Metals (Matrix: Water)								
aluminum, total	0.0030	mg/L	0.0769	0.0733	0.0065	0.0772	<0.0030	<0.0030
antimony, total	0.00010	mg/L	0.00018	0.00016	0.00012	0.00020	<0.00010	<0.00010
arsenic, total	0.00010	mg/L	0.00015	0.00016	<0.00010	0.00016	<0.00010	<0.00010
barium, total	0.00010	mg/L	0.0331	0.0392	0.0659	0.0398	<0.00010	<0.00010
beryllium, total	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
bismuth, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	0.010	mg/L	<0.010	<0.010	0.014	<0.010	<0.010	<0.010
cadmium, total	0.0050	µg/L	0.0906	0.0811	0.0338	0.0825	<0.0050	<0.0050
calcium, total	0.050	mg/L	67.0	73.9	120	76.8	<0.050	<0.050
chromium, total	0.00010	mg/L	0.00022	0.00026	0.00017	0.00024	<0.00010	<0.00010
cobalt, total	0.10	µg/L	<0.10	0.10	<0.10	0.10	<0.10	<0.10
copper, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
iron, total	0.010	mg/L	0.116	0.116	0.011	0.129	<0.010	<0.010
lead, total	0.000050	mg/L	0.000086	0.000088	<0.000050	0.000083	<0.000050	<0.000050
lithium, total	0.0010	mg/L	0.0224	0.0260	0.0524	0.0278	<0.0010	<0.0010
magnesium, total	0.0050	mg/L	28.0	31.7	57.8	31.5	<0.0050	<0.0050
manganese, total	0.00010	mg/L	0.00724	0.00677	0.00046	0.00710	<0.00010	<0.00010
mercury, total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, total	0.000050	mg/L	0.00138	0.00129	0.000948	0.00143	<0.000050	<0.000050
nickel, total	0.00050	mg/L	0.00335	0.00298	<0.00050	0.00289	<0.00050	<0.00050
potassium, total	0.050	mg/L	1.23	1.37	2.27	1.37	<0.050	<0.050
selenium, total	0.050	µg/L	31.4	36.5	78.5	36.1	<0.050	<0.050
silicon, total	0.10	mg/L	1.73	1.78	2.08	1.82	<0.10	<0.10
silver, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	0.050	mg/L	1.50	1.75	3.77	1.78	<0.050	<0.050
strontium, total	0.00020	mg/L	0.0872	0.0925	0.136	0.0964	<0.00020	<0.00020
sulfur, total	0.50	mg/L	37.1	43.3	89.0	45.2	<0.50	<0.50
thallium, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
tin, total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	0.00030	mg/L	0.00067	0.00092	<0.00030	0.00113	<0.00030	<0.00030
uranium, total	0.000010	mg/L	0.00178	0.00200	0.00329	0.00200	<0.000010	<0.000010
vanadium, total	0.00050	mg/L	0.00055	0.00059	<0.00050	0.00054	<0.00050	<0.00050
zinc, total	0.0030	mg/L	0.0040	0.0035	<0.0030	0.0035	<0.0030	<0.0030

Results Summary CG2208562

Project REGIONAL EFFECTS PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 02-Jul-2022 10:30
Issue Date 12-Jul-2022 17:55
Amendment 0

Client Sample ID			RG_FOBCP_WS_LAE MP_FRO_2022-06_NP	RG_FRUPO_WS_LAE MP_FRO_2022-06_NP	RG_FRGHSC_WS_LAE EMP_FRO_2022- 06_NP	RG_RIVER_WS_LAE MP_FRO_2022-06_NP	RG_TRIP_WS_LAEM P_FRO_2022-06_NP	RG_FBLANK_WS_LA EMP_FRO_2022- 06_NP
Date Sampled			29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022
Time Sampled			08:15	10:00	11:30	10:00	10:00	10:00
ALS Sample ID			CG2208562-004	CG2208562-005	CG2208562-006	CG2208562-007	CG2208562-009	CG2208562-010
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Dissolved Metals (Matrix: Water)								
aluminum, dissolved	0.0010	mg/L	0.0027	0.0024	<0.0010	0.0028		<0.0010
antimony, dissolved	0.00010	mg/L	0.00016	0.00015	0.00011	0.00015		<0.00010
arsenic, dissolved	0.00010	mg/L	0.00011	<0.00010	<0.00010	<0.00010		<0.00010
barium, dissolved	0.00010	mg/L	0.0332	0.0380	0.0712	0.0401		<0.00010
beryllium, dissolved	0.020	µg/L	<0.020	<0.020	<0.020	<0.020		<0.020
bismuth, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050
boron, dissolved	0.010	mg/L	<0.010	<0.010	0.014	<0.010		<0.010
cadmium, dissolved	0.0050	µg/L	0.0665	0.0633	0.0301	0.0654		<0.0050
calcium, dissolved	0.050	mg/L	68.8	75.4	123	77.7	<0.050	<0.050
chromium, dissolved	0.00010	mg/L	<0.00010	<0.00010	0.00011	<0.00010		<0.00010
cobalt, dissolved	0.10	µg/L	<0.10	<0.10	<0.10	<0.10		<0.10
copper, dissolved	0.00020	mg/L	0.00026	0.00021	0.00101	0.00021		<0.00020
iron, dissolved	0.010	mg/L	<0.010	<0.010	<0.010	<0.010		<0.010
lead, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050
lithium, dissolved	0.0010	mg/L	0.0239	0.0266	0.0539	0.0274		<0.0010
magnesium, dissolved	0.0050	mg/L	27.6	31.3	61.1	33.0	<0.0050	<0.0050
manganese, dissolved	0.00010	mg/L	0.00108	0.00096	0.00011	0.00102		<0.00010
mercury, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050
molybdenum, dissolved	0.000050	mg/L	0.00134	0.00130	0.000893	0.00132		<0.000050
nickel, dissolved	0.00050	mg/L	0.00296	0.00247	<0.00050	0.00259		<0.00050
potassium, dissolved	0.050	mg/L	1.21	1.36	2.42	1.39	<0.050	<0.050
selenium, dissolved	0.050	µg/L	31.6	37.6	82.2	38.8		<0.050
silicon, dissolved	0.050	mg/L	1.52	1.56	1.97	1.59		<0.050
silver, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010
sodium, dissolved	0.050	mg/L	1.49	1.77	3.73	1.82	<0.050	<0.050
strontium, dissolved	0.00020	mg/L	0.0825	0.0890	0.129	0.0890		<0.00020
sulfur, dissolved	0.50	mg/L	36.6	43.5	85.1	43.3		<0.50
thallium, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010
tin, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010
titanium, dissolved	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030		<0.00030
uranium, dissolved	0.000010	mg/L	0.00170	0.00194	0.00336	0.00194		<0.000010
vanadium, dissolved	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050
zinc, dissolved	0.0010	mg/L	0.0030	0.0026	<0.0010	0.0028		<0.0010
dissolved mercury filtration location			Field	Field	Field	Field		Field
dissolved metals filtration location			Field	Field	Field	Field	Laboratory	Field

Qualifier Legend

DTC Dissolved concentration exceeds total. Results were confirmed by re-analysis.
RRV Reported result verified by repeat analysis.
TKNI TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.

Results Summary CG2212410

Project REGIONAL EFFECTS PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 13-Sep-2022 09:11
Issue Date 15-Sep-2022 15:28
Amendment 0

Client Sample ID			RG_FO22_WS_LAEMP_FRO_2022-09_N
Date Sampled			09-Sep-2022
Time Sampled			14:00
ALS Sample ID			CG2212410-001
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water
Physical Tests (Matrix: Water)			
conductivity	2.0	µS/cm	1040
acidity (as CaCO3)	2.0	mg/L	<2.0
alkalinity, bicarbonate (as CaCO3)	1.0	mg/L	241
alkalinity, bicarbonate (as HCO3)	1.0	mg/L	294
alkalinity, carbonate (as CO3)	1.0	mg/L	<1.0
alkalinity, carbonate (as CaCO3)	1.0	mg/L	<1.0
alkalinity, hydroxide (as CaCO3)	1.0	mg/L	<1.0
alkalinity, hydroxide (as OH)	1.0	mg/L	<1.0
alkalinity, total (as CaCO3)	1.0	mg/L	241
hardness (as CaCO3), dissolved	0.50	mg/L	595
oxidation-reduction potential [ORP]	0.10	mV	338
pH	0.10	pH units	8.25
solids, total dissolved [TDS]	10	mg/L	846
solids, total suspended [TSS]	1.0	mg/L	1.3
turbidity	0.10	NTU	0.22
Anions and Nutrients (Matrix: Water)			
Kjeldahl nitrogen, total [TKN]	0.050	mg/L	0.935
ammonia, total (as N)	0.0050	mg/L	<0.0050
bromide	0.050	mg/L	<0.250
chloride	0.10	mg/L	4.37
fluoride	0.020	mg/L	0.157
nitrate (as N)	0.0050	mg/L	20.8
nitrite (as N)	0.0010	mg/L	0.0088
phosphate, ortho-, dissolved (as P)	0.0010	mg/L	<0.0010
phosphorus, total	0.0020	mg/L	0.0036
sulfate (as SO4)	0.30	mg/L	330
Organic / Inorganic Carbon (Matrix: Water)			
carbon, dissolved organic [DOC]	0.50	mg/L	0.51
carbon, total organic [TOC]	0.50	mg/L	0.54
Ion Balance (Matrix: Water)			
anion sum	0.10	meq/L	13.3
cation sum	0.10	meq/L	12.1
ion balance (APHA)	0.010	%	4.72
ion balance (cations/anions)	0.010	%	91.0

Results Summary CG2212410

Project REGIONAL EFFECTS PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 13-Sep-2022 09:11
Issue Date 15-Sep-2022 15:28
Amendment 0

Client Sample ID			RG_FO22_WS_LAEMP_FRO_2022-09_N
Date Sampled			09-Sep-2022
Time Sampled			14:00
ALS Sample ID			CG2212410-001
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water
Total Metals (Matrix: Water)			
aluminum, total	0.0030	mg/L	0.0049
antimony, total	0.00010	mg/L	0.00014
arsenic, total	0.00010	mg/L	0.00010
barium, total	0.00010	mg/L	0.0972
beryllium, total	0.020	µg/L	<0.020
bismuth, total	0.000050	mg/L	<0.000050
boron, total	0.010	mg/L	0.012
cadmium, total	0.0050	µg/L	0.0465
calcium, total	0.050	mg/L	136
chromium, total	0.00010	mg/L	0.00011
cobalt, total	0.10	µg/L	<0.10
copper, total	0.00050	mg/L	<0.00050
iron, total	0.010	mg/L	0.012
lead, total	0.000050	mg/L	<0.000050
lithium, total	0.0010	mg/L	0.0544
magnesium, total	0.0050	mg/L	68.3
manganese, total	0.00010	mg/L	0.00330
mercury, total	0.0000050	mg/L	<0.0000050
molybdenum, total	0.000050	mg/L	0.00181
nickel, total	0.00050	mg/L	0.00174
potassium, total	0.050	mg/L	1.99
selenium, total	0.050	µg/L	84.6
silicon, total	0.10	mg/L	2.16
silver, total	0.000010	mg/L	<0.000010
sodium, total	0.050	mg/L	3.81
strontium, total	0.00020	mg/L	0.172
sulfur, total	0.50	mg/L	109
thallium, total	0.000010	mg/L	<0.000010
tin, total	0.00010	mg/L	<0.00010
titanium, total	0.00030	mg/L	<0.00030
uranium, total	0.000010	mg/L	0.00364
vanadium, total	0.00050	mg/L	<0.00050
zinc, total	0.0030	mg/L	<0.0030

Results Summary CG2212410

Project REGIONAL EFFECTS PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 13-Sep-2022 09:11
Issue Date 15-Sep-2022 15:28
Amendment 0

Client Sample ID			RG_FO22_WS_LAEMP_FRO_2022-09_N
Date Sampled			09-Sep-2022
Time Sampled			14:00
ALS Sample ID			CG2212410-001
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water
Dissolved Metals (Matrix: Water)			
aluminum, dissolved	0.0010	mg/L	<0.0010
antimony, dissolved	0.00010	mg/L	0.00015
arsenic, dissolved	0.00010	mg/L	<0.00010
barium, dissolved	0.00010	mg/L	0.0857
beryllium, dissolved	0.020	µg/L	<0.020
bismuth, dissolved	0.000050	mg/L	<0.000050
boron, dissolved	0.010	mg/L	0.012
cadmium, dissolved	0.0050	µg/L	0.0349
calcium, dissolved	0.050	mg/L	134
chromium, dissolved	0.00010	mg/L	<0.00010
cobalt, dissolved	0.10	µg/L	<0.10
copper, dissolved	0.00020	mg/L	0.00022
iron, dissolved	0.010	mg/L	<0.010
lead, dissolved	0.000050	mg/L	<0.000050
lithium, dissolved	0.0010	mg/L	0.0479
magnesium, dissolved	0.0050	mg/L	63.3
manganese, dissolved	0.00010	mg/L	0.00333
mercury, dissolved	0.0000050	mg/L	<0.0000050
molybdenum, dissolved	0.000050	mg/L	0.00188
nickel, dissolved	0.00050	mg/L	0.00157
potassium, dissolved	0.050	mg/L	2.06
selenium, dissolved	0.050	µg/L	102
silicon, dissolved	0.050	mg/L	2.36
silver, dissolved	0.000010	mg/L	<0.000010
sodium, dissolved	0.050	mg/L	3.79
strontium, dissolved	0.00020	mg/L	0.182
sulfur, dissolved	0.50	mg/L	110
thallium, dissolved	0.000010	mg/L	<0.000010
tin, dissolved	0.00010	mg/L	<0.00010
titanium, dissolved	0.00030	mg/L	<0.00030
uranium, dissolved	0.000010	mg/L	0.00404
vanadium, dissolved	0.00050	mg/L	<0.00050
zinc, dissolved	0.0010	mg/L	<0.0010
dissolved mercury filtration location			Field
dissolved metals filtration location			Field

Qualifier Legend

DLDS Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
HTA Analytical holding time was exceeded.
TKNI TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.

Results Summary CG2212555

Project REGIONAL EFFECTS PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 14-Sep-2022 09:00
Issue Date 03-Oct-2022 14:13
Amendment 1

Client Sample ID			RG_FOUSH_WS_LAEMP_FRO _2022-09_N	RG_MP1_WS_LAEMP_FRO_20 22-09_N	RG_HENUP_WS_LAEMP_FRO _2022-09_N
Date Sampled			12-Sep-2022	12-Sep-2022	12-Sep-2022
Time Sampled			09:00	13:00	09:30
ALS Sample ID			CG2212555-001	CG2212555-002	CG2212555-003
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Physical Tests (Matrix: Water)					
conductivity	2.0	µS/cm	961	951	281
acidity (as CaCO3)	2.0	mg/L	<2.0	<2.0	<2.0
alkalinity, bicarbonate (as CaCO3)	1.0	mg/L	203	206	115
alkalinity, bicarbonate (as HCO3)	1.0	mg/L	248	251	140
alkalinity, carbonate (as CO3)	1.0	mg/L	<1.0	<1.0	<1.0
alkalinity, carbonate (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0
alkalinity, hydroxide (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0
alkalinity, hydroxide (as OH)	1.0	mg/L	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	1.0	mg/L	203	206	115
hardness (as CaCO3), dissolved	0.50	mg/L	555	554	152
oxidation-reduction potential [ORP]	0.10	mV	312	314	312
pH	0.10	pH units	8.16	8.19	8.17
solids, total dissolved [TDS]	10	mg/L	773	769	193
solids, total suspended [TSS]	1.0	mg/L	1.7	1.1	<1.0
turbidity	0.10	NTU	0.38	0.37	0.14
Anions and Nutrients (Matrix: Water)					
Kjeldahl nitrogen, total [TKN]	0.050	mg/L	2.23	3.13	0.661
ammonia, total (as N)	0.0050	mg/L	<0.0050	<0.0050	<0.0050
bromide	0.050	mg/L	<0.250	<0.250	<0.050
chloride	0.10	mg/L	1.26	1.06	1.51
fluoride	0.020	mg/L	0.180	0.199	0.360
nitrate (as N)	0.0050	mg/L	22.8	22.8	0.227
nitrite (as N)	0.0010	mg/L	0.0100	0.0110	0.0013
phosphate, ortho-, dissolved (as P)	0.0010	mg/L	<0.0010	<0.0010	<0.0010
phosphorus, total	0.0020	mg/L	0.0022	0.0021	<0.0020
sulfate (as SO4)	0.30	mg/L	310	300	52.8
Organic / Inorganic Carbon (Matrix: Water)					
carbon, dissolved organic [DOC]	0.50	mg/L	0.61	0.63	<0.50
carbon, total organic [TOC]	0.50	mg/L	0.67	<0.50	<0.50
Ion Balance (Matrix: Water)					
anion sum	0.10	meq/L	12.2	12.0	3.48
cation sum	0.10	meq/L	11.2	11.2	3.07
ion balance (APHA)	0.010	%	4.27	3.45	6.26
ion balance (cations/anions)	0.010	%	91.8	93.3	88.2
Total Metals (Matrix: Water)					
aluminum, total	0.0030	mg/L	0.0054	0.0050	0.0038
antimony, total	0.00010	mg/L	0.00026	0.00024	<0.00010
arsenic, total	0.00010	mg/L	0.00010	0.00012	0.00011
barium, total	0.00010	mg/L	0.0851	0.0812	0.0124
beryllium, total	0.020	µg/L	<0.020	<0.020	<0.020
bismuth, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050
boron, total	0.010	mg/L	0.012	0.012	<0.010
cadmium, total	0.0050	µg/L	0.0780	0.0654	<0.0050
calcium, total	0.050	mg/L	121	121	41.5
chromium, total	0.00010	mg/L	0.00010	<0.00010	0.00016
cobalt, total	0.10	µg/L	<0.10	<0.10	<0.10
copper, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050
iron, total	0.010	mg/L	0.032	<0.010	<0.010
lead, total	0.000050	mg/L	0.000106	<0.000050	<0.000050
lithium, total	0.0010	mg/L	0.0654	0.0687	0.0011
magnesium, total	0.0050	mg/L	60.8	60.6	11.0
manganese, total	0.00010	mg/L	0.0108	0.00116	<0.00010
mercury, total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050
molybdenum, total	0.000050	mg/L	0.00135	0.00134	0.000598
nickel, total	0.00050	mg/L	0.00800	0.00905	<0.00050
potassium, total	0.050	mg/L	2.10	2.06	0.193
selenium, total	0.050	µg/L	75.8	77.2	1.32
silicon, total	0.10	mg/L	2.05	2.00	1.21
silver, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010
sodium, total	0.050	mg/L	3.03	3.10	0.337
strontium, total	0.00020	mg/L	0.193	0.191	0.137
sulfur, total	0.50	mg/L	112	109	18.9
thallium, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010
tin, total	0.00010	mg/L	<0.00010	<0.00010	<0.00010
titanium, total	0.00030	mg/L	<0.00030	<0.00030	<0.00030
uranium, total	0.000010	mg/L	0.00412	0.00423	0.000881
vanadium, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050
zinc, total	0.0030	mg/L	0.0051	0.0042	<0.0030

Results Summary CG2212555

Project REGIONAL EFFECTS PROGRAM
 Report To Mike Pope, Teck Coal Limited
 Date Received 14-Sep-2022 09:00
 Issue Date 03-Oct-2022 14:13
 Amendment 1

Client Sample ID			RG_FOUSH_WS_LAEMP_FRO _2022-09_N	RG_MP1_WS_LAEMP_FRO_20 22-09_N	RG_HENUP_WS_LAEMP_FRO _2022-09_N
Date Sampled			12-Sep-2022	12-Sep-2022	12-Sep-2022
Time Sampled			09:00	13:00	09:30
ALS Sample ID			CG2212555-001	CG2212555-002	CG2212555-003
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Dissolved Metals (Matrix: Water)					
aluminum, dissolved	0.0010	mg/L	0.0012	0.0013	0.0018
antimony, dissolved	0.00010	mg/L	0.00023	0.00024	<0.00010
arsenic, dissolved	0.00010	mg/L	0.00012	0.00011	<0.00010
barium, dissolved	0.00010	mg/L	0.0815	0.0798	0.0125
beryllium, dissolved	0.020	µg/L	<0.020	<0.020	<0.020
bismuth, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050
boron, dissolved	0.010	mg/L	0.013	0.013	<0.010
cadmium, dissolved	0.0050	µg/L	0.0700	0.0676	0.0058
calcium, dissolved	0.050	mg/L	125	125	43.3
chromium, dissolved	0.00010	mg/L	<0.00010	<0.00010	0.00012
cobalt, dissolved	0.10	µg/L	<0.10	<0.10	<0.10
copper, dissolved	0.00020	mg/L	<0.00020	0.00024	<0.00020
iron, dissolved	0.010	mg/L	0.031	<0.010	<0.010
lead, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050
lithium, dissolved	0.0010	mg/L	0.0715	0.0738	<0.0010
magnesium, dissolved	0.0050	mg/L	58.9	58.7	10.8
manganese, dissolved	0.00010	mg/L	0.0114	0.00118	<0.00010
mercury, dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050
molybdenum, dissolved	0.000050	mg/L	0.00126	0.00129	0.000590
nickel, dissolved	0.00050	mg/L	0.00736	0.00832	<0.00050
potassium, dissolved	0.050	mg/L	1.97	2.01	0.196
selenium, dissolved	0.050	µg/L	82.5	83.7	1.21
silicon, dissolved	0.050	mg/L	2.09	2.13	1.24
silver, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010
sodium, dissolved	0.050	mg/L	2.85	2.88	0.323
strontium, dissolved	0.00020	mg/L	0.184	0.187	0.134
sulfur, dissolved	0.50	mg/L	117	117	20.2
thallium, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010
tin, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010
titanium, dissolved	0.00030	mg/L	<0.00030	<0.00030	<0.00030
uranium, dissolved	0.000010	mg/L	0.00365	0.00375	0.000799
vanadium, dissolved	0.00050	mg/L	<0.00050	<0.00050	<0.00050
zinc, dissolved	0.0010	mg/L	0.0036	0.0041	0.0014
dissolved mercury filtration location			Field	Field	Field
dissolved metals filtration location			Field	Field	Field

Qualifier Legend

DLDS Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
 HTD Hold time exceeded for re-analysis or dilution, but initial testing was conducted within hold time.
 TKNI TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.

Results Summary CG2212630

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 15-Sep-2022 08:50
Issue Date 17-Jan-2023 14:20
Amendment 1

Client Sample ID			RG_FOUKI_WS_LAE MP_FRO_2022-09_N	RG_SCOUTDS_WS_ LAEMP_FRO_2022- 09_N	RG_FOBKS_WS_LAE MP_FRO_2022-09_N	RG_FBLANK_WS_LA EMP_FRO_2022- 09_NP	RG_RIVER_WS_LAE MP_FRO_2022- 09_NP	RG_TRIP_WS_LAEM P_FRO_2022-09_NP
Date Sampled			13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022
Time Sampled			08:15	15:00	11:30	15:30	11:30	15:30
ALS Sample ID			CG2212630-001	CG2212630-002	CG2212630-003	CG2212630-004	CG2212630-005	CG2212630-006
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Physical Tests (Matrix: Water)								
Conductivity	2.0	µS/cm	948	1150	944	<2.0	941	<2.0
Acidity (as CaCO3)	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, bicarbonate (as CaCO3)	1.0	mg/L	219	226	205	<1.0	178	<1.0
Alkalinity, bicarbonate (as HCO3)	1.0	mg/L	267	276	250	<1.0	217	<1.0
Alkalinity, carbonate (as CO3)	1.0	mg/L	1.7	8.2	<1.0	<1.0	<1.0	<1.0
Alkalinity, carbonate (as CaCO3)	1.0	mg/L	2.8	13.6	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as OH)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO3)	1.0	mg/L	222	240	205	<1.0	178	<1.0
Hardness (as CaCO3), dissolved	0.50	mg/L	543	666	480	<0.50	532	<0.50
Oxidation-reduction potential [ORP]	0.10	mV	325	326	326	423	327	459
Solids, total dissolved [TDS]	10	mg/L	712	902	730	<10	715	<10
Solids, total suspended [TSS]	1.0	mg/L	1.0	1.8	1.4	<1.0	10.3	<1.0
Turbidity	0.10	NTU	0.45	0.40	0.56	<0.10	2.10	<0.10
pH	0.10	pH units	8.30	8.41	8.26	5.47	8.27	5.47
Anions and Nutrients (Matrix: Water)								
Ammonia, total (as N)	0.0050	mg/L	0.0052	<0.0050	<0.0050	<0.0050	<0.0050	0.0287
Bromide	0.050	mg/L	<0.250	<0.250	<0.250	<0.050	<0.050	<0.050
Chloride	0.10	mg/L	1.42	7.61	1.32	<0.10	1.16	<0.10
Fluoride	0.020	mg/L	0.192	0.191	0.189	<0.020	0.192	<0.020
Kjeldahl nitrogen, total [TKN]	0.050	mg/L	2.52	2.56	2.59	<0.050	2.10	<0.050
Nitrate (as N)	0.0050	mg/L	21.2	19.4	21.6	<0.0050	21.4	<0.0050
Nitrite (as N)	0.0010	mg/L	0.0071	0.0122	0.0105	<0.0010	0.0095	<0.0010
Phosphate, ortho-, dissolved (as P)	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus, total	0.0020	mg/L	0.0023	0.0086	<0.0020	<0.0020	0.0139	<0.0020
Sulfate (as SO4)	0.30	mg/L	293	390	295	<0.30	289	<0.30
Organic / Inorganic Carbon (Matrix: Water)								
Carbon, dissolved organic [DOC]	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon, total organic [TOC]	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ion Balance (Matrix: Water)								
Anion sum	0.10	meq/L	12.1	14.5	11.8	<0.10	11.1	<0.10
Cation sum	0.10	meq/L	11.0	13.6	9.76	<0.10	10.8	<0.10
Ion balance (APHA)	0.010	%	4.76	3.20	9.46	<0.010	1.37	<0.010
Ion balance (cations/anions)	0.010	%	90.9	93.8	82.7	100	97.3	100
Total Metals (Matrix: Water)								
Aluminum, total	0.0030	mg/L	0.0070	0.0069	0.0072	<0.0030	0.0065	<0.0030
Antimony, total	0.00010	mg/L	0.00024	0.00022	0.00023	<0.00010	0.00024	<0.00010
Arsenic, total	0.00010	mg/L	0.00019	0.00019	0.00019	<0.00010	0.00022	<0.00010
Barium, total	0.00010	mg/L	0.0873	0.0791	0.0820	<0.00010	0.0826	<0.00010
Beryllium, total	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Bismuth, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron, total	0.010	mg/L	0.014	0.014	0.014	<0.010	0.014	<0.010
Cadmium, total	0.0050	µg/L	0.0420	0.0462	0.0594	<0.0050	0.0057	<0.0050
Calcium, total	0.050	mg/L	120	133	115	<0.050	114	<0.050
Chromium, total	0.00010	mg/L	0.00011	<0.00010	0.00011	<0.00010	<0.00010	<0.00010
Cobalt, total	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Copper, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Iron, total	0.010	mg/L	0.012	0.018	0.030	<0.010	0.015	<0.010
Lead, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium, total	0.0010	mg/L	0.0675	0.0708	0.0666	<0.0010	0.0654	<0.0010
Magnesium, total	0.0050	mg/L	59.8	79.0	56.0	<0.0050	57.4	<0.0050
Manganese, total	0.00010	mg/L	0.00786	0.00695	0.00741	<0.00010	0.00603	<0.00010
Mercury, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Molybdenum, total	0.000050	mg/L	0.00133	0.00578	0.00127	<0.000050	0.00132	<0.000050
Nickel, total	0.00050	mg/L	0.00645	0.00654	0.00608	<0.00050	0.00605	<0.00050
Potassium, total	0.050	mg/L	2.17	2.50	1.99	<0.050	2.08	<0.050
Selenium, total	0.050	µg/L	67.4	67.4	67.9	<0.050	70.0	<0.050
Silicon, total	0.10	mg/L	2.17	2.10	1.92	<0.10	2.09	<0.10
Silver, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium, total	0.050	mg/L	3.00	5.10	2.88	<0.050	2.95	<0.050
Strontium, total	0.00020	mg/L	0.186	0.176	0.176	<0.00020	0.178	<0.00020
Sulfur, total	0.50	mg/L	114	151	106	<0.50	114	<0.50
Thallium, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin, total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium, total	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium, total	0.000010	mg/L	0.00384	0.00454	0.00378	<0.000010	0.00383	<0.000010
Vanadium, total	0.00050	mg/L	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250	<0.00050
Zinc, total	0.0030	mg/L	0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Results Summary CG2212630

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 15-Sep-2022 08:50
Issue Date 17-Jan-2023 14:20
Amendment 1

Client Sample ID			RG_FOUKI_WS_LAE MP_FRO_2022-09_N	RG_SCOUTDS_WS_ LAEMP_FRO_2022- 09_N	RG_FOBKS_WS_LAE MP_FRO_2022-09_N	RG_FBLANK_WS_LA EMP_FRO_2022- 09_NP	RG_RIVER_WS_LAE MP_FRO_2022- 09_NP	RG_TRIP_WS_LAEM P_FRO_2022-09_NP
Date Sampled			13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022
Time Sampled			08:15	15:00	11:30	15:30	11:30	15:30
ALS Sample ID			CG2212630-001	CG2212630-002	CG2212630-003	CG2212630-004	CG2212630-005	CG2212630-006
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Dissolved Metals (Matrix: Water)								
Aluminum, dissolved	0.0010	mg/L	<0.0010	0.0010	0.0016	<0.0010	<0.0010	
Antimony, dissolved	0.00010	mg/L	0.00023	0.00024	0.00020	<0.00010	0.00023	
Arsenic, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Barium, dissolved	0.00010	mg/L	0.0874	0.0796	0.0844	<0.00010	0.0856	
Beryllium, dissolved	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
Bismuth, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Boron, dissolved	0.010	mg/L	0.013	0.015	0.012	<0.010	0.014	
Cadmium, dissolved	0.0050	µg/L	0.0677	0.0481	0.0577	<0.0050	0.0085	
Calcium, dissolved	0.050	mg/L	121	141	101	<0.050	117	<0.050
Chromium, dissolved	0.00010	mg/L	<0.00010	<0.00010	0.00010	<0.00010	<0.00010	
Cobalt, dissolved	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	
Copper, dissolved	0.00020	mg/L	<0.00020	0.00021	<0.00020	<0.00020	<0.00020	
Iron, dissolved	0.010	mg/L	0.012	0.012	0.019	<0.010	0.011	
Lead, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Lithium, dissolved	0.0010	mg/L	0.0717	0.0802	0.0627	<0.0010	0.0723	
Magnesium, dissolved	0.0050	mg/L	58.5	76.2	55.3	<0.0050	58.3	<0.0050
Manganese, dissolved	0.00010	mg/L	0.00880	0.00783	0.00680	<0.00010	0.00536	
Mercury, dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Molybdenum, dissolved	0.000050	mg/L	0.00132	0.00633	0.00115	<0.000050	0.00136	
Nickel, dissolved	0.00050	mg/L	0.00656	0.00637	0.00604	<0.00050	0.00607	
Potassium, dissolved	0.050	mg/L	2.22	2.48	2.05	<0.050	2.16	<0.050
Selenium, dissolved	0.050	µg/L	79.4	80.0	76.4	<0.050	82.4	
Silicon, dissolved	0.050	mg/L	2.14	2.09	2.00	<0.050	2.09	
Silver, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Sodium, dissolved	0.050	mg/L	3.03	4.95	2.84	<0.050	2.96	<0.050
Strontium, dissolved	0.00020	mg/L	0.187	0.194	0.157	<0.00020	0.188	
Sulfur, dissolved	0.50	mg/L	104	138	98.8	<0.50	101	
Thallium, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Tin, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Titanium, dissolved	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
Uranium, dissolved	0.000010	mg/L	0.00396	0.00515	0.00332	<0.000010	0.00406	
Vanadium, dissolved	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Zinc, dissolved	0.0010	mg/L	0.0028	0.0016	0.0024	<0.0010	<0.0010	
Dissolved mercury filtration location			Field	Field	Field	Field	Field	
Dissolved metals filtration location			Field	Field	Field	Field	Field	Laboratory

Qualifier Legend

DLB Detection Limit Raised. Analyte detected at comparable level in Method Blank.
DLDS Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DTC Dissolved concentration exceeds total. Results were confirmed by re-analysis.
RRV Reported result verified by repeat analysis.
TKNI TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.

Results Summary CG2212662

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 16-Sep-2022 08:50
Issue Date 20-Sep-2022 19:10
Amendment 0

Client Sample ID			RG_FRSC2_WS_LA EMP_FRO_2022-09_N	RG_RIVER2_WS_LAE MP_FRO_2022-09_N	RG_FBLANK2_WS_L AEMP_FRO_2022- 09_N	RG_FOBSC_WS_LAE MP_FRO_2022-09_N
Date Sampled			14-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022
Time Sampled			13:00	13:00	13:00	10:00
ALS Sample ID			CG2212662-001	CG2212662-002	CG2212662-003	CG2212662-004
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Physical Tests (Matrix: Water)						
conductivity	2.0	µS/cm	1060	1080	<2.0	1190
acidity (as CaCO3)	2.0	mg/L	4.7	4.7	<2.0	<2.0
alkalinity, bicarbonate (as CaCO3)	1.0	mg/L	234	247	<1.0	251
alkalinity, bicarbonate (as HCO3)	1.0	mg/L	285	301	<1.0	306
alkalinity, carbonate (as CO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0
alkalinity, carbonate (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as OH)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	1.0	mg/L	234	247	<1.0	251
hardness (as CaCO3), dissolved	0.50	mg/L	594	585	<0.50	682
oxidation-reduction potential [ORP]	0.10	mV	279	284	485	285
pH	0.10	pH units	8.03	7.93	5.26	8.23
solids, total dissolved [TDS]	10	mg/L	811	820	<10	916
solids, total suspended [TSS]	1.0	mg/L	2.0	1.8	<1.0	2.1
turbidity	0.10	NTU	0.16	0.15	<0.10	0.30
Anions and Nutrients (Matrix: Water)						
Kjeldahl nitrogen, total [TKN]	0.050	mg/L	2.32	2.52	<0.050	2.80
ammonia, total (as N)	0.0050	mg/L	0.0053	0.0054	<0.0050	0.0064
bromide	0.050	mg/L	<0.250	<0.250	<0.050	<0.250
chloride	0.10	mg/L	4.24	4.24	<0.10	2.06
fluoride	0.020	mg/L	0.159	0.160	<0.020	0.179
nitrate (as N)	0.0050	mg/L	21.2	21.4	<0.0050	21.6
nitrite (as N)	0.0010	mg/L	0.0072	0.0069	<0.0010	0.0091
phosphate, ortho-, dissolved (as P)	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010
phosphorus, total	0.0020	mg/L	0.0031	0.0041	<0.0020	0.0037
sulfate (as SO4)	0.30	mg/L	364	363	<0.30	448
Organic / Inorganic Carbon (Matrix: Water)						
carbon, dissolved organic [DOC]	0.50	mg/L	<0.50	<0.50	<0.50	0.80
carbon, total organic [TOC]	0.50	mg/L	<0.50	0.56	<0.50	0.85
Ion Balance (Matrix: Water)						
anion sum	0.10	meq/L	13.9	14.1	<0.10	16.0
cation sum	0.10	meq/L	12.0	11.9	<0.10	13.8
ion balance (APHA)	0.010	%	7.34	8.46	<0.010	7.38
ion balance (cations/anions)	0.010	%	86.3	84.4	100	86.2

Results Summary CG2212662

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 16-Sep-2022 08:50
Issue Date 20-Sep-2022 19:10
Amendment 0

Client Sample ID			RG_FR SCH2_WS_LA EMP_FRO_2022-09_N	RG_RIVER2_WS_LAE MP_FRO_2022-09_N	RG_FBLANK2_WS_L AEMP_FRO_2022- 09_N	RG_FOBSC_WS_LAE MP_FRO_2022-09_N
Date Sampled			14-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022
Time Sampled			13:00	13:00	13:00	10:00
ALS Sample ID			CG2212662-001	CG2212662-002	CG2212662-003	CG2212662-004
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Total Metals (Matrix: Water)						
aluminum, total	0.0030	mg/L	0.0069	0.0075	<0.0030	0.0114
antimony, total	0.00010	mg/L	0.00022	0.00020	<0.00010	0.00030
arsenic, total	0.00010	mg/L	0.00014	0.00013	<0.00010	0.00014
barium, total	0.00010	mg/L	0.0826	0.0817	<0.00010	0.0757
beryllium, total	0.020	µg/L	<0.020	<0.020	<0.020	<0.020
bismuth, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	0.010	mg/L	0.014	0.014	<0.010	0.013
cadmium, total	0.0050	µg/L	0.0500	0.0370	<0.0050	0.198
calcium, total	0.050	mg/L	148	143	<0.050	156
chromium, total	0.00010	mg/L	0.00015	<0.00010	<0.00010	0.00011
cobalt, total	0.10	µg/L	<0.10	<0.10	<0.10	0.14
copper, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
iron, total	0.010	mg/L	<0.010	0.014	<0.010	0.034
lead, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050
lithium, total	0.0010	mg/L	0.0606	0.0568	<0.0010	0.0630
magnesium, total	0.0050	mg/L	75.0	73.6	<0.0050	89.4
manganese, total	0.00010	mg/L	0.00165	0.00182	<0.00010	0.00824
mercury, total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, total	0.000050	mg/L	0.00254	0.00243	<0.000050	0.00348
nickel, total	0.00050	mg/L	0.00254	0.00250	<0.00050	0.0116
potassium, total	0.050	mg/L	2.26	2.20	<0.050	2.32
selenium, total	0.050	µg/L	89.3	82.4	<0.050	117
silicon, total	0.10	mg/L	2.57	2.34	<0.10	2.25
silver, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	0.050	mg/L	3.74	3.67	<0.050	2.91
strontium, total	0.00020	mg/L	0.191	0.176	<0.00020	0.187
sulfur, total	0.50	mg/L	145	133	<0.50	167
thallium, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	0.000012
tin, total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030
uranium, total	0.000010	mg/L	0.00412	0.00388	<0.000010	0.00504
vanadium, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
zinc, total	0.0030	mg/L	<0.0030	<0.0030	<0.0030	0.0106
Dissolved Metals (Matrix: Water)						
aluminum, dissolved	0.0010	mg/L	<0.0010	0.0011	<0.0010	0.0010
antimony, dissolved	0.00010	mg/L	0.00012	0.00016	<0.00010	0.00028
arsenic, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
barium, dissolved	0.00010	mg/L	0.0699	0.0735	<0.00010	0.0712
beryllium, dissolved	0.020	µg/L	<0.020	<0.020	<0.020	<0.020
bismuth, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	0.010	mg/L	0.011	0.011	<0.010	0.011
cadmium, dissolved	0.0050	µg/L	0.0400	0.0402	<0.0050	0.184
calcium, dissolved	0.050	mg/L	130	129	<0.050	143
chromium, dissolved	0.00010	mg/L	0.00010	<0.00010	<0.00010	<0.00010
cobalt, dissolved	0.10	µg/L	<0.10	<0.10	<0.10	0.11
copper, dissolved	0.00020	mg/L	<0.00020	<0.00020	<0.00020	0.00024
iron, dissolved	0.010	mg/L	<0.010	<0.010	<0.010	0.015
lead, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050
lithium, dissolved	0.0010	mg/L	0.0570	0.0609	<0.0010	0.0662
magnesium, dissolved	0.0050	mg/L	65.3	63.8	<0.0050	78.9
manganese, dissolved	0.00010	mg/L	0.00062	0.00116	<0.00010	0.00653
mercury, dissolved	0.0000050	mg/L	<0.0000050		<0.0000050	<0.0000050
molybdenum, dissolved	0.000050	mg/L	0.00136	0.00231	<0.000050	0.00334
nickel, dissolved	0.00050	mg/L	0.00123	0.00212	<0.00050	0.0107
potassium, dissolved	0.050	mg/L	1.95	1.98	<0.050	2.09
selenium, dissolved	0.050	µg/L	87.9	80.9	<0.050	115
silicon, dissolved	0.050	mg/L	2.30	2.19	<0.050	2.07
silver, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	0.050	mg/L	3.40	3.42	<0.050	2.69
strontium, dissolved	0.00020	mg/L	0.172	0.176	<0.00020	0.188
sulfur, dissolved	0.50	mg/L	117	120	<0.50	117
thallium, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	0.000011
tin, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030
uranium, dissolved	0.000010	mg/L	0.00345	0.00378	<0.000010	0.00496
vanadium, dissolved	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
zinc, dissolved	0.0010	mg/L	<0.0010	0.0013	<0.0010	0.0099
dissolved mercury filtration location			Field		Field	Field
dissolved metals filtration location			Field	Field	Field	Field

Qualifier Legend

DLDS Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.

Results Summary CG2212823

Project REGIONAL EFFECTS PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 17-Sep-2022 11:38
Issue Date 17-Jan-2023 14:30
Amendment 1

Client Sample ID			RG_FOBCP_WS_LAE MP_FRO_2022-09_N	RG_KICK_WS_LAEM P_FRO_2022-09_N	RG_FOUNGD_WS_LA EMP_FRO_2022-09_N	RG_FODNGD_WS_LA EMP_FRO_2022-09_N	RG_FOUCL_WS_LAE MP_FRO_2022-09_N	RG_GRASSY_WS_LA EMP_FRO_2022-09_N	RG_FO26_WS_LAEM P_FRO_2022-09_N
Date Sampled			15-Sep-2022	15-Sep-2022	15-Sep-2022	15-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022
Time Sampled			11:20	14:00	08:30	13:45	11:30	08:00	11:30
ALS Sample ID			CG2212823-001	CG2212823-002	CG2212823-003	CG2212823-004	CG2212823-005	CG2212823-006	CG2212823-007
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Physical Tests (Matrix: Water)									
Conductivity	2.0	µS/cm	1020	2240	847	980	577	1960	333
Acidity (as CaCO3)	2.0	mg/L	<2.0	22.3	<2.0	<2.0	<2.0	3.1	<2.0
Alkalinity, bicarbonate (as CaCO3)	1.0	mg/L	208	536	186	189	165	293	141
Alkalinity, bicarbonate (as HCO3)	1.0	mg/L	254	654	227	230	202	358	172
Alkalinity, carbonate (as CO3)	1.0	mg/L	7.4	<1.0	<1.0	<1.0	<1.0	<1.0	2.3
Alkalinity, carbonate (as CaCO3)	1.0	mg/L	12.4	<1.0	<1.0	<1.0	<1.0	<1.0	3.8
Alkalinity, hydroxide (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as OH)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO3)	1.0	mg/L	220	536	186	189	165	293	145
Hardness (as CaCO3), dissolved	0.50	mg/L	651	1300	455	541	301	1090	174
Oxidation-reduction potential [ORP]	0.10	mV	275	281	284	290	290	298	299
Solids, total dissolved [TDS]	10	mg/L	866	1990	630	755	391	1740	206
Solids, total suspended [TSS]	1.0	mg/L	1.3	2.7	1.7	1.7	<1.0	10.5	<1.0
Turbidity	0.10	NTU	0.40	0.56	0.14	0.29	0.11	0.68	0.10
pH	0.10	pH units	8.33	7.46	8.09	8.19	8.05	8.06	8.32
Anions and Nutrients (Matrix: Water)									
Ammonia, total (as N)	0.0050	mg/L	<0.0050	<0.0050	<0.0050	0.0069	<0.0050	<0.0050	<0.0050
Bromide	0.050	mg/L	<0.250	<0.250	<0.050	<0.250	<0.050	<0.250	<0.050
Chloride	0.10	mg/L	6.32	1.42	0.66	0.84	0.23	3.04	0.14
Fluoride	0.020	mg/L	0.185	0.169	0.190	0.186	0.204	0.225	0.172
Kjeldahl nitrogen, total [TKN]	0.050	mg/L	1.72	2.86	1.59	2.24	<0.500	1.85	<0.500
Nitrate (as N)	0.0050	mg/L	18.9	82.0	17.4	25.3	5.08	74.1	0.0271
Nitrite (as N)	0.0010	mg/L	0.0067	<0.0050	0.0074	0.0131	0.0037	0.0071	<0.0010
Phosphate, ortho-, dissolved (as P)	0.0010	mg/L	0.0025	0.0015	0.0015	0.0016	0.0019	<0.0010	0.0024
Phosphorus, total	0.0020	mg/L	0.0074	<0.0020	0.0026	0.0042	<0.0020	0.0023	0.0028
Sulfate (as SO4)	0.30	mg/L	394	688	241	303	150	702	45.7
Organic / Inorganic Carbon (Matrix: Water)									
Carbon, dissolved organic [DOC]	0.50	mg/L	0.81	0.55	0.56	0.74	0.54	0.84	<0.50
Carbon, total organic [TOC]	0.50	mg/L	0.76	0.54	0.59	0.67	0.53	0.74	<0.50

Results Summary CG2212823

Project REGIONAL EFFECTS PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 17-Sep-2022 11:38
Issue Date 17-Jan-2023 14:30
Amendment 1

Client Sample ID			RG_FOBCP_WS_LAE MP_FRO_2022-09_N	RG_KICK_WS_LAEM P_FRO_2022-09_N	RG_FOUNGD_WS_LA EMP_FRO_2022-09_N	RG_FODNGD_WS_LA EMP_FRO_2022-09_N	RG_FOUCL_WS_LAE MP_FRO_2022-09_N	RG_GRASSY_WS_LA EMP_FRO_2022-09_N	RG_FO26_WS_LAEM P_FRO_2022-09_N
Date Sampled			15-Sep-2022	15-Sep-2022	15-Sep-2022	15-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022
Time Sampled			11:20	14:00	08:30	13:45	11:30	08:00	11:30
ALS Sample ID			CG2212823-001	CG2212823-002	CG2212823-003	CG2212823-004	CG2212823-005	CG2212823-006	CG2212823-007
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Ion Balance (Matrix: Water)									
Anion sum	0.10	meq/L	14.1	30.9	10.0	11.9	6.80	25.8	3.86
Cation sum	0.10	meq/L	13.3	26.5	9.23	11.0	6.07	22.4	3.50
Ion balance (APHA)	0.010	%	2.92	7.66	4.00	3.93	5.67	7.05	4.89
Ion balance (cations/anions)	0.010	%	94.3	85.8	92.3	92.4	89.3	86.8	90.7
Total Metals (Matrix: Water)									
Aluminum, total	0.0030	mg/L	0.0085	0.0037	0.0087	0.0280	0.0060	0.0040	0.0051
Antimony, total	0.00010	mg/L	0.00022	0.00049	0.00017	0.00022	<0.00010	0.00056	<0.00010
Arsenic, total	0.00010	mg/L	0.00012	0.00011	0.00012	0.00016	0.00011	0.00017	<0.00010
Barium, total	0.00010	mg/L	0.0807	0.0283	0.0727	0.0741	0.0682	0.0480	0.0428
Beryllium, total	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Bismuth, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron, total	0.010	mg/L	0.014	0.030	0.012	0.013	<0.010	0.028	<0.010
Cadmium, total	0.0050	µg/L	0.0607	1.22	0.0678	0.133	0.0270	0.0747	0.0072
Calcium, total	0.050	mg/L	134	299	101	117	71.6	236	46.2
Chromium, total	0.00010	mg/L	<0.00010	<0.00010	0.00012	0.00012	0.00012	<0.00010	0.00012
Cobalt, total	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Copper, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Iron, total	0.010	mg/L	0.024	<0.010	<0.010	0.055	<0.010	<0.010	<0.010
Lead, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	0.000073	<0.000050	<0.000050	<0.000050
Lithium, total	0.0010	mg/L	0.0703	0.226	0.0663	0.0641	0.0120	0.277	0.0023
Magnesium, total	0.0050	mg/L	71.0	145	44.3	54.9	27.2	131	13.3
Manganese, total	0.00010	mg/L	0.00468	0.00023	0.00076	0.00472	0.00071	0.00052	0.00019
Mercury, total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum, total	0.000050	mg/L	0.00473	0.00130	0.00104	0.00125	0.000783	0.00271	0.000678
Nickel, total	0.00050	mg/L	0.00544	0.0535	0.00612	0.00976	0.00144	0.00610	<0.00050
Potassium, total	0.050	mg/L	2.26	4.81	1.58	1.86	0.854	6.37	0.356
Selenium, total	0.050	µg/L	65.8	272	50.6	75.7	30.0	121	0.869
Silicon, total	0.10	mg/L	2.06	2.22	1.87	1.87	1.83	2.50	1.86
Silver, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium, total	0.050	mg/L	4.33	10.4	2.27	2.24	0.698	11.2	0.574
Strontium, total	0.00020	mg/L	0.180	0.297	0.165	0.167	0.116	0.389	0.104
Sulfur, total	0.50	mg/L	137	247	88.1	106	53.6	256	17.6
Thallium, total	0.000010	mg/L	<0.000010	0.000034	<0.000010	0.000010	<0.000010	<0.000010	<0.000010
Tin, total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium, total	0.00030	mg/L	<0.00030	<0.00030	<0.00030	0.00051	<0.00030	<0.00030	<0.00030
Uranium, total	0.000010	mg/L	0.00423	0.0126	0.00302	0.00349	0.00124	0.0114	0.000466
Vanadium, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	0.00054	<0.00050	<0.00050	<0.00050
Zinc, total	0.0030	mg/L	<0.0030	0.0236	0.0036	0.0083	<0.0030	0.0035	<0.0030

Results Summary CG2212823

Project REGIONAL EFFECTS PROGRAM
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Client Sample ID			RG_FOBCP_WS_LAE MP_FRO_2022-09_N	RG_KICK_WS_LAEM P_FRO_2022-09_N	RG_FOUNGD_WS_LA EMP_FRO_2022-09_N	RG_FODNGD_WS_LA EMP_FRO_2022-09_N	RG_FOUCL_WS_LAE MP_FRO_2022-09_N	RG_GRASSY_WS_LA EMP_FRO_2022-09_N	RG_FO26_WS_LAEM P_FRO_2022-09_N
Date Sampled			15-Sep-2022	15-Sep-2022	15-Sep-2022	15-Sep-2022	16-Sep-2022	16-Sep-2022	16-Sep-2022
Time Sampled			11:20	14:00	08:30	13:45	11:30	08:00	11:30
ALS Sample ID			CG2212823-001	CG2212823-002	CG2212823-003	CG2212823-004	CG2212823-005	CG2212823-006	CG2212823-007
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Dissolved Metals (Matrix: Water)									
Aluminum, dissolved	0.0010	mg/L	0.0014	<0.0020	0.0010	0.0019	0.0013	<0.0020	<0.0010
Antimony, dissolved	0.00010	mg/L	0.00023	0.00047	0.00018	0.00023	<0.00010	0.00054	<0.00010
Arsenic, dissolved	0.00010	mg/L	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010
Barium, dissolved	0.00010	mg/L	0.0871	0.0281	0.0799	0.0777	0.0740	0.0485	0.0457
Beryllium, dissolved	0.020	µg/L	<0.020	<0.040	<0.020	<0.020	<0.020	<0.040	<0.020
Bismuth, dissolved	0.000050	mg/L	<0.000050	<0.000100	<0.000050	<0.000050	<0.000050	<0.000100	<0.000050
Boron, dissolved	0.010	mg/L	0.014	0.032	0.012	0.012	<0.010	0.032	<0.010
Cadmium, dissolved	0.0050	µg/L	0.0704	1.21	0.0515	0.109	0.0269	0.0776	0.0088
Calcium, dissolved	0.050	mg/L	138	288	106	124	73.6	228	47.1
Chromium, dissolved	0.00010	mg/L	0.00013	<0.00020	<0.00010	<0.00010	0.00010	<0.00020	0.00011
Cobalt, dissolved	0.10	µg/L	<0.10	<0.20	<0.10	<0.10	<0.10	<0.20	<0.10
Copper, dissolved	0.00020	mg/L	0.00029	<0.00040	<0.00020	0.00021	<0.00020	<0.00040	<0.00020
Iron, dissolved	0.010	mg/L	<0.010	<0.020	<0.010	<0.010	<0.010	<0.020	<0.010
Lead, dissolved	0.000050	mg/L	<0.000050	<0.000100	<0.000050	<0.000050	<0.000050	<0.000100	<0.000050
Lithium, dissolved	0.0010	mg/L	0.0701	0.250	0.0703	0.0617	0.0116	0.312	0.0018
Magnesium, dissolved	0.0050	mg/L	74.5	141	46.2	56.3	28.5	127	13.6
Manganese, dissolved	0.00010	mg/L	0.00412	0.00022	0.00041	0.00091	0.00047	0.00025	<0.00010
Mercury, dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum, dissolved	0.000050	mg/L	0.00474	0.00130	0.00113	0.00136	0.000839	0.00254	0.000666
Nickel, dissolved	0.00050	mg/L	0.00525	0.0524	0.00614	0.00950	0.00133	0.00601	<0.00050
Potassium, dissolved	0.050	mg/L	2.28	4.63	1.61	1.87	0.859	6.14	0.369
Selenium, dissolved	0.050	µg/L	78.6	299	60.8	89.4	35.6	129	0.831
Silicon, dissolved	0.050	mg/L	2.00	2.01	1.86	1.91	1.84	2.20	1.86
Silver, dissolved	0.000010	mg/L	<0.000010	<0.000020	<0.000010	<0.000010	<0.000010	<0.000020	<0.000010
Sodium, dissolved	0.050	mg/L	4.41	9.61	2.25	2.20	0.694	10.2	0.567
Strontium, dissolved	0.00020	mg/L	0.187	0.290	0.171	0.179	0.122	0.377	0.109
Sulfur, dissolved	0.50	mg/L	135	225	87.6	106	52.1	231	16.5
Thallium, dissolved	0.000010	mg/L	<0.000010	0.000032	<0.000010	0.000010	<0.000010	<0.000020	<0.000010
Tin, dissolved	0.00010	mg/L	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010
Titanium, dissolved	0.00030	mg/L	<0.00030	<0.00060	<0.00030	<0.00030	<0.00030	<0.00060	<0.00030
Uranium, dissolved	0.000010	mg/L	0.00424	0.0114	0.00303	0.00359	0.00124	0.0110	0.000450
Vanadium, dissolved	0.00050	mg/L	<0.00050	<0.00100	<0.00050	<0.00050	<0.00050	<0.00100	<0.00050
Zinc, dissolved	0.0010	mg/L	0.0035	0.0249	0.0036	0.0065	0.0011	0.0031	<0.0010
Dissolved mercury filtration location			Field	Field	Field	Field	Field	Field	Field
Dissolved metals filtration location			Field	Field	Field	Field	Field	Field	Field

Qualifier Legend

DLDS Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
 DLM Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
 HTA Analytical holding time was exceeded.
 TKN TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.

Results Summary CG2212860

Project REGIONAL EFFECTS PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 20-Sep-2022 08:55
Issue Date 22-Sep-2022 18:57
Amendment 0

Client Sample ID			RG_FODPO_WS_LAEMP_FRO_2022-09_N	RG_FRGHSC_WS_LAEMP_FRO_2022-09_N	RG_FOUUEW_WS_LAEMP_FRO_2022-09_N	RG_FRUPO_WS_LAEMP_FRO_2022-09_N
Date Sampled			18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022
Time Sampled			10:15	14:15	14:45	09:00
ALS Sample ID			CG2212860-001	CG2212860-002	CG2212860-003	CG2212860-004
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Physical Tests (Matrix: Water)						
conductivity	2.0	µS/cm	1120	1100	986	1090
acidity (as CaCO3)	2.0	mg/L	2.6	3.5	<2.0	2.1
alkalinity, bicarbonate (as CaCO3)	1.0	mg/L	294	282	241	279
alkalinity, bicarbonate (as HCO3)	1.0	mg/L	358	344	294	341
alkalinity, carbonate (as CO3)	1.0	mg/L	<1.0	<1.0	1.1	<1.0
alkalinity, carbonate (as CaCO3)	1.0	mg/L	<1.0	<1.0	1.8	<1.0
alkalinity, hydroxide (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as OH)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	1.0	mg/L	294	282	242	279
hardness (as CaCO3), dissolved	0.50	mg/L	684	675	593	666
oxidation-reduction potential [ORP]	0.10	mV	292	294	296	296
pH	0.10	pH units	8.05	8.00	8.28	8.07
solids, total dissolved [TDS]	10	mg/L	866	856	782	832
solids, total suspended [TSS]	1.0	mg/L	2.6	<1.0	<1.0	<1.0
turbidity	0.10	NTU	0.24	0.18	0.13	0.12
Anions and Nutrients (Matrix: Water)						
Kjeldahl nitrogen, total [TKN]	0.050	mg/L	1.50	1.94	0.601	1.54
ammonia, total (as N)	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050
bromide	0.050	mg/L	<0.250	<0.250	<0.250	<0.250
chloride	0.10	mg/L	4.51	4.48	3.80	4.33
fluoride	0.020	mg/L	0.164	0.160	0.155	0.159
nitrate (as N)	0.0050	mg/L	21.0	23.6	19.0	23.5
nitrite (as N)	0.0010	mg/L	0.0057	<0.0050	0.0070	<0.0050
phosphate, ortho-, dissolved (as P)	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010
phosphorus, total	0.0020	mg/L	0.0027	0.0057	<0.0020	0.0024
sulfate (as SO4)	0.30	mg/L	349	299	286	298
Organic / Inorganic Carbon (Matrix: Water)						
carbon, dissolved organic [DOC]	0.50	mg/L	<0.50	<0.50	0.60	<0.50
carbon, total organic [TOC]	0.50	mg/L	<0.50	<0.50	<0.50	<0.50
Ion Balance (Matrix: Water)						
anion sum	0.10	meq/L	14.8	13.7	12.3	13.6
cation sum	0.10	meq/L	13.9	13.8	12.0	13.6
ion balance (APHA)	0.010	%	3.14	0.364	1.23	<0.010
ion balance (cations/anions)	0.010	%	93.9	101	97.6	100
Total Metals (Matrix: Water)						
aluminum, total	0.0030	mg/L	0.0052	0.0040	0.0057	0.0042
antimony, total	0.00010	mg/L	0.00014	0.00010	0.00011	0.00010
arsenic, total	0.00010	mg/L	0.00014	0.00014	0.00014	0.00015
barium, total	0.00010	mg/L	0.0848	0.0903	0.0917	0.0913
beryllium, total	0.020	µg/L	<0.020	<0.020	<0.020	<0.020
bismuth, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	0.010	mg/L	0.012	0.018	0.012	0.018
cadmium, total	0.0050	µg/L	0.0397	0.0331	0.0350	0.0372
calcium, total	0.050	mg/L	140	138	125	138
chromium, total	0.00010	mg/L	0.00019	0.00013	0.00012	0.00013
cobalt, total	0.10	µg/L	<0.10	<0.10	<0.10	<0.10
copper, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
iron, total	0.010	mg/L	<0.010	<0.010	0.011	<0.010
lead, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050
lithium, total	0.0010	mg/L	0.0496	0.0578	0.0401	0.0555
magnesium, total	0.0050	mg/L	72.5	69.7	62.6	68.3
manganese, total	0.00010	mg/L	0.00128	0.00018	0.00339	0.00049
mercury, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050
molybdenum, total	0.000050	mg/L	0.00218	0.000824	0.00143	0.000778
nickel, total	0.00050	mg/L	0.00217	<0.00050	0.00123	<0.00050
potassium, total	0.050	mg/L	2.19	2.77	1.95	2.65
selenium, total	0.050	µg/L	77.5	89.3	71.3	88.6
silicon, total	0.10	mg/L	2.18	2.15	2.01	2.12
silver, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	0.050	mg/L	3.73	4.40	3.46	4.31
strontium, total	0.00020	mg/L	0.175	0.158	0.162	0.160
sulfur, total	0.50	mg/L	124	104	101	103
thallium, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010
tin, total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030
uranium, total	0.000010	mg/L	0.00358	0.00389	0.00304	0.00367
vanadium, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
zinc, total	0.0030	mg/L	<0.0030	<0.0030	<0.0030	<0.0030

Results Summary CG2212860

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Amendment 0

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Date Sampled			18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022
Time Sampled			10:15	14:15	14:45	09:00
ALS Sample ID			CG2212860-001	CG2212860-002	CG2212860-003	CG2212860-004
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Dissolved Metals (Matrix: Water)						
aluminum, dissolved	0.0010	mg/L	0.0010	<0.0010	0.0011	<0.0010
antimony, dissolved	0.00010	mg/L	0.00016	0.00012	0.00012	0.00012
arsenic, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
barium, dissolved	0.00010	mg/L	0.0884	0.0960	0.0949	0.0971
beryllium, dissolved	0.020	µg/L	<0.020	<0.020	<0.020	<0.020
bismuth, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	0.010	mg/L	0.015	0.021	0.014	0.020
cadmium, dissolved	0.0050	µg/L	0.0372	0.0337	0.0389	0.0362
calcium, dissolved	0.050	mg/L	156	156	138	154
chromium, dissolved	0.00010	mg/L	0.00012	0.00013	0.00013	0.00010
cobalt, dissolved	0.10	µg/L	<0.10	<0.10	<0.10	<0.10
copper, dissolved	0.00020	mg/L	<0.00020	<0.00020	0.00028	0.00023
iron, dissolved	0.010	mg/L	<0.010	<0.010	<0.010	<0.010
lead, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050
lithium, dissolved	0.0010	mg/L	0.0585	0.0697	0.0489	0.0669
magnesium, dissolved	0.0050	mg/L	71.6	69.4	60.3	68.3
manganese, dissolved	0.00010	mg/L	0.00098	0.00014	0.00319	0.00038
mercury, dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, dissolved	0.000050	mg/L	0.00260	0.000885	0.00147	0.000882
nickel, dissolved	0.00050	mg/L	0.00220	<0.00050	0.00117	<0.00050
potassium, dissolved	0.050	mg/L	2.15	2.78	1.92	2.69
selenium, dissolved	0.050	µg/L	115	138	104	133
silicon, dissolved	0.050	mg/L	2.75	2.77	2.59	2.76
silver, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	0.050	mg/L	3.69	4.42	3.39	4.32
strontium, dissolved	0.00020	mg/L	0.196	0.174	0.176	0.176
sulfur, dissolved	0.50	mg/L	114	124	120	124
thallium, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010
tin, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030
uranium, dissolved	0.000010	mg/L	0.00395	0.00433	0.00339	0.00418
vanadium, dissolved	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
zinc, dissolved	0.0010	mg/L	0.0015	<0.0010	0.0014	<0.0010
dissolved mercury filtration location			Field	Field	Field	Field
dissolved metals filtration location			Field	Field	Field	Field

Qualifier Legend

DLDS Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DTSE Dissolved Se concentration exceeds total. Positive bias on D-Se suspected due to signal enhancement from volatile selenium species. Contact ALS if an alternative test to address this interference is required.
TKNI TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.

Results Summary CG2212981

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 22-Sep-2022 08:58
Issue Date 24-Sep-2022 16:33
Amendment 0

Client Sample ID			RG_FRDSCC1_WS_L AEMP_FRO_2022- 09_N	RG_FRCP1SW_WS_ LAEMP_FRO_2022- 09_N	RG_RIVER_WS_LAE MP_FRO_2022-09_N	RG_FBLANK4_WS_L AEMP_FRO_2022- 09_N	RG_FODHE_WS_LAE MP_FRO_2022-09_N	RG_UFR1_WS_LAEM P_FRO_2022-09_N	RG_WED_WS_LAEM P_FRO_2022-09_N
Date Sampled			19-Sep-2022	19-Sep-2022	19-Sep-2022	19-Sep-2022	19-Sep-2022	19-Sep-2022	19-Sep-2022
Time Sampled			13:30	09:00	13:30	13:30	11:45	14:30	10:15
ALS Sample ID			CG2212981-001	CG2212981-002	CG2212981-003	CG2212981-004	CG2212981-005	CG2212981-006	CG2212981-007
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Physical Tests (Matrix: Water)									
conductivity	2.0	µS/cm	925	1170	925	<2.0	486	333	541
acidity (as CaCO3)	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
alkalinity, bicarbonate (as CaCO3)	1.0	mg/L	187	235	183	<1.0	136	139	173
alkalinity, bicarbonate (as HCO3)	1.0	mg/L	228	287	224	<1.0	166	170	211
alkalinity, carbonate (as CO3)	1.0	mg/L	<1.0	7.9	<1.0	<1.0	3.1	3.5	<1.0
alkalinity, carbonate (as CaCO3)	1.0	mg/L	<1.0	13.2	<1.0	<1.0	5.2	5.8	<1.0
alkalinity, hydroxide (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as OH)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	1.0	mg/L	187	248	183	<1.0	141	145	173
hardness (as CaCO3), dissolved	0.50	mg/L	500	712	529	<0.50	271	173	305
oxidation-reduction potential [ORP]	0.10	mV	300	301	302	482	302	303	305
pH	0.10	pH units	8.26	8.40	8.26	5.55	8.37	8.41	8.15
solids, total dissolved [TDS]	10	mg/L	675	893	669	<10	280	166	335
solids, total suspended [TSS]	1.0	mg/L	2.2	<1.0	1.1	<1.0	<1.0	<1.0	<1.0
turbidity	0.10	NTU	0.36	0.23	0.46	<0.10	0.21	1.12	<0.10
Anions and Nutrients (Matrix: Water)									
Kjeldahl nitrogen, total [TKN]	0.050	mg/L	1.38	2.51	2.06	<0.050	<0.500	<0.500	<0.500
ammonia, total (as N)	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0305
bromide	0.050	mg/L	<0.250	<0.250	<0.050	<0.050	<0.050	<0.050	<0.050
chloride	0.10	mg/L	1.02	7.18	0.71	<0.10	0.21	0.14	0.24
fluoride	0.020	mg/L	0.191	0.183	0.187	<0.020	0.238	0.147	0.202
nitrate (as N)	0.0050	mg/L	21.1	19.6	20.8	<0.0050	2.28	0.0090	4.18
nitrite (as N)	0.0010	mg/L	0.0147	0.0056	0.0144	<0.0010	0.0023	<0.0010	0.0018
phosphate, ortho-, dissolved (as P)	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
phosphorus, total	0.0020	mg/L	0.0028	0.0085	0.0023	<0.0020	0.0025	0.0047	<0.0020
sulfate (as SO4)	0.30	mg/L	280	388	266	<0.30	121	41.7	121
Organic / Inorganic Carbon (Matrix: Water)									
carbon, dissolved organic [DOC]	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
carbon, total organic [TOC]	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ion Balance (Matrix: Water)									
anion sum	0.10	meq/L	11.1	14.6	10.7	<0.10	5.52	3.78	6.29
cation sum	0.10	meq/L	10.1	14.5	10.8	<0.10	5.46	3.50	6.17
ion balance (APHA)	0.010	%	4.72	0.344	0.465	<0.010	0.546	3.85	0.963
ion balance (cations/anions)	0.010	%	91.0	99.3	101	100	98.9	92.6	98.1
Total Metals (Matrix: Water)									
aluminum, total	0.0030	mg/L	0.0060	0.0055	0.0055	<0.0030	0.0080	0.0643	0.0044
antimony, total	0.00010	mg/L	0.00027	0.00025	0.00021	<0.00010	<0.00010	<0.00010	0.00012
arsenic, total	0.00010	mg/L	0.00014	0.00014	0.00014	<0.00010	0.00013	0.00018	0.00010
barium, total	0.00010	mg/L	0.0743	0.0863	0.0707	<0.00010	0.0412	0.0742	0.0819
beryllium, total	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
bismuth, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	0.010	mg/L	0.013	0.014	0.012	<0.010	<0.010	<0.010	<0.010
cadmium, total	0.0050	µg/L	0.112	0.0578	0.0939	<0.0050	0.0134	0.0118	0.0168
calcium, total	0.050	mg/L	115	136	108	<0.050	61.5	47.1	66.8
chromium, total	0.00010	mg/L	0.00014	<0.00010	0.00012	<0.00010	0.00012	0.00023	0.00011
cobalt, total	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
copper, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
iron, total	0.010	mg/L	<0.010	0.020	<0.010	<0.010	<0.010	0.023	<0.010
lead, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
lithium, total	0.0010	mg/L	0.0760	0.0698	0.0738	<0.0010	0.0086	0.0017	0.0301
magnesium, total	0.0050	mg/L	54.8	77.3	52.3	<0.0050	24.3	13.8	27.1
manganese, total	0.00010	mg/L	0.00076	0.00337	0.00064	<0.00010	0.00126	0.00056	0.00013
mercury, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
molybdenum, total	0.000050	mg/L	0.00113	0.00512	0.00109	<0.000050	0.000859	0.000635	0.000825
nickel, total	0.00050	mg/L	0.0113	0.00620	0.0110	<0.00050	0.00053	<0.00050	0.00058
potassium, total	0.050	mg/L	1.90	2.36	1.81	<0.050	0.703	0.435	1.02
selenium, total	0.050	µg/L	58.2	69.0	59.3	<0.050	19.1	0.774	21.0
silicon, total	0.10	mg/L	1.86	1.61	1.70	<0.10	1.42	1.76	1.69
silver, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	0.050	mg/L	2.84	4.77	2.72	<0.050	0.645	0.656	1.21
strontium, total	0.00020	mg/L	0.180	0.184	0.175	<0.00020	0.116	0.100	0.118
sulfur, total	0.50	mg/L	101	138	95.7	<0.50	42.5	15.3	42.3
thallium, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
tin, total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	0.00181	<0.00030
uranium, total	0.000010	mg/L	0.00388	0.00471	0.00376	<0.000010	0.00106	0.000467	0.00151
vanadium, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00093	<0.00050
zinc, total	0.0030	mg/L	0.0059	<0.0030	0.0052	<0.0030	<0.0030	<0.0030	<0.0030

Results Summary CG2212981

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 22-Sep-2022 08:58
Issue Date 24-Sep-2022 16:33
Amendment 0

Client Sample ID			RG_FRDSCC1_WS_L AEMP_FRO_2022- 09_N	RG_FRCP1SW_WS_ LAEMP_FRO_2022- 09_N	RG_RIVER_WS_LAE MP_FRO_2022-09_N	RG_FBLANK4_WS_L AEMP_FRO_2022- 09_N	RG_FODHE_WS_LAE MP_FRO_2022-09_N	RG_UFR1_WS_LAEM P_FRO_2022-09_N	RG_WED_WS_LAEM P_FRO_2022-09_N
Date Sampled			19-Sep-2022	19-Sep-2022	19-Sep-2022	19-Sep-2022	19-Sep-2022	19-Sep-2022	19-Sep-2022
Time Sampled			13:30	09:00	13:30	13:30	11:45	14:30	10:15
ALS Sample ID			CG2212981-001	CG2212981-002	CG2212981-003	CG2212981-004	CG2212981-005	CG2212981-006	CG2212981-007
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Dissolved Metals (Matrix: Water)									
aluminum, dissolved	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
antimony, dissolved	0.00010	mg/L	0.00020	0.00023	0.00020	<0.00010	<0.00010	<0.00010	0.00010
arsenic, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00011	<0.00010
barium, dissolved	0.00010	mg/L	0.0744	0.0976	0.0823	<0.00010	0.0421	0.0731	0.0922
beryllium, dissolved	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
bismuth, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	0.010	mg/L	0.012	0.014	0.012	<0.010	<0.010	<0.010	<0.010
cadmium, dissolved	0.0050	µg/L	0.0542	0.0551	0.0592	<0.0050	0.0177	0.0103	0.0191
calcium, dissolved	0.050	mg/L	116	152	120	<0.050	66.5	47.6	74.4
chromium, dissolved	0.00010	mg/L	<0.00010	<0.00010	0.00011	<0.00010	<0.00010	<0.00010	0.00012
cobalt, dissolved	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
copper, dissolved	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
iron, dissolved	0.010	mg/L	<0.010	0.012	<0.010	<0.010	<0.010	<0.010	<0.010
lead, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
lithium, dissolved	0.0010	mg/L	0.0761	0.0752	0.0796	<0.0010	0.0077	0.0012	0.0323
magnesium, dissolved	0.0050	mg/L	51.1	80.8	55.8	<0.0050	25.5	13.2	28.9
manganese, dissolved	0.00010	mg/L	0.00044	0.00276	0.00047	<0.00010	0.00075	0.00012	0.00014
mercury, dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, dissolved	0.000050	mg/L	0.00117	0.00556	0.00122	<0.000050	0.000900	0.000672	0.000888
nickel, dissolved	0.00050	mg/L	0.0102	0.00585	0.0109	<0.00050	<0.00050	<0.00050	<0.00050
potassium, dissolved	0.050	mg/L	1.62	2.30	1.79	<0.050	0.658	0.371	1.03
selenium, dissolved	0.050	µg/L	78.5	87.7	71.0	<0.050	22.5	0.916	23.2
silicon, dissolved	0.050	mg/L	1.91	1.76	1.88	<0.050	1.60	1.95	2.03
silver, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	0.050	mg/L	2.66	4.94	2.94	<0.050	0.632	0.607	1.28
strontium, dissolved	0.00020	mg/L	0.183	0.204	0.193	<0.00020	0.120	0.100	0.129
sulfur, dissolved	0.50	mg/L	104	142	97.2	<0.50	42.9	15.5	44.1
thallium, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
tin, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
uranium, dissolved	0.000010	mg/L	0.00353	0.00445	0.00373	<0.000010	0.000964	0.000391	0.00139
vanadium, dissolved	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
zinc, dissolved	0.0010	mg/L	0.0037	0.0024	0.0040	<0.0010	<0.0010	<0.0010	<0.0010
dissolved mercury filtration location			Field	Field	Field	Field	Field	Field	Field
dissolved metals filtration location			Field	Field	Field	Field	Field	Field	Field

Qualifier Legend

DLDS Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
TKNI TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.

Results Summary CG2215634

Project REGIONAL EFFECTS PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 09-Nov-2022 09:00
Issue Date 30-Nov-2022 14:37
Amendment 1

			RG_FOBKS_WS_LAE MP_FRO_2022-11_NP	RG_SCOUTDS_WS_L AEMP_FRO_2022-11_NP	RG_FOBSC_WS_LAE MP_FRO_2022-11_NP	RG_FO22_WS_LAEM P_FRO_2022-11_NP	RG_TRIP_WS_LAEM P_FRO_2022-11_NP	RG_RIVER_WS_LAE MP_FRO_2022-11_NP	RG_FBLANK_WS_LA EMP_FRO_2022-11_NP
Client Sample ID			07-Nov-2022	07-Nov-2022	07-Nov-2022	08-Nov-2022	07-Nov-2022	07-Nov-2022	07-Nov-2022
Date Sampled			08:40	10:45	12:40	08:30	08:40	08:40	16:10
Time Sampled			CG2215634-001	CG2215634-002	CG2215634-003	CG2215634-004	CG2215634-005	CG2215634-006	CG2215634-007
ALS Sample ID			Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Analyte	Lowest Detection Limit	Units							
Physical Tests (Matrix: Water)									
conductivity	2.0	µS/cm	988	1510	1520	1150	<2.0	995	<2.0
acidity (as CaCO3)	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
alkalinity, bicarbonate (as CaCO3)	1.0	mg/L	179	261	260	220	<1.0	186	<1.0
alkalinity, bicarbonate (as HCO3)	1.0	mg/L	219	318	317	268	<1.0	226	<1.0
alkalinity, carbonate (as CO3)	1.0	mg/L	6.5	16.6	18.0	7.6	<1.0	7.0	<1.0
alkalinity, carbonate (as CaCO3)	1.0	mg/L	10.8	27.6	30.0	12.6	<1.0	11.6	<1.0
alkalinity, hydroxide (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as OH)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	1.0	mg/L	190	288	290	232	<1.0	197	<1.0
hardness (as CaCO3), dissolved	0.50	mg/L	570	970	933	688	<0.50	598	<0.50
oxidation-reduction potential [ORP]	0.10	mV	288	292	295	297	552	299	561
pH	0.10	pH units	8.40	8.51	8.51	8.39	5.20	8.41	5.34
solids, total dissolved [TDS]	10	mg/L	775	1240	1280	901	<10	801	<10
solids, total suspended [TSS]	1.0	mg/L	5.7	2.8	2.1	1.7	<1.0	4.7	<1.0
turbidity	0.10	NTU	0.35	0.46	0.38	0.21	<0.10	0.70	<0.10
Anions and Nutrients (Matrix: Water)									
Kjeldahl nitrogen, total [TKN]	0.050	mg/L	1.40	1.12	0.993	1.21	<0.050	1.34	<0.050
ammonia, total (as N)	0.0050	mg/L	<0.0050	0.0112	0.0102	0.0053	0.0089	0.0128	<0.0050
bromide	0.050	mg/L	<0.250	<0.250	<0.250	<0.250	<0.050	<0.250	<0.050
chloride	0.10	mg/L	1.71	17.1	17.4	7.13	<0.10	1.78	<0.10
fluoride	0.020	mg/L	0.181	0.175	0.175	0.144	<0.020	0.179	<0.020
nitrate (as N)	0.0050	mg/L	19.2	17.3	17.0	23.2	<0.0050	19.4	<0.0050
nitrite (as N)	0.0010	mg/L	<0.0050	0.0061	0.0063	<0.0050	<0.0010	<0.0050	<0.0010
phosphate, ortho-, dissolved (as P)	0.0010	mg/L	<0.0010	0.0091	0.0072	<0.0010	<0.0010	<0.0010	<0.0010
phosphorus, total	0.0020	mg/L	0.0032	0.0179	0.0142	0.0039	<0.0020	0.0064	<0.0020
sulfate (as SO4)	0.30	mg/L	321	596	608	364	<0.30	322	<0.30
Organic / Inorganic Carbon (Matrix: Water)									
carbon, dissolved organic [DOC]	0.50	mg/L	0.82	0.88	1.07	<0.50		2.20	<0.50
carbon, total organic [TOC]	0.50	mg/L	0.62	1.04	1.04	<0.50	<0.50	2.35	<0.50
Ion Balance (Matrix: Water)									
anion sum	0.10	meq/L	11.9	19.9	20.2	14.1	<0.10	12.1	<0.10
cation sum	0.10	meq/L	11.6	19.7	19.0	14.0	<0.10	12.1	<0.10
ion balance (APHA)	0.01	%	-1.28	-0.50	-3.06	-0.36	<0.01	<0.01	<0.01
ion balance (cations/anions)	0.010	%	97.5	99.0	94.0	99.3	100	100	100
Total Metals (Matrix: Water)									
aluminum, total	0.0030	mg/L	0.0069	0.0054	0.0078	0.0096	<0.0030	0.0102	<0.0030
antimony, total	0.00010	mg/L	0.00018	0.00022	0.00022	<0.00010	<0.00010	0.00022	<0.00010
arsenic, total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
barium, total	0.00010	mg/L	0.0857	0.0702	0.0698	0.0928	0.00027	0.104	<0.00010
beryllium, total	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
bismuth, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	0.010	mg/L	0.014	0.015	0.015	0.013	<0.010	0.014	<0.010
cadmium, total	0.0050	µg/L	0.0719	0.0895	0.0880	0.0336	<0.0050	0.0814	<0.0050
calcium, total	0.050	mg/L	126	184	194	143	<0.050	148	<0.050
chromium, total	0.00010	mg/L	0.00010	0.00024	0.00020	0.00012	<0.00010	0.00013	<0.00010
cobalt, total	0.10	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
copper, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
iron, total	0.010	mg/L	0.039	0.041	0.037	0.025	<0.010	0.045	<0.010
lead, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
lithium, total	0.0010	mg/L	0.0598	0.0778	0.0770	0.0462	<0.0010	0.0648	<0.0010
magnesium, total	0.0050	mg/L	62.9	121	120	72.9	<0.0050	71.7	<0.0050
manganese, total	0.00010	mg/L	0.0121	0.0115	0.0102	0.00675	<0.00010	0.0134	<0.00010
mercury, total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, total	0.000050	mg/L	0.00127	0.0103	0.0102	0.000806	<0.000050	0.00154	<0.000050
nickel, total	0.00050	mg/L	0.00434	0.00685	0.00706	0.00064	<0.00050	0.00509	<0.00050
potassium, total	0.050	mg/L	1.76	2.62	2.61	1.74	<0.050	2.07	<0.050
selenium, total	0.050	µg/L	69.5	79.3	91.6	89.3	<0.050	74.0	<0.050
silicon, total	0.10	mg/L	1.67	1.88	1.87	2.23	<0.10	1.91	<0.10
silver, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	0.050	mg/L	3.16	6.99	6.86	3.79	<0.050	3.20	<0.050
strontium, total	0.00020	mg/L	0.185	0.208	0.204	0.179	<0.00020	0.213	<0.00020
sulfur, total	0.50	mg/L	124	201	198	114	<0.50	119	<0.50
thallium, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
tin, total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
uranium, total	0.000010	mg/L	0.00365	0.00653	0.00671	0.00339	<0.000010	0.00409	<0.000010
vanadium, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
zinc, total	0.0030	mg/L	0.0047	0.0066	0.0113	<0.0030	<0.0030	0.0086	<0.0030

Results Summary CG2215634

Project REGIONAL EFFECTS PROGRAM
Report To Mike Pope, Teck Coal Limited
Date Received 09-Nov-2022 09:00
Issue Date 30-Nov-2022 14:37
Amendment 1

			RG_FOBKS_WS_LAE MP_FRO_2022-11_NP	RG_SCOUTDS_WS_L AEMP_FRO_2022-11_NP	RG_FOBSC_WS_LAE MP_FRO_2022-11_NP	RG_FO22_WS_LAEM P_FRO_2022-11_NP	RG_TRIP_WS_LAEM P_FRO_2022-11_NP	RG_RIVER_WS_LAE MP_FRO_2022-11_NP	RG_FBLANK_WS_LA EMP_FRO_2022-11_NP
Client Sample ID			07-Nov-2022	07-Nov-2022	07-Nov-2022	08-Nov-2022	07-Nov-2022	07-Nov-2022	07-Nov-2022
Date Sampled			08:40	10:45	12:40	08:30	08:40	08:40	16:10
Time Sampled			CG2215634-001	CG2215634-002	CG2215634-003	CG2215634-004	CG2215634-005	CG2215634-006	CG2215634-007
ALS Sample ID			Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Analyte	Lowest Detection Limit	Units							
Dissolved Metals (Matrix: Water)									
aluminum, dissolved	0.0010	mg/L	<0.0010	<0.0010	0.0023	<0.0010	<0.0010	<0.0010	<0.0010
antimony, dissolved	0.00010	mg/L	0.00021	0.00023	0.00021	<0.00010	<0.00010	0.00018	<0.00010
arsenic, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
barium, dissolved	0.00010	mg/L	0.0916	0.0743	0.0717	0.0952	<0.00010	0.0918	<0.00010
beryllium, dissolved	0.020	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
bismuth, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	0.010	mg/L	0.012	0.015	0.014	0.014	<0.010	0.011	<0.010
cadmium, dissolved	0.0050	µg/L	0.0696	0.0940	0.0912	0.0324	<0.0050	0.0671	<0.0050
calcium, dissolved	0.050	mg/L	122	197	184	151	<0.050	130	<0.050
chromium, dissolved	0.00010	mg/L	<0.00010	0.00029	0.00024	0.00014	<0.00010	<0.00010	<0.00010
cobalt, dissolved	0.10	µg/L	<0.10	<0.10	0.11	<0.10	<0.10	<0.10	<0.10
copper, dissolved	0.00020	mg/L	<0.00020	0.00022	0.00020	<0.00020	<0.00020	<0.00020	<0.00020
iron, dissolved	0.010	mg/L	0.028	0.024	0.024	0.012	<0.010	0.028	<0.010
lead, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
lithium, dissolved	0.0010	mg/L	0.0572	0.0756	0.0743	0.0449	<0.0010	0.0580	<0.0010
magnesium, dissolved	0.0050	mg/L	64.5	116	115	75.4	<0.0050	66.3	<0.0050
manganese, dissolved	0.00010	mg/L	0.0118	0.0102	0.00963	0.00573	<0.00010	0.0118	<0.00010
mercury, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050	<0.000050
molybdenum, dissolved	0.000050	mg/L	0.00142	0.0114	0.0108	0.000878	<0.000050	0.00135	<0.000050
nickel, dissolved	0.00050	mg/L	0.00440	0.00689	0.00717	0.00068	<0.00050	0.00464	<0.00050
potassium, dissolved	0.050	mg/L	1.72	2.60	2.52	1.76	<0.050	1.82	<0.050
selenium, dissolved	0.050	µg/L	139	118	109	110	<0.050	105	<0.050
silicon, dissolved	0.050	mg/L	2.11	2.08	1.93	2.58	<0.050	1.98	<0.050
silver, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	0.050	mg/L	2.89	7.05	6.98	4.16	<0.050	2.86	<0.050
strontium, dissolved	0.00020	mg/L	0.177	0.216	0.205	0.171	<0.00020	0.182	<0.00020
sulfur, dissolved	0.50	mg/L	126	224	211	139	<0.50	128	<0.50
thallium, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
tin, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
uranium, dissolved	0.000010	mg/L	0.00423	0.00765	0.00716	0.00363	<0.000010	0.00400	<0.000010
vanadium, dissolved	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
zinc, dissolved	0.0010	mg/L	0.0046	0.0064	0.0086	<0.0010	<0.0010	0.0049	<0.0010
dissolved mercury filtration location			Field	Field	Field	Field		Field	Field
dissolved metals filtration location			Field	Field	Field	Field	Laboratory	Field	Field

Qualifier Legend

DLDS Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DTSE Dissolved Se concentration exceeds total. Positive bias on D-Se suspected due to signal enhancement from volatile selenium species. Contact ALS if an alternative test to address this interference is needed.
RRV Reported result verified by repeat analysis.

Results Summary CG2217060

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 09-Dec-2022 09:05
Issue Date 17-Jan-2023 15:18
Amendment 3

Client Sample ID			RG_RIVER_WS_LAE MP_FRO_2022-12_NP	RG_FRSC2_WS_LA EMP_FRO_2022-12_NP	RG_FRGHSC_WS_LA EMP_FRO_2022-12_NP	RG_CLODE_WS_LAE MP_FRO_2022-12_NP	RG_SCDSB_WS_LAE MP_FRO_2022-12_NP	RG_FRUPO_WS_LAE MP_FRO_2022-12_NP	RG_FODPO_WS_LAE MP_FRO_2022-12_NP	RG_MP1_WS_LAEMP _FRO_2022-12_NP	RG_FO22_WS_LAEMP P_FRO_2022-12_NP	RG_FOUKI_WS_LAE MP_FRO_2022-12_NP	RG_FOBKS_WS_LAE MP_FRO_2022-12_NP	RG_SCOUTDS_WS_L AEMP_FRO_2022-12_NP	RG_FOBSC_WS_LAE MP_FRO_2022-12_NP
Date Sampled			08-Dec-2022	07-Dec-2022	08-Dec-2022	07-Dec-2022	08-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022
Time Sampled			14:30	09:00	12:30	10:00	09:30	14:00	11:30	14:30	10:30	14:30	13:30	08:00	13:30
ALS Sample ID			CG2217060-001	CG2217060-002	CG2217060-003	CG2217060-004	CG2217060-005	CG2217060-006	CG2217060-007	CG2217060-008	CG2217060-009	CG2217060-010	CG2217060-011	CG2217060-012	CG2217060-013
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Physical Tests (Matrix: Water)															
Conductivity	2.0	µS/cm	1160	1200	1350	2270	1370	1320	1190	1160	1190	1170	1150	1540	1530
Acidity (as CaCO3)	2.0	mg/L	<2.0	4.4	2.8	7.2	<2.0	3.7	4.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, bicarbonate (as CaCO3)	1.0	mg/L	208	242	261	241	237	266	242	201	236	205	193	268	248
Alkalinity, bicarbonate (as HCO3)	1.0	mg/L	254	295	319	294	289	324	295	245	288	250	235	326	303
Alkalinity, carbonate (as CO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.4	<1.0	6.5
Alkalinity, carbonate (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.6	<1.0	10.8
Alkalinity, hydroxide (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as OH)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO3)	1.0	mg/L	208	242	261	241	237	266	242	201	236	205	198	268	259
Hardness (as CaCO3), dissolved	0.50	mg/L	609	632	690	1450	743	706	615	647	610	604	682	1030	984
Oxidation-reduction potential [ORP]	0.10	mV	424	426	424	420	417	420	443	429	428	424	428	418	417
Solids, total dissolved [TDS]	10	mg/L	979	903	1120	1760	1160	1000	903	874	927	909	920	1360	1340
Solids, total suspended [TSS]	1.0	mg/L	2.7	1.4	1.7	2.9	1.0	4.2	1.7	3.7	1.0	2.0	<1.0	2.4	1.2
Turbidity	0.10	NTU	0.57	0.12	0.22	0.22	0.37	0.18	0.23	0.41	0.17	0.39	0.34	0.44	0.38
pH	0.10	pH units	8.24	7.93	8.04	7.96	8.26	8.08	7.98	8.22	8.17	8.27	8.29	8.27	8.32
Anions and Nutrients (Matrix: Water)															
Ammonia, total (as N)	0.0050	mg/L	<0.0050	<0.0050	<0.0050	0.0095	0.0158	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0088	0.0344
Bromide	0.050	mg/L	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250
Chloride	0.10	mg/L	2.06	7.59	18.9	3.73	8.08	16.9	6.91	1.35	8.07	2.01	1.88	14.4	14.7
Fluoride	0.020	mg/L	0.169	0.138	0.159	0.212	0.175	0.154	0.148	0.162	0.139	0.172	0.169	0.171	0.170
Kjeldahl nitrogen, total [TKN]	0.050	mg/L	1.48	2.17	1.57	<0.500	0.615	1.08	1.33	1.39	1.19	1.46	0.606	0.991	1.14
Nitrate (as N)	0.0050	mg/L	27.3	26.2	23.0	97.6	25.6	23.0	24.0	28.9	23.7	27.3	26.7	23.0	22.8
Nitrite (as N)	0.0010	mg/L	0.0069	<0.0050	<0.0050	0.0180	0.0065	0.0051	<0.0050	0.0068	0.0058	0.0071	0.0063	0.0059	0.0071
Phosphate, ortho-, dissolved (as P)	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.0024	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0094	0.0090
Phosphorus, total	0.0020	mg/L	<0.0020	0.0227	0.0032	<0.0020	0.0093	0.0054	0.0020	<0.0020	0.0023	<0.0020	<0.0020	0.0165	0.0176
Sulfate (as SO4)	0.30	mg/L	408	387	469	882	534	450	385	405	385	409	400	652	644
Organic / Inorganic Carbon (Matrix: Water)															
Carbon, dissolved organic [DOC]	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon, total organic [TOC]	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.55
Ion Balance (Matrix: Water)															
Anion sum	0.10	meq/L	14.7	15.0	17.2	30.3	17.9	16.8	14.8	14.6	14.6	14.6	14.2	21.0	20.6
Cation sum	0.10	meq/L	12.3	12.8	14.2	29.7	15.1	14.5	12.5	13.1	12.4	12.2	13.8	21.0	20.0
Ion balance (APHA)	0.01	%	-8.89	-7.91	-9.55	-1.00	-8.48	-7.35	-8.42	-5.42	-8.15	-8.96	-1.43	<0.01	-1.48
Ion balance (cations/anions)	0.010	%	83.7	85.3	82.6	98.0	84.4	86.3	84.4	89.7	84.9	83.6	97.2	100	97.1

Results Summary CG2217060

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 09-Dec-2022 09:05
Issue Date 17-Jan-2023 15:18
Amendment 3

Client Sample ID			RG_RIVER_WS_LAE MP_FRO_2022-12_NP	RG_FRSC2_WS_LA EMP_FRO_2022-12_NP	RG_FRGHC_WS_LA EMP_FRO_2022-12_NP	RG_CLOSE_WS_LAE MP_FRO_2022-12_NP	RG_SCDSB_WS_LAE MP_FRO_2022-12_NP	RG_FRUPO_WS_LAE MP_FRO_2022-12_NP	RG_FODPO_WS_LAE MP_FRO_2022-12_NP	RG_MP1_WS_LAEMP _FRO_2022-12_NP	RG_FO22_WS_LAEMP P_FRO_2022-12_NP	RG_FOUKI_WS_LAE MP_FRO_2022-12_NP	RG_FOBKS_WS_LAE MP_FRO_2022-12_NP	RG_SCOUTDS_WS_L AEMP_FRO_2022-12_NP	RG_FOBSC_WS_LAE MP_FRO_2022-12_NP
Date Sampled			08-Dec-2022	07-Dec-2022	08-Dec-2022	07-Dec-2022	08-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022
Time Sampled			14:30	09:00	12:30	10:00	09:30	14:00	11:30	14:30	10:30	14:30	13:30	08:00	13:30
ALS Sample ID			CG2217060-001	CG2217060-002	CG2217060-003	CG2217060-004	CG2217060-005	CG2217060-006	CG2217060-007	CG2217060-008	CG2217060-009	CG2217060-010	CG2217060-011	CG2217060-012	CG2217060-013
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Total Metals (Matrix: Water)															
Aluminum, total	0.0030	mg/L	0.0041	0.0034	0.0044	0.0076	0.0043	0.0038	0.0041	0.0037	0.0033	0.0041	0.0039	0.0042	0.0051
Antimony, total	0.00010	mg/L	0.00022	<0.00010	0.00011	0.00162	0.00020	<0.00010	0.00010	0.00021	<0.00010	0.00020	0.00019	0.00020	0.00020
Arsenic, total	0.00010	mg/L	0.00012	0.00010	<0.00010	0.00030	0.00010	0.00010	0.00011	0.00011	0.00011	0.00012	0.00017	0.00010	<0.00010
Barium, total	0.00010	mg/L	0.104	0.0822	0.0998	0.0614	0.0919	0.100	0.0883	0.106	0.104	0.102	0.102	0.0869	0.0859
Beryllium, total	0.020	µg/L	<0.020	<0.020	<0.020	<0.040	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Bismuth, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000100	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron, total	0.010	mg/L	<0.010	0.012	0.017	0.068	0.010	0.016	0.011	<0.010	0.011	0.011	<0.010	0.011	0.011
Cadmium, total	0.0050	µg/L	0.0877	0.0322	0.0536	1.23	0.0715	0.0443	0.0275	0.0726	0.0272	0.0812	0.0520	0.0743	0.0439
Calcium, total	0.050	mg/L	167	176	194	679	189	192	171	166	178	167	163	214	214
Chromium, total	0.00010	mg/L	<0.00010	0.00017	0.00015	<0.00020	<0.00010	0.00017	0.00014	<0.00010	0.00015	<0.00010	0.00014	0.00022	0.00024
Cobalt, total	0.10	µg/L	<0.10	<0.10	<0.10	0.44	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Copper, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00100	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Iron, total	0.010	mg/L	0.044	<0.010	<0.010	<0.020	0.038	<0.010	<0.010	<0.010	0.016	0.041	0.036	0.042	0.047
Lead, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000100	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium, total	0.0010	mg/L	0.0793	0.0550	0.0749	0.914	0.0803	0.0684	0.0483	0.0866	0.0486	0.0873	0.0780	0.0861	0.0869
Magnesium, total	0.0050	mg/L	82.5	82.2	88.9	348	101	88.4	77.8	75.5	80.0	78.7	77.4	133	126
Manganese, total	0.00010	mg/L	0.0148	0.00021	0.00043	0.00306	0.0119	0.00064	0.00051	0.00172	0.00931	0.0136	0.0114	0.0132	0.0121
Mercury, total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum, total	0.000050	mg/L	0.00132	0.000795	0.000833	0.00748	0.00496	0.000839	0.000948	0.00127	0.000840	0.00124	0.00127	0.00936	0.00953
Nickel, total	0.00050	mg/L	0.00508	<0.00050	<0.00050	0.124	0.00630	<0.00050	<0.00050	0.00578	0.00061	0.00485	0.00483	0.00720	0.00648
Potassium, total	0.050	mg/L	2.14	2.14	2.87	13.3	2.32	2.74	1.94	1.91	1.99	2.10	2.06	2.74	2.66
Selenium, total	0.050	µg/L	99.3	108	95.5	454	93.6	99.2	104	109	99.9	98.7	96.2	95.1	87.6
Silicon, total	0.10	mg/L	1.88	2.55	2.44	3.96	1.84	2.54	2.43	1.86	2.56	1.76	1.85	1.97	1.91
Silver, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium, total	0.050	mg/L	3.87	4.38	8.98	26.4	4.82	8.62	3.94	3.63	4.69	3.93	3.89	6.77	6.49
Strontium, total	0.00020	mg/L	0.231	0.200	0.209	1.03	0.229	0.205	0.201	0.227	0.205	0.231	0.228	0.231	0.236
Sulfur, total	0.50	mg/L	146	138	159	651	178	158	139	150	137	143	146	230	224
Thallium, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	0.000103	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin, total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium, total	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00060	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium, total	0.000010	mg/L	0.00484	0.00412	0.00526	0.0331	0.00596	0.00484	0.00398	0.00490	0.00393	0.00487	0.00487	0.00710	0.00705
Vanadium, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00100	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc, total	0.0030	mg/L	<0.0030	<0.0030	<0.0030	0.0605	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Results Summary CG2217060

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 09-Dec-2022 09:05
Issue Date 17-Jan-2023 15:18
Amendment 3

Client Sample ID			RG_RIVER_WS_LAE MP_FRO_2022-12_NP	RG_FRSC2_WS_LA EMP_FRO_2022-12_NP	RG_FRGHSC_WS_LA EMP_FRO_2022-12_NP	RG_CLODE_WS_LAE MP_FRO_2022-12_NP	RG_SCDSB_WS_LAE MP_FRO_2022-12_NP	RG_FRUPO_WS_LAE MP_FRO_2022-12_NP	RG_FODPO_WS_LAE MP_FRO_2022-12_NP	RG_MP1_WS_LAEMP _FRO_2022-12_NP	RG_FO22_WS_LAEMP P_FRO_2022-12_NP	RG_FOUKI_WS_LAE MP_FRO_2022-12_NP	RG_FOBKS_WS_LAE MP_FRO_2022-12_NP	RG_SCOUTDS_WS_L AEMP_FRO_2022-12_NP	RG_FOBSC_WS_LAE MP_FRO_2022-12_NP
Date Sampled			08-Dec-2022	07-Dec-2022	08-Dec-2022	07-Dec-2022	08-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022
Time Sampled			14:30	09:00	12:30	10:00	09:30	14:00	11:30	14:30	10:30	14:30	13:30	08:00	13:30
ALS Sample ID			CG2217060-001	CG2217060-002	CG2217060-003	CG2217060-004	CG2217060-005	CG2217060-006	CG2217060-007	CG2217060-008	CG2217060-009	CG2217060-010	CG2217060-011	CG2217060-012	CG2217060-013
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Dissolved Metals (Matrix: Water)															
Aluminum, dissolved	0.0010	mg/L	0.0012	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Antimony, dissolved	0.00010	mg/L	0.00020	<0.00010	<0.00010	0.00072	0.00018	<0.00010	<0.00010	0.00018	<0.00010	0.00018	0.00018	0.00020	0.00018
Arsenic, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium, dissolved	0.00010	mg/L	0.0942	0.0769	0.0942	0.0310	0.0828	0.0858	0.0771	0.0980	0.0887	0.0897	0.106	0.0886	0.0874
Beryllium, dissolved	0.020	µg/L	<0.020	<0.020	<0.020	<0.040	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Bismuth, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000100	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron, dissolved	0.010	mg/L	<0.010	0.010	0.015	0.031	<0.010	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010
Cadmium, dissolved	0.0050	µg/L	0.0691	0.0200	0.0438	0.583	0.0504	0.0374	0.0234	0.0640	0.0322	0.0547	0.0574	0.0689	0.0542
Calcium, dissolved	0.050	mg/L	146	150	165	310	157	164	134	148	137	136	149	212	196
Chromium, dissolved	0.00010	mg/L	<0.00010	<0.00010	0.00013	<0.00020	0.00011	0.00013	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	0.00016	0.00020
Cobalt, dissolved	0.10	µg/L	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Copper, dissolved	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00040	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Iron, dissolved	0.010	mg/L	0.032	<0.010	<0.010	<0.020	0.026	<0.010	<0.010	<0.010	<0.010	0.029	0.028	0.025	0.027
Lead, dissolved	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000100	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium, dissolved	0.0010	mg/L	0.0796	0.0510	0.0701	0.447	0.0783	0.0638	0.0421	0.0837	0.0425	0.0748	0.0814	0.0910	0.0852
Magnesium, dissolved	0.0050	mg/L	59.3	62.5	67.5	164	85.2	72.0	68.1	67.4	65.2	64.3	75.3	122	120
Manganese, dissolved	0.00010	mg/L	0.0122	0.00011	0.00013	0.00170	0.0101	0.00039	0.00023	0.00150	0.00771	0.0114	0.0115	0.0120	0.0117
Mercury, dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum, dissolved	0.000050	mg/L	0.00115	0.000713	0.000729	0.00330	0.00391	0.000651	0.000755	0.00109	0.000657	0.00107	0.00107	0.00854	0.00822
Nickel, dissolved	0.00050	mg/L	0.00380	<0.00050	<0.00050	0.0563	0.00466	<0.00050	<0.00050	0.00450	<0.00050	0.00338	0.00412	0.00606	0.00560
Potassium, dissolved	0.050	mg/L	1.85	1.91	2.57	7.23	2.10	2.37	1.75	1.86	1.68	1.77	2.17	2.90	2.84
Selenium, dissolved	0.050	µg/L	103	110	103	176	97.9	96.7	100	96.5	99.7	98.3	90.3	98.6	89.9
Silicon, dissolved	0.050	mg/L	1.88	2.48	2.55	1.80	1.66	2.34	2.15	1.65	2.23	1.60	1.66	1.90	1.79
Silver, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium, dissolved	0.050	mg/L	3.17	3.53	7.91	13.0	4.08	7.01	3.30	3.15	3.70	3.12	3.69	6.33	6.25
Strontium, dissolved	0.00020	mg/L	0.210	0.184	0.199	0.514	0.202	0.193	0.166	0.223	0.171	0.198	0.223	0.245	0.229
Sulfur, dissolved	0.50	mg/L	152	136	169	281	184	154	132	136	135	142	134	239	224
Thallium, dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	0.000050	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin, dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium, dissolved	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00060	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium, dissolved	0.000010	mg/L	0.00496	0.00410	0.00534	0.0156	0.00526	0.00459	0.00351	0.00460	0.00349	0.00450	0.00460	0.00745	0.00695
Vanadium, dissolved	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00100	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc, dissolved	0.0010	mg/L	0.0021	<0.0010	<0.0010	0.0324	0.0027	<0.0010	<0.0010	0.0024	<0.0010	0.0021	0.0022	0.0028	0.0019
Dissolved mercury filtration location			Field	Field	Field	Field	Field	Field	Field	Field	Field	Field	Field	Field	Field
Dissolved metals filtration location			Field	Field	Field	Field	Field	Field	Field	Field	Field	Field	Field	Field	Field

Qualifier Legend

DLDS Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
 DLM Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
 RRV Reported result verified by repeat analysis.
 TKN TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.

Results Summary CG2217060

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 09-Dec-2022 09:05
Issue Date 17-Jan-2023 15:18
Amendment 3

Client Sample ID			RG_FBLANK_WS_LA EMP_FRO_2022- 12_NP	RG_TRIP_WS_LAEM P_FRO_2022-12_NP	RG_RIVER_WS_LAE MP_FRO_2022- 12_NP	RG_FBLANK2_WS_L AEMP_FRO_2022- 12_NP
Date Sampled			07-Dec-2022	07-Dec-2022	07-Dec-2022	08-Dec-2022
Time Sampled			14:00	14:00	14:00	14:30
ALS Sample ID			CG2217060-014	CG2217060-015	CG2217060-016	CG2217060-017
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Physical Tests (Matrix: Water)						
Conductivity	2.0	µS/cm	<2.0	<2.0	1310	<2.0
Acidity (as CaCO3)	2.0	mg/L	<2.0	<2.0	<2.0	<2.0
Alkalinity, bicarbonate (as CaCO3)	1.0	mg/L	<1.0	<1.0	257	<1.0
Alkalinity, bicarbonate (as HCO3)	1.0	mg/L	<1.0	<1.0	313	<1.0
Alkalinity, carbonate (as CO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0
Alkalinity, carbonate (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as CaCO3)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as OH)	1.0	mg/L	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO3)	1.0	mg/L	<1.0	<1.0	257	<1.0
Hardness (as CaCO3), dissolved	0.50	mg/L	<0.50	<0.50	745	<0.50
Oxidation-reduction potential [ORP]	0.10	mV	504	563	417	569
Solids, total dissolved [TDS]	10	mg/L	<10	<10	983	<10
Solids, total suspended [TSS]	1.0	mg/L	<1.0	<1.0	<1.0	<1.0
Turbidity	0.10	NTU	<0.10	<0.10	0.23	<0.10
pH	0.10	pH units	5.54	5.56	8.13	5.55
Anions and Nutrients (Matrix: Water)						
Ammonia, total (as N)	0.0050	mg/L	<0.0050	0.0159	<0.0050	<0.0050
Bromide	0.050	mg/L	<0.050	<0.050	<0.250	<0.050
Chloride	0.10	mg/L	<0.10	<0.10	17.0	<0.10
Fluoride	0.020	mg/L	<0.020	<0.020	0.154	<0.020
Kjeldahl nitrogen, total [TKN]	0.050	mg/L	<0.050	<0.050	1.72	<0.050
Nitrate (as N)	0.0050	mg/L	<0.0050	<0.0050	23.0	<0.0050
Nitrite (as N)	0.0010	mg/L	<0.0010	<0.0010	<0.0050	<0.0010
Phosphate, ortho-, dissolved (as P)	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus, total	0.0020	mg/L	<0.0020	<0.0020	0.0030	<0.0020
Sulfate (as SO4)	0.30	mg/L	<0.30	<0.30	451	<0.30
Organic / Inorganic Carbon (Matrix: Water)						
Carbon, dissolved organic [DOC]	0.50	mg/L	<0.50		<0.50	<0.50
Carbon, total organic [TOC]	0.50	mg/L	<0.50	<0.50	<0.50	<0.50
Ion Balance (Matrix: Water)						
Anion sum	0.10	meq/L	<0.10	<0.10	16.6	<0.10
Cation sum	0.10	meq/L	<0.10	<0.10	15.3	<0.10
Ion balance (APHA)	0.01	%	<0.01	<0.01	-4.08	<0.01
Ion balance (cations/anions)	0.010	%	100	100	92.2	100

Results Summary CG2217060

Project Regional Effects Program
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Client Sample ID			RG_FBLANK_WS_LA EMP_FRO_2022- 12_NP	RG_TRIP_WS_LAEM P_FRO_2022-12_NP	RG_RIVER_WS_LAE MP_FRO_2022- 12_NP	RG_FBLANK2_WS_L AEMP_FRO_2022- 12_NP
Date Sampled			07-Dec-2022	07-Dec-2022	07-Dec-2022	08-Dec-2022
Time Sampled			14:00	14:00	14:00	14:30
ALS Sample ID			CG2217060-014	CG2217060-015	CG2217060-016	CG2217060-017
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Total Metals (Matrix: Water)						
Aluminum, total	0.0030	mg/L	<0.0030	<0.0030	0.0034	<0.0030
Antimony, total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic, total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Barium, total	0.00010	mg/L	<0.00010	0.00017	0.0997	<0.00010
Beryllium, total	0.020	µg/L	<0.020	<0.020	<0.020	<0.020
Bismuth, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050
Boron, total	0.010	mg/L	<0.010	<0.010	0.016	<0.010
Cadmium, total	0.0050	µg/L	<0.0050	<0.0050	0.0465	<0.0050
Calcium, total	0.050	mg/L	<0.050	<0.050	189	<0.050
Chromium, total	0.00010	mg/L	<0.00010	<0.00010	0.00017	<0.00010
Cobalt, total	0.10	µg/L	<0.10	<0.10	<0.10	<0.10
Copper, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
Iron, total	0.010	mg/L	<0.010	<0.010	<0.010	<0.010
Lead, total	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050
Lithium, total	0.0010	mg/L	<0.0010	<0.0010	0.0667	<0.0010
Magnesium, total	0.0050	mg/L	<0.0050	<0.0050	88.0	<0.0050
Manganese, total	0.00010	mg/L	<0.00010	<0.00010	0.00048	<0.00010
Mercury, total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum, total	0.000050	mg/L	<0.000050	<0.000050	0.000781	<0.000050
Nickel, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
Potassium, total	0.050	mg/L	<0.050	<0.050	2.72	<0.050
Selenium, total	0.050	µg/L	<0.050	<0.050	98.1	<0.050
Silicon, total	0.10	mg/L	<0.10	<0.10	2.51	<0.10
Silver, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010
Sodium, total	0.050	mg/L	<0.050	<0.050	8.40	<0.050
Strontium, total	0.00020	mg/L	<0.00020	<0.00020	0.204	<0.00020
Sulfur, total	0.50	mg/L	<0.50	<0.50	158	<0.50
Thallium, total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010
Tin, total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Titanium, total	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030
Uranium, total	0.000010	mg/L	<0.000010	<0.000010	0.00482	<0.000010
Vanadium, total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
Zinc, total	0.0030	mg/L	<0.0030	<0.0030	<0.0030	<0.0030

Results Summary CG2217060

Project Regional Effects Program
Report To Mike Pope, Teck Coal Limited
Date Received 09-Dec-2022 09:05
Issue Date 17-Jan-2023 15:18
Amendment 3

Client Sample ID			RG_FBLANK_WS_LA EMP_FRO_2022- 12_NP	RG_TRIP_WS_LAEM P_FRO_2022-12_NP	RG_RIVER_WS_LAE MP_FRO_2022- 12_NP	RG_FBLANK2_WS_L AEMP_FRO_2022- 12_NP
Date Sampled			07-Dec-2022	07-Dec-2022	07-Dec-2022	08-Dec-2022
Time Sampled			14:00	14:00	14:00	14:30
ALS Sample ID			CG2217060-014	CG2217060-015	CG2217060-016	CG2217060-017
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Dissolved Metals (Matrix: Water)						
Aluminum, dissolved	0.0010	mg/L	<0.0010		<0.0010	<0.0010
Antimony, dissolved	0.00010	mg/L	<0.00010		<0.00010	<0.00010
Arsenic, dissolved	0.00010	mg/L	<0.00010		<0.00010	<0.00010
Barium, dissolved	0.00010	mg/L	<0.00010		0.0967	<0.00010
Beryllium, dissolved	0.020	µg/L	<0.020		<0.020	<0.020
Bismuth, dissolved	0.000050	mg/L	<0.000050		<0.000050	<0.000050
Boron, dissolved	0.010	mg/L	<0.010		0.015	<0.010
Cadmium, dissolved	0.0050	µg/L	<0.0050		0.0490	<0.0050
Calcium, dissolved	0.050	mg/L	<0.050	<0.050	170	<0.050
Chromium, dissolved	0.00010	mg/L	<0.00010		0.00015	<0.00010
Cobalt, dissolved	0.10	µg/L	<0.10		<0.10	<0.10
Copper, dissolved	0.00020	mg/L	<0.00020		<0.00020	<0.00020
Iron, dissolved	0.010	mg/L	<0.010		<0.010	<0.010
Lead, dissolved	0.000050	mg/L	<0.000050		<0.000050	<0.000050
Lithium, dissolved	0.0010	mg/L	<0.0010		0.0682	<0.0010
Magnesium, dissolved	0.0050	mg/L	<0.0050	<0.0050	77.9	<0.0050
Manganese, dissolved	0.00010	mg/L	<0.00010		0.00044	<0.00010
Mercury, dissolved	0.0000050	mg/L	<0.0000050		<0.0000050	<0.0000050
Molybdenum, dissolved	0.000050	mg/L	<0.000050		0.000778	<0.000050
Nickel, dissolved	0.00050	mg/L	<0.00050		<0.00050	<0.00050
Potassium, dissolved	0.050	mg/L	<0.050	<0.050	2.56	<0.050
Selenium, dissolved	0.050	µg/L	<0.050		123	<0.050
Silicon, dissolved	0.050	mg/L	<0.050		2.64	<0.050
Silver, dissolved	0.000010	mg/L	<0.000010		<0.000010	<0.000010
Sodium, dissolved	0.050	mg/L	<0.050	<0.050	7.69	<0.050
Strontium, dissolved	0.00020	mg/L	<0.00020		0.209	<0.00020
Sulfur, dissolved	0.50	mg/L	<0.50		186	<0.50
Thallium, dissolved	0.000010	mg/L	<0.000010		<0.000010	<0.000010
Tin, dissolved	0.00010	mg/L	<0.00010		<0.00010	<0.00010
Titanium, dissolved	0.00030	mg/L	<0.00030		<0.00030	<0.00030
Uranium, dissolved	0.000010	mg/L	<0.000010		0.00524	<0.000010
Vanadium, dissolved	0.00050	mg/L	<0.00050		<0.00050	<0.00050
Zinc, dissolved	0.0010	mg/L	<0.0010		<0.0010	<0.0010
Dissolved mercury filtration location			Field		Field	Field
Dissolved metals filtration location			Field	Laboratory	Field	Field

Qualifier Legend

DLDS Detection Limit Raised: Dilution require
 DLM Detection Limit Adjusted due to sample
 RRV Reported result verified by repeat anal
 TKN TKN result may be biased low due to N



Project: 22-14 (FRO LAEMP)
 Minnow Environmental (BC)
 Taxonomist: Scott Finlayson
scottfinlayson@cordilleraconsulting.ca
 250-494-7553

	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Site:	RG_FO22_BIC-1_2022	RG_FO22_BIC-2_2022	RG_FO22_BIC-3_2022	RG_FO22_BIC-4_2022	RG_FO22_BIC-5_2022	RG_FO26_BIC-1_2022	RG_FO26_BIC-2_2022	RG_FO26_BIC-3_2022	RG_FOBCP_BIC-1_2022-09-14_N	RG_FOBCP_BIC-2_2022-09-14_N	RG_FOBCP_BIC-3_2022-09-15_N
Sample:	09-09_N	09-09_N	09-09_N	09-09_N	09-09_N	09-16_N	09-16_N	09-16_N	14-Sep-22	14-Sep-22	15-Sep-22
Sample Collection Date:	09-Sep-22	09-Sep-22	09-Sep-22	09-Sep-22	09-Sep-22	16-Sep-22	16-Sep-22	16-Sep-22	14-Sep-22	14-Sep-22	15-Sep-22
CC#:	CC231137	CC231138	CC231139	CC231140	CC231141	CC231142	CC231143	CC231144	CC231145	CC231146	CC231147
Phylum: Arthropoda	0	0	0	0	0	0	0	0	0	0	0
Order: Collembola	0	0	20	0	0	0	0	0	0	0	0
Subphylum: Hexapoda	0	0	0	0	0	0	0	0	0	0	0
Class: Insecta	0	0	0	0	0	0	0	0	0	0	0
Order: Ephemeroptera	0	0	0	0	0	0	0	0	0	0	0
Family: Ameletidae	40	20	0	0	0	220	40	40	20	0	10
Family: Baetidae	320	380	780	420	660	1660	1780	2240	80	400	70
Family: Ephemerellidae	120	180	300	60	80	4980	4980	5260	380	300	310
Family: Heptageniidae	440	420	520	280	420	8920	17500	13020	2300	1120	1150
Order: Plecoptera	0	40	0	0	0	140	180	360	0	0	0
Family: Capniidae	80	160	260	440	280	0	20	0	20	60	30
Family: Chloroperlidae	0	40	60	40	80	420	560	460	60	20	40
Family: Leuctridae	0	0	0	0	0	60	40	100	0	0	0
Family: Nemouridae	240	560	1920	620	660	1400	2360	2280	440	820	150
Family: Peltoperlidae	0	0	0	0	0	0	0	20	0	0	0
Family: Perlidae	0	0	0	0	0	0	0	0	20	20	30
Family: Perlodidae	1180	2660	3640	3320	2560	300	700	960	780	740	380
Family: Pteronarcyidae	0	0	0	0	0	0	0	0	0	0	0
Family: Taeniopterygidae	20	20	180	20	140	420	820	1140	80	240	130
Order: Trichoptera	0	40	60	20	60	860	820	2360	0	0	0
Family: Apataniidae	20	220	20	220	20	0	0	0	0	0	10
Family: Brachycentridae	0	0	0	0	0	0	0	0	80	60	0
Family: Glossosomatidae	0	340	140	340	360	0	20	40	120	20	40
Family: Hydropsychidae	0	0	0	0	0	840	2320	2360	300	320	100
Family: Limnephilidae	80	340	1280	440	420	20	0	160	20	0	0
Family: Rhyacophilidae	100	280	460	380	340	440	1580	1260	240	500	110
Family: Thremmatidae	0	0	0	20	0	160	80	120	0	0	0
Order: Coleoptera	0	0	0	0	0	0	0	0	0	0	0
Family: Curculionidae	0	0	0	0	0	0	0	0	0	0	0
Family: Dytiscidae	0	0	0	0	0	0	0	0	0	0	0
Family: Elmidae	1060	3620	5200	1760	2460	0	0	0	20	0	0
Family: Staphylinidae	0	0	0	0	0	0	0	0	0	0	0



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	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Site:	RG_FO22_BIC-1_2022-	RG_FO22_BIC-2_2022-	RG_FO22_BIC-3_2022-	RG_FO22_BIC-4_2022-	RG_FO22_BIC-5_2022-	RG_FO26_BIC-1_2022-	RG_FO26_BIC-2_2022-	RG_FO26_BIC-3_2022-	RG_FOBCP_BIC-1_2022-09-14_N	RG_FOBCP_BIC-2_2022-09-14_N	RG_FOBCP_BIC-3_2022-09-15_N
Sample:	09-09_N	09-09_N	09-09_N	09-09_N	09-09_N	09-16_N	09-16_N	09-16_N	14-Sep-22	14-Sep-22	15-Sep-22
Sample Collection Date:	09-Sep-22	09-Sep-22	09-Sep-22	09-Sep-22	09-Sep-22	16-Sep-22	16-Sep-22	16-Sep-22	14-Sep-22	14-Sep-22	15-Sep-22
CC#:	CC231137	CC231138	CC231139	CC231140	CC231141	CC231142	CC231143	CC231144	CC231145	CC231146	CC231147
Order: Diptera	0	0	0	0	0	0	0	0	0	0	0
Family: Ceratopogonidae	20	100	240	60	100	280	260	620	180	20	0
Family: Chironomidae	1560	1180	2480	720	1240	3680	2720	3480	400	2120	240
Family: Empididae	0	160	20	20	80	0	40	20	40	20	30
Family: Limoniidae	0	60	0	0	0	0	0	0	0	0	0
Family: Muscidae	0	0	0	0	0	0	0	0	0	0	0
Family: Pelecorhynchidae	0	0	0	0	0	0	0	20	0	0	0
Family: Psychodidae	180	80	420	20	180	7620	7440	8160	4140	3520	1460
Family: Simuliidae	20	0	120	0	140	40	20	40	20	300	20
Family: Tipulidae	420	360	80	200	60	0	40	0	0	0	30
Order: Hemiptera	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Chelicerata	0	0	0	0	0	0	0	0	0	0	0
Class: Arachnida	0	0	0	0	0	0	0	0	0	0	0
Order: Trombidiformes	0	0	0	0	0	0	0	0	0	0	0
Family: Aturidae	0	0	0	0	0	0	20	0	0	0	0
Family: Feltriidae	0	0	0	0	0	0	20	40	0	0	0
Family: Hydryphantidae	0	0	0	0	0	0	0	20	0	0	0
Family: Hygrobatidae	0	0	0	0	0	0	0	0	0	0	0
Family: Lebertiidae	260	160	260	260	40	80	20	60	220	180	180
Family: Pionidae	0	0	0	0	0	0	0	0	0	0	0
Family: Sperchontidae	0	20	0	20	0	180	520	320	20	0	10
Family: Torrenticolidae	0	0	0	0	0	0	0	0	0	0	0
Suborder: Prostigmata	0	0	0	0	0	0	0	0	0	0	0
Family: Stygothrombidiidae	0	0	0	0	0	0	0	0	0	0	0
Order: Sarcoptiformes	0	0	0	0	0	0	0	0	0	0	0
Order: Oribatida	0	0	0	0	0	0	0	0	0	0	0
Family: Hydrozetidae	0	0	0	0	0	0	0	0	0	0	0
Class: Malacostraca	0	0	0	0	0	0	0	0	0	0	0
Order: Amphipoda	0	0	0	0	0	0	0	0	0	0	0
Family: Gammaridae	20	0	0	0	0	0	0	0	0	0	0



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Site:	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Sample:	RG_FO22_BIC-1_2022	RG_FO22_BIC-2_2022	RG_FO22_BIC-3_2022	RG_FO22_BIC-4_2022	RG_FO22_BIC-5_2022	RG_FO26_BIC-1_2022	RG_FO26_BIC-2_2022	RG_FO26_BIC-3_2022	RG_FOBCP_BIC-1_2022-09-14_N	RG_FOBCP_BIC-2_2022-09-14_N	RG_FOBCP_BIC-3_2022-09-15_N
Sample Collection Date:	09-09_N	09-09_N	09-09_N	09-09_N	09-09_N	09-16_N	09-16_N	09-16_N	14-Sep-22	14-Sep-22	15-Sep-22
CC#:	CC231137	CC231138	CC231139	CC231140	CC231141	CC231142	CC231143	CC231144	CC231145	CC231146	CC231147
Phylum: Mollusca	0	0	0	0	0	0	0	0	0	0	0
Class: Bivalvia	0	0	0	0	0	0	0	0	0	0	0
Order: Veneroida	0	0	0	0	0	0	0	0	0	0	0
Family: Pisidiidae	260	220	60	60	120	0	0	0	0	0	0
Class: Gastropoda	0	20	0	0	0	0	0	0	0	0	0
Phylum: Annelida	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Clitellata	0	0	0	0	0	0	0	0	0	0	0
Class: Oligochaeta	0	0	0	0	0	0	0	0	0	0	0
Order: Lumbriculida	0	0	0	0	0	0	0	0	0	0	0
Family: Lumbriculidae	0	0	0	0	0	0	0	0	0	0	0
Order: Tubificida	0	0	0	0	0	0	0	0	0	0	0
Family: Enchytraeidae	0	0	20	0	0	0	0	0	0	20	0
Family: Naididae	60	0	140	0	60	0	0	0	60	100	0
Phylum: Cnidaria	0	0	0	0	0	0	0	0	0	0	0
Class: Hydrozoa	0	0	0	0	0	0	0	0	0	0	0
Order: Anthoathecatae	0	0	0	0	0	0	0	0	0	0	0
Family: Hydridae	0	0	0	0	0	0	0	0	0	0	0
Totals:	6500	11680	18680	9740	10560	32720	44900	44960	10040	10900	4530

Taxa present but not included:

Phylum: Arthropoda	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Hexapoda	0	0	0	0	0	0	0	0	0	0	0
Class: Insecta	0	0	0	0	0	0	0	0	0	0	0
Order: Diptera	0	0	0	0	0	0	0	0	0	0	0
Family: Cecidomyiidae	0	0	0	0	0	0	0	0	0	20	50
Subphylum: Crustacea	0	0	0	0	0	0	0	0	0	0	0
Class: Ostracoda	20	20	20	0	20	20	20	20	0	20	10
Class: Branchiopoda	0	0	0	0	0	0	0	0	0	0	0
Order: Cladocera	0	0	0	0	0	0	20	0	0	0	0
Family: Daphniidae	0	0	0	0	0	0	0	0	0	0	0



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Site:	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Sample:	RG_FO22_BIC-1_2022	RG_FO22_BIC-2_2022	RG_FO22_BIC-3_2022	RG_FO22_BIC-4_2022	RG_FO22_BIC-5_2022	RG_FO26_BIC-1_2022	RG_FO26_BIC-2_2022	RG_FO26_BIC-3_2022	RG_FOBCP_BIC-1_2022-09-14_N	RG_FOBCP_BIC-2_2022-09-14_N	RG_FOBCP_BIC-3_2022-09-15_N
Sample Collection Date:	09-09_N	09-09_N	09-09_N	09-09_N	09-09_N	09-16_N	09-16_N	09-16_N	14-Sep-22	14-Sep-22	15-Sep-22
CC#:	CC231137	CC231138	CC231139	CC231140	CC231141	CC231142	CC231143	CC231144	CC231145	CC231146	CC231147
Class: Maxillipoda	0	0	0	0	0	0	0	0	0	0	0
Class: Copepoda	0	0	0	0	0	0	0	0	0	0	0
Phylum: Annelida	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Clitellata	0	0	0	0	0	0	0	0	0	0	0
Class: Oligochaeta	0	0	0	0	0	0	0	0	0	0	0
Order: Tubificida	0	0	0	0	0	0	0	0	0	0	0
Family: Lumbricidae	0	0	0	0	0	0	0	0	20	0	10
Phylum: Nemata	20	20	20	0	20	0	20	20	20	0	10
Phylum: Platyhelminthes	0	0	0	0	0	0	0	0	0	0	0
Class: Turbellaria	20	20	20	20	20	20	0	20	20	20	10
Totals:	60	60	60	20	60	40	60	60	60	60	90

ND designation of a taxa represents a non-distinct taxa. This adjusts where the associated taxa fall in the metrics for this sample because the individuals are likely represented by Genus or Species level identifications.



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	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Site:	RG_FOBCP_BIC-	RG_FOBCP_BIC-	RG_FOBKS_BIC-	RG_FOBKS_BIC-	RG_FOBKS_BIC-	RG_FOBSC_BIC-	RG_FOBSC_BIC-	RG_FOBSC_BIC-	RG_FODNGD_BIC-	RG_FODNGD_BIC-
Sample:	4_2022-09-15_N	5_2022-09-15_N	1_2022-09-12_N	2_2022-09-13_N	3_2022-09-13_N	1_2022-09-13_N	2_2022-09-14_N	3_2022-09-14_N	1_2022-09-15_N	2_2022-09-15_N
Sample Collection Date:	15-Sep-22	15-Sep-22	12-Sep-22	13-Sep-22	13-Sep-22	13-Sep-22	14-Sep-22	14-Sep-22	15-Sep-22	15-Sep-22
CC#:	CC231148	CC231149	CC231150	CC231151	CC231152	CC231153	CC231154	CC231155	CC231156	CC231157
Phylum: Arthropoda	0	0	0	0	0	0	0	0	0	0
Order: Collembola	0	0	0	0	0	0	0	0	0	0
Subphylum: Hexapoda	0	0	0	0	0	0	0	0	0	0
Class: Insecta	0	0	0	0	0	0	0	0	0	0
Order: Ephemeroptera	0	0	0	0	0	0	0	0	0	0
Family: Ameletidae	0	20	0	0	0	40	0	0	0	20
Family: Baetidae	320	140	100	20	20	280	120	140	140	160
Family: Ephemerellidae	520	260	240	240	300	700	580	780	1300	1140
Family: Heptageniidae	1720	1260	2500	2640	2300	2800	2480	4580	3260	4960
Order: Plecoptera	0	0	0	0	0	0	0	0	0	20
Family: Capniidae	0	0	20	20	0	100	40	0	0	0
Family: Chloroperlidae	20	0	60	0	40	160	0	100	180	60
Family: Leuctridae	0	0	0	0	0	0	0	0	20	0
Family: Nemouridae	680	1300	280	60	440	920	500	880	100	420
Family: Peltoperlidae	0	0	0	0	0	0	0	0	0	20
Family: Perlidae	120	100	20	100	0	20	40	0	0	20
Family: Perlodidae	680	780	320	440	480	580	480	940	380	660
Family: Pteronarcyidae	0	0	0	0	0	20	0	0	0	0
Family: Taeniopterygidae	120	120	120	60	160	240	80	300	120	280
Order: Trichoptera	0	0	20	0	0	0	0	0	0	20
Family: Apataniidae	0	0	0	80	0	0	0	0	0	0
Family: Brachycentridae	0	20	40	40	20	80	140	100	0	40
Family: Glossosomatidae	80	0	20	20	0	0	220	20	80	60
Family: Hydropsychidae	260	380	200	80	160	540	460	320	140	20
Family: Limnephilidae	0	0	20	0	0	0	0	0	20	0
Family: Rhyacophilidae	760	740	420	500	760	500	700	1220	440	800
Family: Thremmatidae	0	0	0	20	0	0	0	0	0	0
Order: Coleoptera	0	0	0	0	0	0	0	0	0	0
Family: Curculionidae	0	0	0	0	0	0	0	0	0	0
Family: Dytiscidae	0	0	0	0	0	0	0	0	0	0
Family: Elmidae	40	0	0	20	0	40	20	20	20	20
Family: Staphylinidae	0	0	0	0	0	0	0	0	0	20



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	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Site:	RG_FOBCP_BIC-	RG_FOBCP_BIC-	RG_FOBKS_BIC-	RG_FOBKS_BIC-	RG_FOBKS_BIC-	RG_FOBSC_BIC-	RG_FOBSC_BIC-	RG_FOBSC_BIC-	RG_FODNGD_BIC-	RG_FODNGD_BIC-
Sample:	4_2022-09-15_N	5_2022-09-15_N	1_2022-09-12_N	2_2022-09-13_N	3_2022-09-13_N	1_2022-09-13_N	2_2022-09-14_N	3_2022-09-14_N	1_2022-09-15_N	2_2022-09-15_N
Sample Collection Date:	15-Sep-22	15-Sep-22	12-Sep-22	13-Sep-22	13-Sep-22	13-Sep-22	14-Sep-22	14-Sep-22	15-Sep-22	15-Sep-22
CC#:	CC231148	CC231149	CC231150	CC231151	CC231152	CC231153	CC231154	CC231155	CC231156	CC231157
Order: Diptera	0	0	0	0	0	0	0	0	0	0
Family: Ceratopogonidae	40	120	40	40	140	60	120	260	20	60
Family: Chironomidae	540	560	140	60	440	1420	840	960	500	180
Family: Empididae	20	20	20	0	40	80	0	40	0	0
Family: Limoniidae	0	0	0	0	0	0	0	0	0	0
Family: Muscidae	0	0	0	0	0	0	0	0	20	0
Family: Pelecorhynchidae	0	0	0	0	0	0	0	0	0	0
Family: Psychodidae	2360	2700	2740	3280	4040	5480	4860	10400	2740	5180
Family: Simuliidae	360	340	40	0	20	160	580	120	0	0
Family: Tipulidae	100	40	20	20	0	0	20	0	40	0
Order: Hemiptera	0	0	0	0	0	0	0	0	0	0
Subphylum: Chelicerata	0	0	0	0	0	0	0	0	0	0
Class: Arachnida	0	0	0	0	0	0	0	0	0	0
Order: Trombidiformes	0	0	0	0	0	0	0	0	0	0
Family: Aturidae	0	0	0	0	0	0	0	0	0	0
Family: Feltriidae	0	0	0	0	0	0	0	0	0	0
Family: Hydryphantidae	0	0	0	0	0	0	0	0	0	0
Family: Hygrobatidae	0	20	0	0	0	0	0	0	0	0
Family: Lebertiidae	80	60	0	120	40	200	80	100	60	20
Family: Pionidae	0	0	0	0	0	0	20	0	0	0
Family: Sperchontidae	0	0	0	0	0	0	0	0	20	0
Family: Torrenticolidae	0	0	0	0	0	0	0	0	0	0
Suborder: Prostigmata	0	0	0	0	0	0	0	0	0	0
Family: Stygothrombidiidae	0	0	0	0	0	0	0	0	0	0
Order: Sarcoptiformes	0	0	0	0	0	0	0	0	0	0
Order: Oribatida	0	0	0	0	0	0	0	0	0	0
Family: Hydrozetidae	0	0	0	0	0	0	0	0	0	20
Class: Malacostraca	0	0	0	0	0	0	0	0	0	0
Order: Amphipoda	0	0	0	0	0	0	0	0	0	0
Family: Gammaridae	0	0	0	0	0	0	0	0	0	0



Project: 22-14 (FRO LAEMP)
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 Taxonomist: Scott Finlayson
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 250-494-7553

	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Site:	RG_FOBCP_BIC-	RG_FOBCP_BIC-	RG_FOBKS_BIC-	RG_FOBKS_BIC-	RG_FOBKS_BIC-	RG_FOBSC_BIC-	RG_FOBSC_BIC-	RG_FOBSC_BIC-	RG_FODNGD_BIC-	RG_FODNGD_BIC-
Sample:	4_2022-09-15_N	5_2022-09-15_N	1_2022-09-12_N	2_2022-09-13_N	3_2022-09-13_N	1_2022-09-13_N	2_2022-09-14_N	3_2022-09-14_N	1_2022-09-15_N	2_2022-09-15_N
Sample Collection Date:	15-Sep-22	15-Sep-22	12-Sep-22	13-Sep-22	13-Sep-22	13-Sep-22	14-Sep-22	14-Sep-22	15-Sep-22	15-Sep-22
CC#:	CC231148	CC231149	CC231150	CC231151	CC231152	CC231153	CC231154	CC231155	CC231156	CC231157
Phylum: Mollusca	0	0	0	0	0	0	0	0	0	0
Class: Bivalvia	0	0	0	0	0	0	0	0	0	0
Order: Veneroida	0	0	0	0	0	0	0	0	0	0
Family: Pisidiidae	0	0	0	0	0	0	0	0	0	0
Class: Gastropoda	0	0	0	0	0	0	0	0	0	0
Phylum: Annelida	0	0	0	0	0	0	0	0	0	0
Subphylum: Clitellata	0	0	0	0	0	0	0	0	0	0
Class: Oligochaeta	0	0	0	0	0	0	0	0	0	0
Order: Lumbriculida	0	0	0	0	0	0	0	0	0	0
Family: Lumbriculidae	0	0	0	0	0	0	0	0	0	0
Order: Tubificida	0	0	0	0	0	0	0	0	0	0
Family: Enchytraeidae	40	20	20	20	20	20	100	180	0	20
Family: Naididae	120	160	320	40	900	1400	1560	880	0	0
Phylum: Cnidaria	0	0	0	0	0	0	0	0	0	0
Class: Hydrozoa	0	0	0	0	0	0	0	0	0	0
Order: Anthoathecatae	0	0	0	0	0	0	0	0	0	0
Family: Hydridae	0	0	0	0	0	0	0	0	0	0
Totals:	8980	9160	7720	7920	10320	15840	14040	22340	9600	14180

Taxa present but not included:

Phylum: Arthropoda	0	0	0	0	0	0	0	0	0	0
Subphylum: Hexapoda	0	0	0	0	0	0	0	0	0	0
Class: Insecta	0	0	0	0	0	0	0	0	0	0
Order: Diptera	0	0	0	0	0	0	0	0	0	0
Family: Cecidomyiidae	0	0	0	0	0	0	0	0	0	0
Subphylum: Crustacea	0	0	0	0	0	0	0	0	0	0
Class: Ostracoda	0	0	20	0	20	20	20	0	20	20
Class: Branchiopoda	0	0	0	0	0	0	0	0	0	0
Order: Cladocera	0	0	0	20	0	0	0	0	0	0
Family: Daphniidae	0	0	0	0	0	0	0	0	0	0



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	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Site:	RG_FOBCP_BIC-	RG_FOBCP_BIC-	RG_FOBKS_BIC-	RG_FOBKS_BIC-	RG_FOBKS_BIC-	RG_FOBSC_BIC-	RG_FOBSC_BIC-	RG_FOBSC_BIC-	RG_FODNGD_BIC-	RG_FODNGD_BIC-
Sample:	4_2022-09-15_N	5_2022-09-15_N	1_2022-09-12_N	2_2022-09-13_N	3_2022-09-13_N	1_2022-09-13_N	2_2022-09-14_N	3_2022-09-14_N	1_2022-09-15_N	2_2022-09-15_N
Sample Collection Date:	15-Sep-22	15-Sep-22	12-Sep-22	13-Sep-22	13-Sep-22	13-Sep-22	14-Sep-22	14-Sep-22	15-Sep-22	15-Sep-22
CC#:	CC231148	CC231149	CC231150	CC231151	CC231152	CC231153	CC231154	CC231155	CC231156	CC231157
Class: Maxillipoda	0	0	0	0	0	0	0	0	0	0
Class: Copepoda	0	0	0	0	0	0	0	0	20	0
Phylum: Annelida	0	0	0	0	0	0	0	0	0	0
Subphylum: Clitellata	0	0	0	0	0	0	0	0	0	0
Class: Oligochaeta	0	0	0	0	0	0	0	0	0	0
Order: Tubificida	0	0	0	0	0	0	0	0	0	0
Family: Lumbricidae	0	0	0	0	0	0	0	0	0	0
Phylum: Nemata	20	20	20	20	20	20	20	20	0	20
Phylum: Platyhelminthes	0	0	0	0	0	0	0	0	0	0
Class: Turbellaria	20	20	20	20	20	20	20	20	20	20
Totals:	40	40	60	60	60	60	60	40	60	40

ND designation of a taxa represents a non-



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	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Site:	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-
Sample:	1_2022-09-16_N	2_2022-09-16_N	3_2022-09-16_N	1_2022-09-10_N	2_2022-09-10_N	3_2022-09-10_N	1_2022-09-13_N	2_2022-09-13_N	3_2022-09-13_N	1_2022-09-15_N	2_2022-09-15_N
Sample Collection Date:	16-Sep-22	16-Sep-22	16-Sep-22	10-Sep-22	10-Sep-22	10-Sep-22	13-Sep-22	13-Sep-22	13-Sep-22	15-Sep-22	15-Sep-22
CC#:	CC231159	CC231160	CC231161	CC231162	CC231163	CC231164	CC231165	CC231166	CC231167	CC231168	CC231169
Phylum: Arthropoda	0	0	0	0	0	0	0	0	0	0	0
Order: Collembola	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Hexapoda	0	0	0	0	0	0	0	0	0	0	0
Class: Insecta	0	0	0	0	0	0	0	0	0	0	0
Order: Ephemeroptera	0	0	0	0	0	0	0	0	0	0	0
Family: Ameletidae	220	80	0	20	120	67	20	20	0	0	0
Family: Baetidae	140	260	720	300	140	117	120	200	40	180	320
Family: Ephemerellidae	2560	2740	2500	100	460	167	400	420	560	940	1900
Family: Heptageniidae	13500	15360	11920	1540	2380	1050	2600	1760	4140	2920	8960
Order: Plecoptera	0	20	20	60	20	0	20	0	0	20	20
Family: Capniidae	0	0	0	260	120	17	80	40	20	0	0
Family: Chloroperlidae	140	440	600	180	40	17	0	0	80	80	320
Family: Leuctridae	20	40	20	0	0	0	0	0	0	0	20
Family: Nemouridae	480	740	560	560	440	317	60	180	140	360	320
Family: Peltoperlidae	0	0	0	0	0	0	0	0	0	0	0
Family: Perlidae	0	0	0	20	0	0	20	20	0	0	0
Family: Perlodidae	280	680	940	580	1020	567	160	60	300	620	460
Family: Pteronarcyidae	0	0	0	0	0	0	0	0	0	0	0
Family: Taeniopterygidae	220	400	140	160	260	17	40	0	60	20	260
Order: Trichoptera	0	0	0	40	40	0	0	0	0	40	0
Family: Apataniidae	0	0	0	0	0	0	20	0	0	0	0
Family: Brachycentridae	0	20	60	0	40	0	40	20	40	0	0
Family: Glossosomatidae	80	0	20	0	20	17	40	40	0	120	60
Family: Hydropsychidae	80	140	240	120	180	250	120	140	360	0	60
Family: Limnephilidae	0	20	0	0	240	0	0	0	0	180	40
Family: Rhyacophilidae	560	1960	1080	260	540	201	80	300	160	780	2500
Family: Thremmatidae	0	0	0	0	0	0	0	0	0	0	0
Order: Coleoptera	0	0	0	0	0	0	0	0	0	0	0
Family: Curculionidae	0	0	0	0	0	0	0	0	0	0	0
Family: Dytiscidae	0	0	0	0	20	0	0	0	0	0	0
Family: Elmidae	0	0	0	160	860	567	0	0	40	20	0
Family: Staphylinidae	0	0	0	0	0	0	0	0	0	0	0



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 250-494-7553

	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Site:	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-
Sample:	1_2022-09-16_N	2_2022-09-16_N	3_2022-09-16_N	1_2022-09-10_N	2_2022-09-10_N	3_2022-09-10_N	1_2022-09-13_N	2_2022-09-13_N	3_2022-09-13_N	1_2022-09-15_N	2_2022-09-15_N
Sample Collection Date:	16-Sep-22	16-Sep-22	16-Sep-22	10-Sep-22	10-Sep-22	10-Sep-22	13-Sep-22	13-Sep-22	13-Sep-22	15-Sep-22	15-Sep-22
CC#:	CC231159	CC231160	CC231161	CC231162	CC231163	CC231164	CC231165	CC231166	CC231167	CC231168	CC231169
Order: Diptera	0	0	0	0	0	0	0	0	0	0	0
Family: Ceratopogonidae	120	20	20	20	0	0	180	40	40	80	100
Family: Chironomidae	260	360	940	2620	2080	1384	1440	1860	1420	180	100
Family: Empididae	0	20	0	40	180	83	0	0	40	0	20
Family: Limoniidae	0	0	0	0	0	0	0	0	0	0	0
Family: Muscidae	0	0	0	0	0	0	0	0	0	0	0
Family: Pelecorhynchidae	0	0	0	0	0	0	0	0	0	0	0
Family: Psychodidae	2060	1560	1260	120	460	83	7080	4760	7020	3620	4540
Family: Simuliidae	0	140	180	0	0	317	20	120	40	0	0
Family: Tipulidae	0	40	20	0	140	17	20	0	40	20	20
Order: Hemiptera	0	0	0	0	0	0	0	0	0	20	0
Subphylum: Chelicerata	0	0	0	0	0	0	0	0	0	0	0
Class: Arachnida	0	0	0	0	0	0	0	0	0	0	0
Order: Trombidiformes	0	0	0	20	20	0	20	0	20	0	0
Family: Aturidae	0	0	0	0	0	0	0	0	0	0	0
Family: Feltriidae	0	0	0	0	0	0	0	0	0	0	0
Family: Hydryphantidae	0	0	0	0	0	0	0	0	0	0	0
Family: Hygrobatidae	0	0	0	0	0	0	0	0	0	0	0
Family: Lebertiidae	60	20	0	260	180	67	180	0	100	80	0
Family: Pionidae	0	0	0	0	0	0	0	0	0	0	0
Family: Sperchontidae	20	20	0	0	0	17	0	40	40	0	20
Family: Torrenticolidae	0	0	0	20	20	0	0	0	0	0	0
Suborder: Prostigmata	0	0	0	0	0	0	0	0	0	0	0
Family: Stygothrombidiidae	0	0	0	0	0	0	0	0	0	0	0
Order: Sarcoptiformes	0	0	0	0	0	0	0	0	0	0	0
Order: Oribatida	0	0	0	0	0	0	0	0	0	0	0
Family: Hydrozetidae	0	0	0	0	0	0	0	0	0	0	0
Class: Malacostraca	0	0	0	0	0	0	0	0	0	0	0
Order: Amphipoda	0	0	0	0	0	0	0	0	0	0	0
Family: Gammaridae	0	0	0	0	0	0	0	0	0	0	0



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Site:	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Sample:	RG_FOUCL_BIC-1_2022-09-16_N	RG_FOUCL_BIC-2_2022-09-16_N	RG_FOUCL_BIC-3_2022-09-16_N	RG_FOUCL_BIC-1_2022-09-10_N	RG_FOUCL_BIC-2_2022-09-10_N	RG_FOUCL_BIC-3_2022-09-10_N	RG_FOUKI_BIC-1_2022-09-13_N	RG_FOUKI_BIC-2_2022-09-13_N	RG_FOUKI_BIC-3_2022-09-13_N	RG_FOUNGD_BIC-1_2022-09-15_N	RG_FOUNGD_BIC-2_2022-09-15_N
Sample Collection Date:	16-Sep-22	16-Sep-22	16-Sep-22	10-Sep-22	10-Sep-22	10-Sep-22	13-Sep-22	13-Sep-22	13-Sep-22	15-Sep-22	15-Sep-22
CC#:	CC231159	CC231160	CC231161	CC231162	CC231163	CC231164	CC231165	CC231166	CC231167	CC231168	CC231169
Phylum: Mollusca	0	0	0	0	0	0	0	0	0	0	0
Class: Bivalvia	0	0	0	0	0	0	0	0	0	0	0
Order: Veneroida	0	0	0	0	0	0	0	0	0	0	0
Family: Pisidiidae	0	0	0	0	80	0	0	0	0	0	0
Class: Gastropoda	0	0	0	0	0	0	0	0	0	0	0
Phylum: Annelida	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Clitellata	0	0	0	0	0	0	0	0	0	0	0
Class: Oligochaeta	0	0	0	0	0	0	0	0	0	0	0
Order: Lumbriculida	0	0	0	0	0	0	0	0	0	0	0
Family: Lumbriculidae	0	0	0	20	0	0	0	0	0	0	0
Order: Tubificida	0	0	0	0	0	0	0	0	0	0	0
Family: Enchytraeidae	0	0	0	0	20	83	0	0	0	40	0
Family: Naididae	0	20	0	0	160	33	1240	580	920	0	0
Phylum: Cnidaria	0	0	0	0	0	0	0	0	0	0	0
Class: Hydrozoa	0	0	0	0	0	0	0	0	0	0	0
Order: Anthoathecatae	0	0	0	0	0	0	0	0	0	0	0
Family: Hydridae	0	0	0	0	20	0	0	0	0	0	0
Totals:	20800	25100	21240	7480	10300	5455	14000	10600	15620	10320	20040

Taxa present but not included:

Phylum: Arthropoda	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Hexapoda	0	0	0	0	0	0	0	0	0	0	0
Class: Insecta	0	0	0	0	0	0	0	0	0	0	0
Order: Diptera	0	0	0	0	0	0	0	0	0	0	0
Family: Cecidomyiidae	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Crustacea	0	0	0	0	0	0	0	0	0	0	0
Class: Ostracoda	20	20	20	20	20	17	20	20	20	20	20
Class: Branchiopoda	0	0	0	0	0	0	0	0	0	0	0
Order: Cladocera	0	0	0	0	0	0	0	0	0	0	0
Family: Daphniidae	0	0	0	0	0	0	0	0	0	0	0



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	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Site:	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-	RG_FOUCL_BIC-
Sample:	1_2022-09-16_N	2_2022-09-16_N	3_2022-09-16_N	1_2022-09-10_N	2_2022-09-10_N	3_2022-09-10_N	1_2022-09-13_N	2_2022-09-13_N	3_2022-09-13_N	1_2022-09-15_N	2_2022-09-15_N
Sample Collection Date:	16-Sep-22	16-Sep-22	16-Sep-22	10-Sep-22	10-Sep-22	10-Sep-22	13-Sep-22	13-Sep-22	13-Sep-22	15-Sep-22	15-Sep-22
CC#:	CC231159	CC231160	CC231161	CC231162	CC231163	CC231164	CC231165	CC231166	CC231167	CC231168	CC231169
Class: Maxillipoda	0	0	0	0	0	0	0	0	0	0	0
Class: Copepoda	0	0	0	0	20	0	0	0	0	0	0
Phylum: Annelida	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Clitellata	0	0	0	0	0	0	0	0	0	0	0
Class: Oligochaeta	0	0	0	0	0	0	0	0	0	0	0
Order: Tubificida	0	0	0	0	0	0	0	0	0	0	0
Family: Lumbricidae	0	0	0	0	0	0	0	0	0	0	0
Phylum: Nemata	20	20	20	20	20	17	0	20	0	20	20
Phylum: Platyhelminthes	0	0	0	0	0	0	0	0	0	0	0
Class: Turbellaria	20	20	20	20	0	17	20	20	20	20	20
Totals:	60	60	60	60	60	51	40	60	40	60	60

ND designation of a taxa represents a non-



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 250-494-7553

	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Site:	RG_FOUNGD_BIC-	RG_FOUSH_BIC-	RG_FOUSH_BIC-	RG_FOUSH_BIC-	RG_FRSCH2_BIC-	RG_FRSCH2_BIC-	RG_FRSCH2_BIC-	RG_HENUP_BIC-	RG_HENUP_BIC-	RG_HENUP_BIC-
Sample:	3_2022-09-15_N	1_2022-09-12_N	2_2022-09-12_N	3_2022-09-12_N	1_2022-09-14_N	2_2022-09-14_N	3_2022-09-14_N	1_2022-09-12_N	2_2022-09-12_N	3_2022-09-12_N
Sample Collection Date:	15-Sep-22	12-Sep-22	12-Sep-22	12-Sep-22	14-Sep-22	14-Sep-22	14-Sep-22	12-Sep-22	12-Sep-22	12-Sep-22
CC#:	CC231170	CC231171	CC231172	CC231173	CC231174	CC231175	CC231176	CC231177	CC231178	CC231179
Phylum: Arthropoda	0	0	0	0	0	0	0	0	0	0
Order: Collembola	0	0	0	0	0	0	0	0	0	0
Subphylum: Hexapoda	0	0	0	0	0	0	0	0	0	0
Class: Insecta	0	0	0	0	0	0	0	0	0	0
Order: Ephemeroptera	0	0	0	0	0	0	0	0	0	0
Family: Ameletidae	20	0	0	20	0	20	0	40	50	180
Family: Baetidae	120	40	80	100	480	480	180	20	34	0
Family: Ephemerellidae	1740	380	640	120	360	560	600	260	468	480
Family: Heptageniidae	6980	2280	1780	2040	520	540	1380	2860	3000	4040
Order: Plecoptera	0	0	0	0	20	60	280	40	0	40
Family: Capniidae	0	0	0	0	100	200	100	40	0	0
Family: Chloroperlidae	300	20	60	40	40	40	60	140	134	100
Family: Leuctridae	0	0	0	0	0	0	0	40	83	0
Family: Nemouridae	340	200	140	60	460	1160	4440	540	333	240
Family: Peltoperlidae	0	0	0	0	0	0	0	0	0	0
Family: Perlidae	0	20	0	0	60	0	20	0	0	0
Family: Perlodidae	480	320	280	200	2300	3220	8340	340	116	160
Family: Pteronarcyidae	0	0	0	0	0	0	0	0	0	0
Family: Taeniopterygidae	400	60	120	100	200	740	260	120	283	180
Order: Trichoptera	0	0	0	0	0	0	20	0	33	20
Family: Apataniidae	0	0	0	0	40	60	20	0	0	0
Family: Brachycentridae	20	80	60	0	0	60	40	0	0	0
Family: Glossosomatidae	80	80	120	120	200	320	80	20	17	20
Family: Hydropsychidae	40	120	240	320	160	120	40	200	83	80
Family: Limnephilidae	0	0	0	0	20	20	20	0	0	20
Family: Rhyacophilidae	1040	540	540	520	420	440	380	200	101	20
Family: Thremmatidae	0	0	0	0	0	0	0	0	0	0
Order: Coleoptera	0	0	0	0	0	0	0	0	0	0
Family: Curculionidae	0	0	0	20	0	0	0	0	0	0
Family: Dytiscidae	0	0	0	0	0	0	0	0	0	0
Family: Elmidae	0	20	40	0	0	0	40	0	0	0
Family: Staphylinidae	0	0	0	0	0	0	0	0	0	0



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	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Site:	RG_FOUNGD_BIC-	RG_FOUSH_BIC-	RG_FOUSH_BIC-	RG_FOUSH_BIC-	RG_FRSCH2_BIC-	RG_FRSCH2_BIC-	RG_FRSCH2_BIC-	RG_HENUP_BIC-	RG_HENUP_BIC-	RG_HENUP_BIC-
Sample:	3_2022-09-15_N	1_2022-09-12_N	2_2022-09-12_N	3_2022-09-12_N	1_2022-09-14_N	2_2022-09-14_N	3_2022-09-14_N	1_2022-09-12_N	2_2022-09-12_N	3_2022-09-12_N
Sample Collection Date:	15-Sep-22	12-Sep-22	12-Sep-22	12-Sep-22	14-Sep-22	14-Sep-22	14-Sep-22	12-Sep-22	12-Sep-22	12-Sep-22
CC#:	CC231170	CC231171	CC231172	CC231173	CC231174	CC231175	CC231176	CC231177	CC231178	CC231179
Order: Diptera	0	0	0	0	0	0	0	0	0	0
Family: Ceratopogonidae	0	80	80	180	120	20	0	0	17	0
Family: Chironomidae	80	800	1120	1320	2060	2720	2120	1300	1067	1160
Family: Empididae	0	20	20	20	300	220	220	140	133	200
Family: Limoniidae	0	0	0	0	0	0	0	0	0	0
Family: Muscidae	0	0	0	0	0	0	0	0	0	0
Family: Pelecorhynchidae	0	0	0	0	20	0	0	0	0	0
Family: Psychodidae	1420	4300	3680	4220	300	280	520	20	33	0
Family: Simuliidae	60	20	0	0	0	60	260	0	17	0
Family: Tipulidae	20	0	60	0	20	20	60	0	0	0
Order: Hemiptera	0	0	0	0	0	0	0	0	0	0
Subphylum: Chelicerata	0	0	0	0	0	0	0	0	0	0
Class: Arachnida	0	0	0	0	0	0	0	0	0	0
Order: Trombidiformes	0	0	0	0	0	0	20	0	0	0
Family: Aturidae	0	0	0	0	0	0	0	0	0	0
Family: Feltriidae	0	0	0	0	0	0	0	0	0	0
Family: Hydryphantidae	0	0	0	0	0	0	0	0	0	0
Family: Hygrobatidae	20	0	0	0	0	0	0	0	0	0
Family: Lebertiidae	0	60	40	20	280	360	120	0	17	20
Family: Pionidae	0	0	0	0	0	0	0	0	0	0
Family: Sperchontidae	0	40	20	20	40	0	20	20	33	40
Family: Torrenticolidae	0	0	0	0	0	20	0	0	0	0
Suborder: Prostigmata	0	0	0	0	0	0	0	0	0	0
Family: Stygothrombidiidae	0	0	0	0	0	0	0	0	0	0
Order: Sarcoptiformes	0	0	0	0	0	0	0	0	0	0
Order: Oribatida	0	0	0	0	0	20	20	0	0	0
Family: Hydrozetidae	0	0	0	0	0	20	0	0	0	0
Class: Malacostraca	0	0	0	0	0	0	0	0	0	0
Order: Amphipoda	0	0	0	0	0	0	0	0	0	0
Family: Gammaridae	0	0	0	0	0	0	0	0	0	0



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	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Site:	RG_FOUNGD_BIC-	RG_FOUSH_BIC-	RG_FOUSH_BIC-	RG_FOUSH_BIC-	RG_FRSCH2_BIC-	RG_FRSCH2_BIC-	RG_FRSCH2_BIC-	RG_HENUP_BIC-	RG_HENUP_BIC-	RG_HENUP_BIC-
Sample:	3_2022-09-15_N	1_2022-09-12_N	2_2022-09-12_N	3_2022-09-12_N	1_2022-09-14_N	2_2022-09-14_N	3_2022-09-14_N	1_2022-09-12_N	2_2022-09-12_N	3_2022-09-12_N
Sample Collection Date:	15-Sep-22	12-Sep-22	12-Sep-22	12-Sep-22	14-Sep-22	14-Sep-22	14-Sep-22	12-Sep-22	12-Sep-22	12-Sep-22
CC#:	CC231170	CC231171	CC231172	CC231173	CC231174	CC231175	CC231176	CC231177	CC231178	CC231179
Phylum: Mollusca	0	0	0	0	0	0	0	0	0	0
Class: Bivalvia	0	0	0	0	0	0	0	0	0	0
Order: Veneroida	0	0	0	0	0	0	0	0	0	0
Family: Pisidiidae	0	0	0	0	0	0	0	0	0	0
Class: Gastropoda	0	0	0	0	0	0	0	0	0	0
Phylum: Annelida	0	0	0	0	0	0	0	0	0	0
Subphylum: Clitellata	0	0	0	0	0	0	0	0	0	0
Class: Oligochaeta	0	0	0	0	0	0	0	0	0	0
Order: Lumbriculida	0	0	0	0	0	0	0	0	0	0
Family: Lumbriculidae	0	0	0	0	0	0	0	0	0	0
Order: Tubificida	0	0	0	0	0	0	0	0	0	0
Family: Enchytraeidae	0	0	0	40	20	0	120	0	0	0
Family: Naididae	0	920	820	960	20	20	20	0	0	540
Phylum: Cnidaria	0	0	0	0	0	0	0	0	0	0
Class: Hydrozoa	0	0	0	0	0	0	0	0	0	0
Order: Anthoathecatae	0	0	0	0	0	0	0	0	0	0
Family: Hydridae	0	0	0	0	0	0	0	0	0	0
Totals:	13160	10400	9940	10440	8560	11800	19800	6340	6052	7020

Taxa present but not included:

Phylum: Arthropoda	0	0	0	0	0	0	0	0	0	0
Subphylum: Hexapoda	0	0	0	0	0	0	0	0	0	0
Class: Insecta	0	0	0	0	0	0	0	0	0	0
Order: Diptera	0	0	0	0	0	0	0	0	0	0
Family: Cecidomyiidae	0	0	0	0	0	0	0	0	0	0
Subphylum: Crustacea	0	0	0	0	0	0	0	0	0	0
Class: Ostracoda	20	20	20	20	0	20	0	0	0	20
Class: Branchiopoda	0	0	0	0	0	0	0	0	0	0
Order: Cladocera	0	0	0	0	0	0	0	0	0	20
Family: Daphniidae	0	0	0	0	20	0	0	0	0	0



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	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	
Site:	RG_FOUNGD_BIC-	RG_FOUSH_BIC-	RG_FOUSH_BIC-	RG_FOUSH_BIC-	RG_FRSCH2_BIC-	RG_FRSCH2_BIC-	RG_FRSCH2_BIC-	RG_HENUP_BIC-	RG_HENUP_BIC-	RG_HENUP_BIC-	RG_MP1_BIC-1_2022-
Sample:	3_2022-09-15_N	1_2022-09-12_N	2_2022-09-12_N	3_2022-09-12_N	1_2022-09-14_N	2_2022-09-14_N	3_2022-09-14_N	1_2022-09-12_N	2_2022-09-12_N	3_2022-09-12_N	09-12_N
Sample Collection Date:	15-Sep-22	12-Sep-22	12-Sep-22	12-Sep-22	14-Sep-22	14-Sep-22	14-Sep-22	12-Sep-22	12-Sep-22	12-Sep-22	12-Sep-22
CC#:	CC231170	CC231171	CC231172	CC231173	CC231174	CC231175	CC231176	CC231177	CC231178	CC231179	CC231180
Class: Maxillipoda	0	0	0	0	0	0	0	0	0	0	0
Class: Copepoda	0	0	0	0	0	0	0	0	0	0	0
Phylum: Annelida	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Clitellata	0	0	0	0	0	0	0	0	0	0	0
Class: Oligochaeta	0	0	0	0	0	0	0	0	0	0	0
Order: Tubificida	0	0	0	0	0	0	0	0	0	0	0
Family: Lumbricidae	0	0	0	0	0	0	0	0	0	0	0
Phylum: Nemata	20	20	20	0	20	20	20	20	0	0	0
Phylum: Platyhelminthes	0	0	0	0	0	0	0	0	0	0	0
Class: Turbellaria	20	20	20	20	20	20	20	0	17	20	20
Totals:	60	60	60	40	60	60	40	20	17	20	60

ND designation of a taxa represents a non-



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	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Site:	RG_MP1_BIC-2_2022-	RG_MP1_BIC-3_2022-	RG_SCOUTDS_BIC-	RG_SCOUTDS_BIC-	RG_SCOUTDS_BIC-	RG_FODPO_BIC-	RG_FODPO_BIC-	RG_FODPO_BIC-	RG_FODHE_BIC-	RG_FODHE_BIC-	RG_FODHE_BIC-
Sample:	09-12_N	09-12_N	1_2022-09-13_N	2_2022-09-14_N	3_2022-09-14_N	1_2022-09-18_N	2_2022-09-18_N	3_2022-09-18_N	1_2022-09-19_N	2_2022-09-19_N	3_2022-09-19_N
Sample Collection Date:	12-Sep-22	12-Sep-22	13-Sep-22	14-Sep-22	14-Sep-22	18-Sep-22	18-Sep-22	18-Sep-22	19-Sep-22	19-Sep-22	19-Sep-22
CC#:	CC231181	CC231182	CC231183	CC231184	CC231185	CC231186	CC231187	CC231188	CC231189	CC231190	CC231191
Phylum: Arthropoda	0	0	0	0	0	0	0	0	0	0	0
Order: Collembola	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Hexapoda	0	0	0	0	0	0	0	0	0	0	0
Class: Insecta	0	0	0	0	0	0	0	0	0	0	0
Order: Ephemeroptera	0	0	0	0	0	0	0	0	0	0	0
Family: Ameletidae	10	0	20	20	0	20	0	0	20	0	0
Family: Baetidae	45	100	20	60	0	720	500	360	200	120	160
Family: Ephemerellidae	315	760	920	800	900	60	100	80	3880	1680	1940
Family: Heptageniidae	920	3460	2380	3560	2440	660	720	20	4040	5220	4600
Order: Plecoptera	0	20	0	0	0	0	0	0	0	0	20
Family: Capniidae	0	0	20	20	0	280	180	60	20	0	0
Family: Chloroperlidae	30	80	40	80	20	80	120	80	0	40	80
Family: Leuctridae	5	0	0	0	0	0	0	0	0	0	20
Family: Nemouridae	30	80	240	540	340	900	1900	2900	500	500	300
Family: Peltoperlidae	0	0	0	0	0	0	0	0	0	0	0
Family: Perlidae	0	0	40	40	20	0	0	20	0	0	0
Family: Perlodidae	40	280	220	500	640	2080	3960	3620	600	360	160
Family: Pteronarcyidae	0	0	0	0	0	0	0	0	0	0	0
Family: Taeniopterygidae	25	80	40	240	160	680	560	200	380	120	300
Order: Trichoptera	15	20	20	0	0	0	60	40	0	40	0
Family: Apataniidae	5	20	20	0	20	0	0	20	0	0	0
Family: Brachycentridae	0	20	0	100	0	0	0	0	20	20	0
Family: Glossosomatidae	5	60	40	60	140	340	420	240	0	0	20
Family: Hydropsychidae	5	80	100	320	200	20	40	40	60	60	40
Family: Limnephilidae	0	0	0	0	0	80	20	20	0	0	0
Family: Rhyacophilidae	180	580	200	640	420	480	520	500	920	580	380
Family: Thremmatidae	0	0	0	0	0	0	0	0	0	0	0
Order: Coleoptera	0	0	0	0	0	0	0	0	0	0	0
Family: Curculionidae	0	0	0	0	0	0	0	0	0	0	0
Family: Dytiscidae	0	0	0	0	0	0	0	0	0	0	0
Family: Elmidae	15	60	60	40	60	160	400	420	0	0	0
Family: Staphylinidae	0	0	0	0	0	0	0	0	0	0	0



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	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Site:	RG_MP1_BIC-2_2022-	RG_MP1_BIC-3_2022-	RG_SCOUTDS_BIC-1_2022-09-13_N	RG_SCOUTDS_BIC-2_2022-09-14_N	RG_SCOUTDS_BIC-3_2022-09-14_N	RG_FODPO_BIC-1_2022-09-18_N	RG_FODPO_BIC-2_2022-09-18_N	RG_FODPO_BIC-3_2022-09-18_N	RG_FODHE_BIC-1_2022-09-19_N	RG_FODHE_BIC-2_2022-09-19_N	RG_FODHE_BIC-3_2022-09-19_N
Sample:	09-12_N	09-12_N	13-Sep-22	14-Sep-22	14-Sep-22	18-Sep-22	18-Sep-22	18-Sep-22	19-Sep-22	19-Sep-22	19-Sep-22
Sample Collection Date:	12-Sep-22	12-Sep-22	13-Sep-22	14-Sep-22	14-Sep-22	18-Sep-22	18-Sep-22	18-Sep-22	19-Sep-22	19-Sep-22	19-Sep-22
CC#:	CC231181	CC231182	CC231183	CC231184	CC231185	CC231186	CC231187	CC231188	CC231189	CC231190	CC231191
Order: Diptera	0	0	0	0	0	0	0	0	0	0	0
Family: Ceratopogonidae	15	40	0	160	20	80	0	40	80	20	0
Family: Chironomidae	70	80	240	1020	960	1040	1800	2640	780	240	100
Family: Empididae	5	0	20	20	100	40	100	60	0	0	40
Family: Limoniidae	0	0	0	0	0	0	0	0	0	0	0
Family: Muscidae	0	0	0	0	0	0	0	0	0	0	0
Family: Pelecorhynchidae	0	0	0	0	0	0	0	0	0	0	0
Family: Psychodidae	890	4680	5080	5120	6240	40	320	320	1820	1380	520
Family: Simuliidae	25	0	0	40	0	40	40	80	60	0	140
Family: Tipulidae	10	0	0	20	20	100	40	20	40	0	0
Order: Hemiptera	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Chelicerata	0	0	0	0	0	0	0	0	0	0	0
Class: Arachnida	0	0	0	0	0	0	0	0	0	0	0
Order: Trombidiformes	0	0	0	0	0	20	0	0	0	0	0
Family: Aturidae	0	0	0	0	0	0	0	0	20	0	0
Family: Feltriidae	0	0	0	0	0	0	0	0	0	0	0
Family: Hydryphantidae	0	0	0	0	0	0	0	0	0	0	0
Family: Hygrobatidae	0	0	0	0	0	0	0	0	0	20	0
Family: Lebertiidae	40	60	280	120	260	120	140	220	180	0	0
Family: Pionidae	0	0	0	20	0	0	0	0	0	0	0
Family: Sperchontidae	0	0	40	0	20	0	0	20	40	0	0
Family: Torrenticolidae	5	0	20	0	0	0	0	0	0	0	0
Suborder: Prostigmata	0	0	0	0	0	0	0	0	0	0	0
Family: Stygothrombidiidae	0	0	0	0	0	0	0	0	0	0	0
Order: Sarcoptiformes	0	0	0	0	0	0	0	0	0	0	0
Order: Oribatida	0	20	0	0	0	0	0	0	0	0	0
Family: Hydrozetidae	0	0	0	0	0	0	0	0	0	0	0
Class: Malacostraca	0	0	0	0	0	0	0	0	0	0	0
Order: Amphipoda	0	0	0	0	0	0	0	0	0	0	0
Family: Gammaridae	0	0	0	0	0	0	0	0	0	0	0



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Site:	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Sample:	RG_MP1_BIC-2_2022-09-12_N	RG_MP1_BIC-3_2022-09-12_N	RG_SCOUTDS_BIC-1_2022-09-13_N	RG_SCOUTDS_BIC-2_2022-09-14_N	RG_SCOUTDS_BIC-3_2022-09-14_N	RG_FODPO_BIC-1_2022-09-18_N	RG_FODPO_BIC-2_2022-09-18_N	RG_FODPO_BIC-3_2022-09-18_N	RG_FODHE_BIC-1_2022-09-19_N	RG_FODHE_BIC-2_2022-09-19_N	RG_FODHE_BIC-3_2022-09-19_N
Sample Collection Date:	12-Sep-22	12-Sep-22	13-Sep-22	14-Sep-22	14-Sep-22	18-Sep-22	18-Sep-22	18-Sep-22	19-Sep-22	19-Sep-22	19-Sep-22
CC#:	CC231181	CC231182	CC231183	CC231184	CC231185	CC231186	CC231187	CC231188	CC231189	CC231190	CC231191
Phylum: Mollusca	0	0	0	0	0	0	0	0	0	0	0
Class: Bivalvia	0	0	0	0	0	0	0	0	0	0	0
Order: Veneroida	0	0	0	0	0	0	0	0	0	0	0
Family: Pisidiidae	0	0	0	0	0	60	0	0	0	0	0
Class: Gastropoda	0	0	0	0	0	0	0	0	0	0	0
Phylum: Annelida	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Clitellata	0	0	0	0	0	0	0	0	0	0	0
Class: Oligochaeta	0	0	0	0	0	0	0	0	0	0	0
Order: Lumbriculida	0	0	0	0	0	0	0	0	0	0	0
Family: Lumbriculidae	0	0	0	0	0	0	0	0	0	0	0
Order: Tubificida	0	0	0	0	0	0	0	0	0	0	0
Family: Enchytraeidae	0	20	20	0	200	0	40	0	0	0	0
Family: Naididae	5	0	320	560	840	0	0	20	0	0	0
Phylum: Cnidaria	0	0	0	0	0	0	0	0	0	0	0
Class: Hydrozoa	0	0	0	0	0	0	0	0	0	0	0
Order: Anthoathecatae	0	0	0	0	0	0	0	0	0	0	0
Family: Hydridae	0	0	0	0	0	0	0	0	0	0	0
Totals:	2710	10600	10400	14100	14020	8100	11980	12040	13660	10400	8820

Taxa present but not included:

Phylum: Arthropoda	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Hexapoda	0	0	0	0	0	0	0	0	0	0	0
Class: Insecta	0	0	0	0	0	0	0	0	0	0	0
Order: Diptera	0	0	0	0	0	0	0	0	0	0	0
Family: Cecidomyiidae	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Crustacea	0	0	0	0	0	0	0	0	0	0	0
Class: Ostracoda	5	20	20	20	0	20	0	20	20	20	0
Class: Branchiopoda	0	0	0	0	0	0	0	0	0	0	0
Order: Cladocera	0	0	0	0	0	0	0	0	0	0	0
Family: Daphniidae	0	0	0	0	0	0	0	0	0	0	0



Project: 22-14 (FRO LAEMP)
 Minnow Environmental (BC)
 Taxonomist: Scott Finlayson
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 250-494-7553

	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022
Site:	RG_MP1_BIC-2_2022-	RG_MP1_BIC-3_2022-	RG_SCOUTDS_BIC-1_2022-09-13_N	RG_SCOUTDS_BIC-2_2022-09-14_N	RG_SCOUTDS_BIC-3_2022-09-14_N	RG_FODPO_BIC-1_2022-09-18_N	RG_FODPO_BIC-2_2022-09-18_N	RG_FODPO_BIC-3_2022-09-18_N	RG_FODHE_BIC-1_2022-09-19_N	RG_FODHE_BIC-2_2022-09-19_N	RG_FODHE_BIC-3_2022-09-19_N
Sample:	09-12_N	09-12_N	1_2022-09-13_N	2_2022-09-14_N	3_2022-09-14_N	1_2022-09-18_N	2_2022-09-18_N	3_2022-09-18_N	1_2022-09-19_N	2_2022-09-19_N	3_2022-09-19_N
Sample Collection Date:	12-Sep-22	12-Sep-22	13-Sep-22	14-Sep-22	14-Sep-22	18-Sep-22	18-Sep-22	18-Sep-22	19-Sep-22	19-Sep-22	19-Sep-22
CC#:	CC231181	CC231182	CC231183	CC231184	CC231185	CC231186	CC231187	CC231188	CC231189	CC231190	CC231191
Class: Maxillipoda	0	0	0	0	0	0	0	0	0	0	0
Class: Copepoda	0	0	0	0	0	0	0	0	0	0	0
Phylum: Annelida	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Clitellata	0	0	0	0	0	0	0	0	0	0	0
Class: Oligochaeta	0	0	0	0	0	0	0	0	0	0	0
Order: Tubificida	0	0	0	0	0	0	0	0	0	0	0
Family: Lumbricidae	0	0	0	0	0	0	20	0	0	0	0
Phylum: Nemata	5	20	0	20	0	0	20	20	0	0	0
Phylum: Platyhelminthes	0	0	0	0	0	0	0	0	0	0	0
Class: Turbellaria	5	20	20	20	20	20	20	0	20	20	20
Totals:	15	60	40	60	20	40	60	40	40	40	20

ND designation of a taxa represents a non-



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	2022	2022	2022	2022	2022	2022
Site:	RG_FRUPO_BIC-	RG_FRUPO_BIC-	RG_FRUPO_BIC-	RG_FRCP1SW_BIC-	RG_FRCP1SW_BIC-	RG_FRCP1SW_BIC-
Sample:	1_2022-09-18_N	2_2022-09-18_N	3_2022-09-18_N	1_2022-09-19_N	2_2022-09-19_N	3_2022-09-19_N
Sample Collection Date:	18-Sep-22	18-Sep-22	18-Sep-22	19-Sep-22	19-Sep-22	19-Sep-22
CC#:	CC231192	CC231193	CC231194	CC231195	CC231196	CC231197
Phylum: Arthropoda	0	0	0	0	0	0
Order: Collembola	0	0	0	0	0	0
Subphylum: Hexapoda	0	0	0	0	0	0
Class: Insecta	0	0	0	0	0	0
Order: Ephemeroptera	0	0	0	0	0	0
Family: Ameletidae	20	40	0	0	0	0
Family: Baetidae	140	40	80	740	340	300
Family: Ephemerellidae	220	220	1120	100	80	220
Family: Heptageniidae	500	400	1900	2200	1260	1180
Order: Plecoptera	0	0	0	80	560	0
Family: Capniidae	80	20	120	140	120	80
Family: Chloroperlidae	300	160	260	80	40	0
Family: Leuctridae	0	0	0	0	20	0
Family: Nemouridae	480	380	980	2560	2640	1780
Family: Peltoperlidae	0	0	0	0	0	0
Family: Perlidae	20	20	0	80	20	20
Family: Perlodidae	3460	4060	5900	1860	2100	1000
Family: Pteronarcyidae	0	0	0	0	0	0
Family: Taeniopterygidae	200	240	480	3600	1960	900
Order: Trichoptera	160	0	40	0	0	0
Family: Apataniidae	40	60	40	0	40	20
Family: Brachycentridae	0	0	0	80	60	20
Family: Glossosomatidae	300	240	280	100	0	20
Family: Hydropsychidae	60	140	20	400	220	220
Family: Limnephilidae	0	0	0	0	0	0
Family: Rhyacophilidae	460	400	900	460	380	360
Family: Thremmatidae	0	0	0	0	0	0
Order: Coleoptera	0	0	0	0	0	0
Family: Curculionidae	0	0	0	0	0	0
Family: Dytiscidae	0	0	0	0	0	0
Family: Elmidae	0	0	80	20	20	0
Family: Staphylinidae	0	0	0	0	0	0



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	2022	2022	2022	2022	2022	2022
Site:	RG_FRUPO_BIC-	RG_FRUPO_BIC-	RG_FRUPO_BIC-	RG_FRCP1SW_BIC-	RG_FRCP1SW_BIC-	RG_FRCP1SW_BIC-
Sample:	1_2022-09-18_N	2_2022-09-18_N	3_2022-09-18_N	1_2022-09-19_N	2_2022-09-19_N	3_2022-09-19_N
Sample Collection Date:	18-Sep-22	18-Sep-22	18-Sep-22	19-Sep-22	19-Sep-22	19-Sep-22
CC#:	CC231192	CC231193	CC231194	CC231195	CC231196	CC231197
Order: Diptera	0	0	0	0	0	0
Family: Ceratopogonidae	240	40	140	60	300	40
Family: Chironomidae	3540	3620	5040	1220	1200	780
Family: Empididae	120	100	180	20	20	80
Family: Limoniidae	0	0	0	0	0	0
Family: Muscidae	0	0	0	0	0	0
Family: Pelecorhynchidae	0	20	0	0	0	0
Family: Psychodidae	480	180	200	1760	3520	2440
Family: Simuliidae	100	80	20	540	100	20
Family: Tipulidae	120	100	180	120	80	20
Order: Hemiptera	0	0	0	0	0	0
Subphylum: Chelicerata	0	0	0	0	0	0
Class: Arachnida	0	0	0	0	0	0
Order: Trombidiformes	0	20	20	0	0	0
Family: Aturidae	0	0	0	0	0	0
Family: Feltriidae	0	0	0	0	0	20
Family: Hydryphantidae	0	0	0	0	0	0
Family: Hygrobatidae	0	0	0	0	0	0
Family: Lebertiidae	440	200	420	140	380	120
Family: Pionidae	0	0	0	0	0	0
Family: Sperchontidae	20	0	0	0	0	0
Family: Torrenticolidae	20	0	0	0	0	20
Suborder: Prostigmata	0	0	0	0	0	0
Family: Stygothrombidiidae	20	0	0	0	0	0
Order: Sarcoptiformes	0	0	0	0	0	0
Order: Oribatida	0	0	0	0	0	0
Family: Hydrozetidae	0	0	0	0	0	0
Class: Malacostraca	0	0	0	0	0	0
Order: Amphipoda	0	0	0	0	0	0
Family: Gammaridae	0	0	0	0	0	0



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	2022	2022	2022	2022	2022	2022
Site:	RG_FRUPO_BIC-	RG_FRUPO_BIC-	RG_FRUPO_BIC-	RG_FRCP1SW_BIC-	RG_FRCP1SW_BIC-	RG_FRCP1SW_BIC-
Sample:	1_2022-09-18_N	2_2022-09-18_N	3_2022-09-18_N	1_2022-09-19_N	2_2022-09-19_N	3_2022-09-19_N
Sample Collection Date:	18-Sep-22	18-Sep-22	18-Sep-22	19-Sep-22	19-Sep-22	19-Sep-22
CC#:	CC231192	CC231193	CC231194	CC231195	CC231196	CC231197
Phylum: Mollusca	0	0	0	0	0	0
Class: Bivalvia	0	0	0	0	0	0
Order: Veneroida	0	0	0	0	0	0
Family: Pisidiidae	0	0	0	0	0	0
Class: Gastropoda	0	0	0	0	0	0
Phylum: Annelida	0	0	0	0	0	0
Subphylum: Clitellata	0	0	0	0	0	0
Class: Oligochaeta	0	0	0	0	0	0
Order: Lumbriculida	0	0	0	0	0	0
Family: Lumbriculidae	0	0	0	0	0	0
Order: Tubificida	0	0	0	0	0	0
Family: Enchytraeidae	80	20	80	20	60	80
Family: Naididae	0	20	20	0	0	0
Phylum: Cnidaria	0	0	0	0	0	0
Class: Hydrozoa	0	0	0	0	0	0
Order: Anthoathecatae	0	0	0	0	0	0
Family: Hydridae	0	0	0	0	0	0
Totals:	11620	10820	18500	16380	15520	9740

Taxa present but not included:

Phylum: Arthropoda	0	0	0	0	0	0
Subphylum: Hexapoda	0	0	0	0	0	0
Class: Insecta	0	0	0	0	0	0
Order: Diptera	0	0	0	0	0	0
Family: Cecidomyiidae	0	0	0	0	20	0
Subphylum: Crustacea	0	0	0	0	0	0
Class: Ostracoda	0	20	20	20	0	0
Class: Branchiopoda	0	0	0	0	0	0
Order: Cladocera	0	0	0	0	0	0
Family: Daphniidae	0	0	0	0	0	0



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	2022	2022	2022	2022	2022	2022
Site:	RG_FRUPO_BIC-	RG_FRUPO_BIC-	RG_FRUPO_BIC-	RG_FRCP1SW_BIC-	RG_FRCP1SW_BIC-	RG_FRCP1SW_BIC-
Sample:	1_2022-09-18_N	2_2022-09-18_N	3_2022-09-18_N	1_2022-09-19_N	2_2022-09-19_N	3_2022-09-19_N
Sample Collection Date:	18-Sep-22	18-Sep-22	18-Sep-22	19-Sep-22	19-Sep-22	19-Sep-22
CC#:	CC231192	CC231193	CC231194	CC231195	CC231196	CC231197
Class: Maxillipoda	0	0	0	0	0	0
Class: Copepoda	0	0	0	0	0	0
Phylum: Annelida	0	0	0	0	0	0
Subphylum: Clitellata	0	0	0	0	0	0
Class: Oligochaeta	0	0	0	0	0	0
Order: Tubificida	0	0	0	0	0	0
Family: Lumbricidae	0	0	0	0	0	0
Phylum: Nemata	20	20	20	20	0	20
Phylum: Platyhelminthes	0	0	0	0	0	0
Class: Turbellaria	20	20	20	20	0	20
Totals:	40	60	60	60	20	40

ND designation of a taxa represents a non-

Sys_Sample_Code	Sample_Date	Sample_Time	Chemical_Name	Result_Value	Result_Unit
RG_FOBKS_WS_LAEMP_FRO_2022-06_NP	06/13/22	13:00	Dimethylselenoxide	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-06_NP	06/13/22	13:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.005	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-06_NP	06/13/22	13:00	Methaneselenonic Acid	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-06_NP	06/13/22	13:00	Se(IV) - selenite SeO3(-2)	0.080	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-06_NP	06/13/22	13:00	Se(VI) - selenate SeO4(-2)	12.7	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-06_NP	06/13/22	13:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-06_NP	06/13/22	13:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-06_NP	06/13/22	13:00	Selenosulfate	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-06_NP	06/13/22	13:00	Unknown Selenium Species	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-06_NP-NAL	06/13/22	13:00	Selenium	12.8	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-06_NP-NAL	06/13/22	13:00	Selenium	13.2	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-06_NP	06/13/22	11:30	Dimethylselenoxide	0.00	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-06_NP	06/13/22	11:30	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-06_NP	06/13/22	11:30	Methaneselenonic Acid	0.00	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-06_NP	06/13/22	11:30	Se(IV) - selenite SeO3(-2)	0.029	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-06_NP	06/13/22	11:30	Se(VI) - selenate SeO4(-2)	3.73	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-06_NP	06/13/22	11:30	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-06_NP	06/13/22	11:30	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-06_NP	06/13/22	11:30	Selenosulfate	0.00	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-06_NP	06/13/22	11:30	Unknown Selenium Species	0.00	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-06_NP-NAL	06/13/22	11:30	Selenium	3.95	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-06_NP-NAL	06/13/22	11:30	Selenium	4.03	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:35	Dimethylselenoxide	0.00	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:35	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:35	Methaneselenonic Acid	0.00	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:35	Se(IV) - selenite SeO3(-2)	0.052	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:35	Se(VI) - selenate SeO4(-2)	9.32	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:35	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:35	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:35	Selenosulfate	0.00	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:35	Unknown Selenium Species	0.00	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-06_NP-NAL	06/13/22	09:35	Selenium	10.0	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-06_NP-NAL	06/13/22	09:35	Selenium	9.49	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:30	Dimethylselenoxide	0.00	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:30	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:30	Methaneselenonic Acid	0.00	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:30	Se(IV) - selenite SeO3(-2)	0.039	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:30	Se(VI) - selenate SeO4(-2)	5.94	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:30	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:30	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:30	Selenosulfate	0.00	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:30	Unknown Selenium Species	0.00	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-06_NP-NAL	06/13/22	10:30	Selenium	5.91	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-06_NP-NAL	06/13/22	10:30	Selenium	5.83	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:45	Dimethylselenoxide	0.00	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:45	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:45	Methaneselenonic Acid	0.00	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:45	Se(IV) - selenite SeO3(-2)	0.053	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:45	Se(VI) - selenate SeO4(-2)	9.68	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:45	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:45	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:45	Selenosulfate	0.00	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-06_NP	06/13/22	10:45	Unknown Selenium Species	0.00	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-06_NP-NAL	06/13/22	10:45	Selenium	10.2	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-06_NP-NAL	06/13/22	10:45	Selenium	9.56	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-06_NP	06/13/22	08:55	Dimethylselenoxide	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-06_NP	06/13/22	08:55	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-06_NP	06/13/22	08:55	Methaneselenonic Acid	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-06_NP	06/13/22	08:55	Se(IV) - selenite SeO3(-2)	0.073	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-06_NP	06/13/22	08:55	Se(VI) - selenate SeO4(-2)	11.7	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-06_NP	06/13/22	08:55	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-06_NP	06/13/22	08:55	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-06_NP	06/13/22	08:55	Selenosulfate	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-06_NP	06/13/22	08:55	Unknown Selenium Species	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-06_NP-NAL	06/13/22	08:55	Selenium	11.7	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-06_NP-NAL	06/13/22	08:55	Selenium	11.8	ug/L
RG_MP1_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:40	Dimethylselenoxide	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:40	MeSe(IV) - methylseleninic acid CH3SeO2H	0.003	ug/L
RG_MP1_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:40	Methaneselenonic Acid	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:40	Se(IV) - selenite SeO3(-2)	0.065	ug/L
RG_MP1_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:40	Se(VI) - selenate SeO4(-2)	11.6	ug/L
RG_MP1_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:40	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:40	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:40	Selenosulfate	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-06_NP	06/13/22	09:40	Unknown Selenium Species	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-06_NP-NAL	06/13/22	09:40	Selenium	12.4	ug/L
RG_MP1_WS_LAEMP_FRO_2022-06_NP-NAL	06/13/22	09:40	Selenium	12.2	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-06_NP	06/13/22	14:00	Dimethylselenoxide	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-06_NP	06/13/22	14:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.005	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-06_NP	06/13/22	14:00	Methaneselenonic Acid	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-06_NP	06/13/22	14:00	Se(IV) - selenite SeO3(-2)	0.083	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-06_NP	06/13/22	14:00	Se(VI) - selenate SeO4(-2)	14.1	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-06_NP	06/13/22	14:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-06_NP	06/13/22	14:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-06_NP	06/13/22	14:00	Selenosulfate	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-06_NP	06/13/22	14:00	Unknown Selenium Species	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-06_NP-NAL	06/13/22	14:00	Selenium	14.4	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-06_NP-NAL	06/13/22	14:00	Selenium	14.6	ug/L
B221381-BLK1			Dimethylselenoxide	0.00	ug/L
B221381-BLK1			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B221381-BLK1			Methaneselenonic Acid	0.00	ug/L
B221381-BLK1			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B221381-BLK1			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B221381-BLK1			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B221381-BLK1			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B221381-BLK1			Selenosulfate	0.00	ug/L
B221381-BLK1			Unknown Selenium Species	0.00	ug/L
B221381-BLK2			Dimethylselenoxide	0.00	ug/L
B221381-BLK2			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B221381-BLK2			Methaneselenonic Acid	0.00	ug/L
B221381-BLK2			Se(IV) - selenite SeO3(-2)	0.00	ug/L

Sys_Sample_Code	Sample_Date	Sample_Time	Chemical_Name	Result_Value	Result_Unit
B221381-BLK2			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B221381-BLK2			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B221381-BLK2			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B221381-BLK2			Selenosulfate	0.00	ug/L
B221381-BLK2			Unknown Selenium Species	0.00	ug/L
B221381-BLK3			Dimethylselenoxide	0.00	ug/L
B221381-BLK3			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B221381-BLK3			Methaneselenonic Acid	0.00	ug/L
B221381-BLK3			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B221381-BLK3			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B221381-BLK3			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B221381-BLK3			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B221381-BLK3			Selenosulfate	0.00	ug/L
B221381-BLK3			Unknown Selenium Species	0.00	ug/L
B221381-BLK4			Dimethylselenoxide	0.00	ug/L
B221381-BLK4			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B221381-BLK4			Methaneselenonic Acid	0.00	ug/L
B221381-BLK4			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B221381-BLK4			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B221381-BLK4			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B221381-BLK4			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B221381-BLK4			Selenosulfate	0.00	ug/L
B221381-BLK4			Unknown Selenium Species	0.00	ug/L
B221421-BLK1			Selenium	0.113	ug/L
B221421-BLK2			Selenium	0.101	ug/L
B221421-BLK3			Selenium	0.096	ug/L
B221421-BLK4			Selenium	0.080	ug/L
B221381-DUP4			Dimethylselenoxide	0.000	ug/L
B221381-DUP4			MeSe(IV) - methylseleninic acid CH3SeO2H	0.005	ug/L
B221381-DUP4			Methaneselenonic Acid	0.000	ug/L
B221381-DUP4			Se(IV) - selenite SeO3(-2)	0.080	ug/L
B221381-DUP4			Se(VI) - selenate SeO4(-2)	12.65	ug/L
B221381-DUP4			SeCN - selenocyanate SeCN(-1)	0.000	ug/L
B221381-DUP4			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.000	ug/L
B221381-DUP4			Selenosulfate	0.000	ug/L
B221381-DUP4			Unknown Selenium Species	0.000	ug/L
B221381-DUP5			Dimethylselenoxide	0.000	ug/L
B221381-DUP5			MeSe(IV) - methylseleninic acid CH3SeO2H	0.000	ug/L
B221381-DUP5			Methaneselenonic Acid	0.000	ug/L
B221381-DUP5			Se(IV) - selenite SeO3(-2)	0.048	ug/L
B221381-DUP5			Se(VI) - selenate SeO4(-2)	9.305	ug/L
B221381-DUP5			SeCN - selenocyanate SeCN(-1)	0.000	ug/L
B221381-DUP5			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.000	ug/L
B221381-DUP5			Selenosulfate	0.000	ug/L
B221381-DUP5			Unknown Selenium Species	0.000	ug/L
B221421-DUP3			Selenium	9.473	ug/L
B221421-DUP4			Selenium	11.93	ug/L
B221381-BS1			MeSe(IV) - methylseleninic acid CH3SeO2H	5.780	ug/L
B221381-BS1			Se(IV) - selenite SeO3(-2)	5.088	ug/L
B221381-BS1			Se(VI) - selenate SeO4(-2)	4.965	ug/L
B221381-BS1			SeCN - selenocyanate SeCN(-1)	4.936	ug/L
B221381-BS1			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	4.946	ug/L
B221421-BS1			Selenium	221.1	ug/L
B221421-BS2			Selenium	221.1	ug/L
B221421-BS3			Selenium	213.7	ug/L
B221381-MS4			Se(IV) - selenite SeO3(-2)	4.998	ug/L
B221381-MS4			Se(VI) - selenate SeO4(-2)	17.50	ug/L
B221381-MS4			SeCN - selenocyanate SeCN(-1)	1.746	ug/L
B221381-MS4			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	1.933	ug/L
B221381-MS5			Se(IV) - selenite SeO3(-2)	4.819	ug/L
B221381-MS5			Se(VI) - selenate SeO4(-2)	14.02	ug/L
B221381-MS5			SeCN - selenocyanate SeCN(-1)	1.774	ug/L
B221381-MS5			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	1.926	ug/L
B221421-MS3			Selenium	216.1	ug/L
B221421-MS4			Selenium	218.3	ug/L
B221381-MSD4			Se(IV) - selenite SeO3(-2)	4.980	ug/L
B221381-MSD4			Se(VI) - selenate SeO4(-2)	17.60	ug/L
B221381-MSD4			SeCN - selenocyanate SeCN(-1)	1.776	ug/L
B221381-MSD4			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	1.922	ug/L
B221381-MSD5			Se(IV) - selenite SeO3(-2)	4.816	ug/L
B221381-MSD5			Se(VI) - selenate SeO4(-2)	13.94	ug/L
B221381-MSD5			SeCN - selenocyanate SeCN(-1)	1.722	ug/L
B221381-MSD5			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	1.883	ug/L
B221421-MSD3			Selenium	222.3	ug/L
B221421-MSD4			Selenium	225.0	ug/L
B221421-SRM1			Selenium	13.58	ug/L
B221421-SRM2			Selenium	13.89	ug/L
B221421-SRM3			Selenium	13.87	ug/L

Sys_Sample_Code	Sample_D	Sample_Time	Chemical_Name	Result_Value	Result_Uni
RG_UFR1_WS_LAEMP_FRO_2022-06_NP	06/27/22	12:15	Unknown Selenium Species	0.00	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-06_NP-NAL	06/27/22	12:15	Selenium	0.375	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-06_NP-NAL	06/27/22	12:15	Selenium	0.471	ug/L
B221516-BLK1			Dimethylselenoxide	0.00	ug/L
B221516-BLK1			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B221516-BLK1			Methaneselenonic Acid	0.00	ug/L
B221516-BLK1			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B221516-BLK1			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B221516-BLK1			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B221516-BLK1			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B221516-BLK1			Selenosulfate	0.00	ug/L
B221516-BLK1			Unknown Selenium Species	0.00	ug/L
B221516-BLK2			Dimethylselenoxide	0.00	ug/L
B221516-BLK2			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B221516-BLK2			Methaneselenonic Acid	0.00	ug/L
B221516-BLK2			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B221516-BLK2			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B221516-BLK2			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B221516-BLK2			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B221516-BLK2			Selenosulfate	0.00	ug/L
B221516-BLK2			Unknown Selenium Species	0.00	ug/L
B221516-BLK3			Dimethylselenoxide	0.00	ug/L
B221516-BLK3			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B221516-BLK3			Methaneselenonic Acid	0.00	ug/L
B221516-BLK3			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B221516-BLK3			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B221516-BLK3			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B221516-BLK3			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B221516-BLK3			Selenosulfate	0.00	ug/L
B221516-BLK3			Unknown Selenium Species	0.00	ug/L
B221516-BLK4			Dimethylselenoxide	0.00	ug/L
B221516-BLK4			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B221516-BLK4			Methaneselenonic Acid	0.00	ug/L
B221516-BLK4			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B221516-BLK4			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B221516-BLK4			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B221516-BLK4			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B221516-BLK4			Selenosulfate	0.00	ug/L
B221516-BLK4			Unknown Selenium Species	0.00	ug/L
B221556-BLK1			Selenium	0.304	ug/L
B221556-BLK2			Selenium	0.137	ug/L
B221556-BLK3			Selenium	0.159	ug/L
B221556-BLK4			Selenium	0.081	ug/L
B221516-DUP3			Dimethylselenoxide	0.000	ug/L
B221516-DUP3			MeSe(IV) - methylseleninic acid CH3SeO2H	0.000	ug/L
B221516-DUP3			Methaneselenonic Acid	0.000	ug/L
B221516-DUP3			Se(IV) - selenite SeO3(-2)	0.013	ug/L
B221516-DUP3			Se(VI) - selenate SeO4(-2)	0.348	ug/L
B221516-DUP3			SeCN - selenocyanate SeCN(-1)	0.000	ug/L
B221516-DUP3			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.000	ug/L
B221516-DUP3			Selenosulfate	0.000	ug/L
B221516-DUP3			Unknown Selenium Species	0.000	ug/L
B221556-DUP5			Selenium	35.78	ug/L
B221556-DUP6			Selenium	17.70	ug/L
B221516-BS1			MeSe(IV) - methylseleninic acid CH3SeO2H	5.462	ug/L
B221516-BS1			Se(IV) - selenite SeO3(-2)	4.985	ug/L
B221516-BS1			Se(VI) - selenate SeO4(-2)	5.057	ug/L
B221516-BS1			SeCN - selenocyanate SeCN(-1)	4.932	ug/L
B221516-BS1			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	5.211	ug/L
B221556-BS1			Selenium	175.3	ug/L
B221556-BS2			Selenium	174.7	ug/L
B221556-BS3			Selenium	176.9	ug/L
B221556-BS4			Selenium	183.3	ug/L
B221516-MS3			Se(IV) - selenite SeO3(-2)	4.606	ug/L
B221516-MS3			Se(VI) - selenate SeO4(-2)	4.974	ug/L
B221516-MS3			SeCN - selenocyanate SeCN(-1)	1.745	ug/L
B221516-MS3			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	1.829	ug/L
B221556-MS5			Selenium	233.2	ug/L
B221556-MS6			Selenium	220.4	ug/L
B221516-MSD3			Se(IV) - selenite SeO3(-2)	4.583	ug/L
B221516-MSD3			Se(VI) - selenate SeO4(-2)	4.998	ug/L
B221516-MSD3			SeCN - selenocyanate SeCN(-1)	1.744	ug/L
B221516-MSD3			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	1.829	ug/L
B221556-MSD5			Selenium	225.2	ug/L
B221556-MSD6			Selenium	210.2	ug/L
B221556-SRM1			Selenium	12.18	ug/L
B221556-SRM2			Selenium	12.12	ug/L
B221556-SRM3			Selenium	12.05	ug/L
B221556-SRM4			Selenium	12.34	ug/L

Sys_Sample_Code	Sample_D	Sample_Ti	Chemical_Name	Result_Value	Result_Un
RG_FO22_WS_LAEMP_FRO_2022-09_N	09/09/22	16:00	Dimethylselenoxide	0.00	ug/L
RG_FO22_WS_LAEMP_FRO_2022-09_N	09/09/22	16:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.014	ug/L
RG_FO22_WS_LAEMP_FRO_2022-09_N	09/09/22	16:00	Methaneselenonic Acid	0.00	ug/L
RG_FO22_WS_LAEMP_FRO_2022-09_N	09/09/22	16:00	Se(IV) - selenite SeO3(-2)	0.175	ug/L
RG_FO22_WS_LAEMP_FRO_2022-09_N	09/09/22	16:00	Se(VI) - selenate SeO4(-2)	75.0	ug/L
RG_FO22_WS_LAEMP_FRO_2022-09_N	09/09/22	16:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FO22_WS_LAEMP_FRO_2022-09_N	09/09/22	16:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FO22_WS_LAEMP_FRO_2022-09_N	09/09/22	16:00	Selenosulfate	0.00	ug/L
RG_FO22_WS_LAEMP_FRO_2022-09_N	09/09/22	16:00	Unknown Selenium Species	0.00	ug/L
RG_FO22_WS_LAEMP_FRO_2022-09_NP-NAL	09/09/22	16:00	Selenium	72.3	ug/L
RG_FO22_WS_LAEMP_FRO_2022-09_NP-NAL	09/09/22	16:00	Selenium	72.0	ug/L
RG_FO26_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	Dimethylselenoxide	0.00	ug/L
RG_FO26_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_FO26_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	Methaneselenonic Acid	0.00	ug/L
RG_FO26_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	Se(IV) - selenite SeO3(-2)	0.010	ug/L
RG_FO26_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	Se(VI) - selenate SeO4(-2)	0.653	ug/L
RG_FO26_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FO26_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FO26_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	Selenosulfate	0.00	ug/L
RG_FO26_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	Unknown Selenium Species	0.00	ug/L
RG_FO26_WS_LAEMP_FRO_2022-09_NP-NAL	09/16/22	11:30	Selenium	0.723	ug/L
RG_FO26_WS_LAEMP_FRO_2022-09_NP-NAL	09/16/22	11:30	Selenium	0.724	ug/L
RG_FOBCP_WS_LAEMP_FRO_2022-09_N	09/15/22	11:20	Dimethylselenoxide	0.005	ug/L
RG_FOBCP_WS_LAEMP_FRO_2022-09_N	09/15/22	11:20	MeSe(IV) - methylseleninic acid CH3SeO2H	0.026	ug/L
RG_FOBCP_WS_LAEMP_FRO_2022-09_N	09/15/22	11:20	Methaneselenonic Acid	0.00	ug/L
RG_FOBCP_WS_LAEMP_FRO_2022-09_N	09/15/22	11:20	Se(IV) - selenite SeO3(-2)	0.267	ug/L
RG_FOBCP_WS_LAEMP_FRO_2022-09_N	09/15/22	11:20	Se(VI) - selenate SeO4(-2)	64.8	ug/L
RG_FOBCP_WS_LAEMP_FRO_2022-09_N	09/15/22	11:20	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FOBCP_WS_LAEMP_FRO_2022-09_N	09/15/22	11:20	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FOBCP_WS_LAEMP_FRO_2022-09_N	09/15/22	11:20	Selenosulfate	0.00	ug/L
RG_FOBCP_WS_LAEMP_FRO_2022-09_N	09/15/22	11:20	Unknown Selenium Species	0.00	ug/L
RG_FOBCP_WS_LAEMP_FRO_2022-09_NP-NAL	09/15/22	11:20	Selenium	62.6	ug/L
RG_FOBCP_WS_LAEMP_FRO_2022-09_NP-NAL	09/15/22	11:20	Selenium	62.7	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-09_N	09/13/22	11:30	Dimethylselenoxide	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-09_N	09/13/22	11:30	MeSe(IV) - methylseleninic acid CH3SeO2H	0.011	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-09_N	09/13/22	11:30	Methaneselenonic Acid	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-09_N	09/13/22	11:30	Se(IV) - selenite SeO3(-2)	0.253	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-09_N	09/13/22	11:30	Se(VI) - selenate SeO4(-2)	62.2	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-09_N	09/13/22	11:30	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-09_N	09/13/22	11:30	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-09_N	09/13/22	11:30	Selenosulfate	0.013	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-09_N	09/13/22	11:30	Unknown Selenium Species	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-09_NP-NAL	09/13/22	11:30	Selenium	56.6	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-09_NP-NAL	09/13/22	11:30	Selenium	59.9	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-09_N	09/14/22	10:00	Dimethylselenoxide	0.010	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-09_N	09/14/22	10:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.018	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-09_N	09/14/22	10:00	Methaneselenonic Acid	0.00	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-09_N	09/14/22	10:00	Se(IV) - selenite SeO3(-2)	0.362	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-09_N	09/14/22	10:00	Se(VI) - selenate SeO4(-2)	114	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-09_N	09/14/22	10:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-09_N	09/14/22	10:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-09_N	09/14/22	10:00	Selenosulfate	0.00	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-09_N	09/14/22	10:00	Unknown Selenium Species	0.00	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-09_NP-NAL	09/14/22	10:00	Selenium	101	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-09_NP-NAL	09/14/22	10:00	Selenium	104	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	13:45	Dimethylselenoxide	0.00	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	13:45	MeSe(IV) - methylseleninic acid CH3SeO2H	0.018	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	13:45	Methaneselenonic Acid	0.00	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	13:45	Se(IV) - selenite SeO3(-2)	0.332	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	13:45	Se(VI) - selenate SeO4(-2)	75.5	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	13:45	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	13:45	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	13:45	Selenosulfate	0.00	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	13:45	Unknown Selenium Species	0.00	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-09_NP-NAL	09/15/22	13:45	Selenium	72.5	ug/L
RG_FODNGD_WS_LAEMP_FRO_2022-09_NP-NAL	09/15/22	13:45	Selenium	69.9	ug/L
RG_FODPO_WS_LAEMP_FRO_2022-09_N	09/18/22	10:15	Dimethylselenoxide	0.00	ug/L
RG_FODPO_WS_LAEMP_FRO_2022-09_N	09/18/22	10:15	MeSe(IV) - methylseleninic acid CH3SeO2H	0.008	ug/L
RG_FODPO_WS_LAEMP_FRO_2022-09_N	09/18/22	10:15	Methaneselenonic Acid	0.00	ug/L
RG_FODPO_WS_LAEMP_FRO_2022-09_N	09/18/22	10:15	Se(IV) - selenite SeO3(-2)	0.127	ug/L
RG_FODPO_WS_LAEMP_FRO_2022-09_N	09/18/22	10:15	Se(VI) - selenate SeO4(-2)	75.5	ug/L
RG_FODPO_WS_LAEMP_FRO_2022-09_N	09/18/22	10:15	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FODPO_WS_LAEMP_FRO_2022-09_N	09/18/22	10:15	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FODPO_WS_LAEMP_FRO_2022-09_N	09/18/22	10:15	Selenosulfate	0.00	ug/L
RG_FODPO_WS_LAEMP_FRO_2022-09_N	09/18/22	10:15	Unknown Selenium Species	0.00	ug/L
RG_FODPO_WS_LAEMP_FRO_2022-09_NP-NAL	09/18/22	10:15	Selenium	68.8	ug/L
RG_FODPO_WS_LAEMP_FRO_2022-09_NP-NAL	09/18/22	10:15	Selenium	73.8	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	Dimethylselenoxide	0.00	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	MeSe(IV) - methylseleninic acid CH3SeO2H	0.007	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	Methaneselenonic Acid	0.00	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	Se(IV) - selenite SeO3(-2)	0.124	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	Se(VI) - selenate SeO4(-2)	30.7	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	Selenosulfate	0.00	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-09_N	09/16/22	11:30	Unknown Selenium Species	0.00	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-09_NP-NAL	09/16/22	11:30	Selenium	28.5	ug/L
RG_FOUCL_WS_LAEMP_FRO_2022-09_NP-NAL	09/16/22	11:30	Selenium	27.9	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/18/22	14:45	Dimethylselenoxide	0.00	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/18/22	14:45	MeSe(IV) - methylseleninic acid CH3SeO2H	0.008	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/18/22	14:45	Methaneselenonic Acid	0.00	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/18/22	14:45	Se(IV) - selenite SeO3(-2)	0.179	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/18/22	14:45	Se(VI) - selenate SeO4(-2)	64.2	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/18/22	14:45	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/18/22	14:45	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/18/22	14:45	Selenosulfate	0.00	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/18/22	14:45	Unknown Selenium Species	0.00	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_NP-NAL	09/18/22	14:45	Selenium	65.7	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_NP-NAL	09/18/22	14:45	Selenium	62.9	ug/L
RG_FOUKI_WS_LAEMP_FRO_2022-09_N	09/13/22	08:15	Dimethylselenoxide	0.00	ug/L
RG_FOUKI_WS_LAEMP_FRO_2022-09_N	09/13/22	08:15	MeSe(IV) - methylseleninic acid CH3SeO2H	0.014	ug/L
RG_FOUKI_WS_LAEMP_FRO_2022-09_N	09/13/22	08:15	Methaneselenonic Acid	0.00	ug/L
RG_FOUKI_WS_LAEMP_FRO_2022-09_N	09/13/22	08:15	Se(IV) - selenite SeO3(-2)	0.227	ug/L
RG_FOUKI_WS_LAEMP_FRO_2022-09_N	09/13/22	08:15	Se(VI) - selenate SeO4(-2)	62.4	ug/L

Sys_Sample_Code	Sample_D	Sample_Ti	Chemical_Name	Result_Value	Result_Un
RG_FOUKI_WS_LAEMP_FRO_2022-09_N	09/13/22	08:15	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FOUKI_WS_LAEMP_FRO_2022-09_N	09/13/22	08:15	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FOUKI_WS_LAEMP_FRO_2022-09_N	09/13/22	08:15	Selenosulfate	0.00	ug/L
RG_FOUKI_WS_LAEMP_FRO_2022-09_N	09/13/22	08:15	Unknown Selenium Species	0.00	ug/L
RG_FOUKI_WS_LAEMP_FRO_2022-09_NP-NAL	09/13/22	08:15	Selenium	57.0	ug/L
RG_FOUKI_WS_LAEMP_FRO_2022-09_NP-NAL	09/13/22	08:15	Selenium	57.8	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	08:30	Dimethylselenoxide	0.00	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	08:30	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	08:30	Methaneselenonic Acid	0.00	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	08:30	Se(IV) - selenite SeO3(-2)	0.158	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	08:30	Se(VI) - selenate SeO4(-2)	49.4	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	08:30	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	08:30	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	08:30	Selenosulfate	0.00	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-09_N	09/15/22	08:30	Unknown Selenium Species	0.00	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-09_NP-NAL	09/15/22	08:30	Selenium	48.2	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-09_NP-NAL	09/15/22	08:30	Selenium	48.5	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-09_N	09/12/22	09:00	Dimethylselenoxide	0.005	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-09_N	09/12/22	09:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.009	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-09_N	09/12/22	09:00	Methaneselenonic Acid	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-09_N	09/12/22	09:00	Se(IV) - selenite SeO3(-2)	0.230	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-09_N	09/12/22	09:00	Se(VI) - selenate SeO4(-2)	64.8	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-09_N	09/12/22	09:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-09_N	09/12/22	09:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-09_N	09/12/22	09:00	Selenosulfate	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-09_N	09/12/22	09:00	Unknown Selenium Species	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-09_NP-NAL	09/12/22	09:00	Selenium	58.8	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-09_NP-NAL	09/12/22	09:00	Selenium	63.8	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	Dimethylselenoxide	0.00	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	Methaneselenonic Acid	0.00	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	Se(IV) - selenite SeO3(-2)	0.087	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	Se(VI) - selenate SeO4(-2)	87.4	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	Selenosulfate	0.00	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	Unknown Selenium Species	0.00	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-09_NP-NAL	09/18/22	14:15	Selenium	82.6	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-09_NP-NAL	09/18/22	14:15	Selenium	83.1	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-09_N	09/14/22	13:00	Dimethylselenoxide	0.00	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-09_N	09/14/22	13:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.008	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-09_N	09/14/22	13:00	Methaneselenonic Acid	0.00	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-09_N	09/14/22	13:00	Se(IV) - selenite SeO3(-2)	0.084	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-09_N	09/14/22	13:00	Se(VI) - selenate SeO4(-2)	68.3	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-09_N	09/14/22	13:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-09_N	09/14/22	13:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-09_N	09/14/22	13:00	Selenosulfate	0.00	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-09_N	09/14/22	13:00	Unknown Selenium Species	0.00	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-09_NP-NAL	09/14/22	13:00	Selenium	75.1	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-09_NP-NAL	09/14/22	13:00	Selenium	79.9	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-09_N	09/18/22	09:00	Dimethylselenoxide	0.00	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-09_N	09/18/22	09:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-09_N	09/18/22	09:00	Methaneselenonic Acid	0.00	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-09_N	09/18/22	09:00	Se(IV) - selenite SeO3(-2)	0.091	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-09_N	09/18/22	09:00	Se(VI) - selenate SeO4(-2)	86.8	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-09_N	09/18/22	09:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-09_N	09/18/22	09:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-09_N	09/18/22	09:00	Selenosulfate	0.00	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-09_N	09/18/22	09:00	Unknown Selenium Species	0.00	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-09_NP-NAL	09/18/22	09:00	Selenium	85.7	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-09_NP-NAL	09/18/22	09:00	Selenium	82.1	ug/L
RG_GRASSY_WS_LAEMP_FRO_2022-09_N	09/16/22	08:00	Dimethylselenoxide	0.015	ug/L
RG_GRASSY_WS_LAEMP_FRO_2022-09_N	09/16/22	08:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.034	ug/L
RG_GRASSY_WS_LAEMP_FRO_2022-09_N	09/16/22	08:00	Methaneselenonic Acid	0.00	ug/L
RG_GRASSY_WS_LAEMP_FRO_2022-09_N	09/16/22	08:00	Se(IV) - selenite SeO3(-2)	1.74	ug/L
RG_GRASSY_WS_LAEMP_FRO_2022-09_N	09/16/22	08:00	Se(VI) - selenate SeO4(-2)	121	ug/L
RG_GRASSY_WS_LAEMP_FRO_2022-09_N	09/16/22	08:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_GRASSY_WS_LAEMP_FRO_2022-09_N	09/16/22	08:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_GRASSY_WS_LAEMP_FRO_2022-09_N	09/16/22	08:00	Selenosulfate	0.00	ug/L
RG_GRASSY_WS_LAEMP_FRO_2022-09_N	09/16/22	08:00	Unknown Selenium Species	0.00	ug/L
RG_GRASSY_WS_LAEMP_FRO_2022-09_NP-NAL	09/16/22	08:00	Selenium	115	ug/L
RG_GRASSY_WS_LAEMP_FRO_2022-09_NP-NAL	09/16/22	08:00	Selenium	117	ug/L
RG_HENUP_WS_LAEMP_FRO_2022-09_N	09/12/22	09:30	Dimethylselenoxide	0.00	ug/L
RG_HENUP_WS_LAEMP_FRO_2022-09_N	09/12/22	09:30	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_HENUP_WS_LAEMP_FRO_2022-09_N	09/12/22	09:30	Methaneselenonic Acid	0.00	ug/L
RG_HENUP_WS_LAEMP_FRO_2022-09_N	09/12/22	09:30	Se(IV) - selenite SeO3(-2)	0.011	ug/L
RG_HENUP_WS_LAEMP_FRO_2022-09_N	09/12/22	09:30	Se(VI) - selenate SeO4(-2)	1.02	ug/L
RG_HENUP_WS_LAEMP_FRO_2022-09_N	09/12/22	09:30	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_HENUP_WS_LAEMP_FRO_2022-09_N	09/12/22	09:30	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_HENUP_WS_LAEMP_FRO_2022-09_N	09/12/22	09:30	Selenosulfate	0.00	ug/L
RG_HENUP_WS_LAEMP_FRO_2022-09_N	09/12/22	09:30	Unknown Selenium Species	0.00	ug/L
RG_HENUP_WS_LAEMP_FRO_2022-09_NP-NAL	09/12/22	09:30	Selenium	0.936	ug/L
RG_HENUP_WS_LAEMP_FRO_2022-09_NP-NAL	09/12/22	09:30	Selenium	0.946	ug/L
RG_KICK_WS_LAEMP_FRO_2022-09_N	09/15/22	14:00	Dimethylselenoxide	0.00	ug/L
RG_KICK_WS_LAEMP_FRO_2022-09_N	09/15/22	14:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_KICK_WS_LAEMP_FRO_2022-09_N	09/15/22	14:00	Methaneselenonic Acid	0.00	ug/L
RG_KICK_WS_LAEMP_FRO_2022-09_N	09/15/22	14:00	Se(IV) - selenite SeO3(-2)	0.070	ug/L
RG_KICK_WS_LAEMP_FRO_2022-09_N	09/15/22	14:00	Se(VI) - selenate SeO4(-2)	277	ug/L
RG_KICK_WS_LAEMP_FRO_2022-09_N	09/15/22	14:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_KICK_WS_LAEMP_FRO_2022-09_N	09/15/22	14:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_KICK_WS_LAEMP_FRO_2022-09_N	09/15/22	14:00	Selenosulfate	0.00	ug/L
RG_KICK_WS_LAEMP_FRO_2022-09_N	09/15/22	14:00	Unknown Selenium Species	0.00	ug/L
RG_KICK_WS_LAEMP_FRO_2022-09_NP-NAL	09/15/22	14:00	Selenium	251	ug/L
RG_KICK_WS_LAEMP_FRO_2022-09_NP-NAL	09/15/22	14:00	Selenium	257	ug/L
RG_MP1_WS_LAEMP_FRO_2022-09_N	09/12/22	13:00	Dimethylselenoxide	0.003	ug/L
RG_MP1_WS_LAEMP_FRO_2022-09_N	09/12/22	13:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.009	ug/L
RG_MP1_WS_LAEMP_FRO_2022-09_N	09/12/22	13:00	Methaneselenonic Acid	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-09_N	09/12/22	13:00	Se(IV) - selenite SeO3(-2)	0.232	ug/L
RG_MP1_WS_LAEMP_FRO_2022-09_N	09/12/22	13:00	Se(VI) - selenate SeO4(-2)	65.4	ug/L
RG_MP1_WS_LAEMP_FRO_2022-09_N	09/12/22	13:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-09_N	09/12/22	13:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-09_N	09/12/22	13:00	Selenosulfate	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-09_N	09/12/22	13:00	Unknown Selenium Species	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-09_NP-NAL	09/12/22	13:00	Selenium	59.7	ug/L

Sys_Sample_Code	Sample_D	Sample_Ti	Chemical_Name	Result_Value	Result_Un
RG_MP1_WS_LAEMP_FRO_2022-09_NP-NAL	09/12/22	13:00	Selenium	58.0	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	Dimethylselenoxide	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	Methaneselenonic Acid	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	Se(IV) - selenite SeO3(-2)	0.094	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	Se(VI) - selenate SeO4(-2)	88.4	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	Selenosulfate	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-09_N	09/18/22	14:15	Unknown Selenium Species	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-09_NP-NAL	09/18/22	14:15	Selenium	84.1	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-09_NP-NAL	09/18/22	14:15	Selenium	88.2	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-09_N	09/13/22	15:00	Dimethylselenoxide	0.009	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-09_N	09/13/22	15:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.026	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-09_N	09/13/22	15:00	Methaneselenonic Acid	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-09_N	09/13/22	15:00	Se(IV) - selenite SeO3(-2)	0.271	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-09_N	09/13/22	15:00	Se(VI) - selenate SeO4(-2)	59.3	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-09_N	09/13/22	15:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-09_N	09/13/22	15:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-09_N	09/13/22	15:00	Selenosulfate	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-09_N	09/13/22	15:00	Unknown Selenium Species	0.008	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-09_NP-NAL	09/13/22	15:00	Selenium	56.1	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-09_NP-NAL	09/13/22	15:00	Selenium	57.4	ug/L
B222130-BLK1			Dimethylselenoxide	0.00	ug/L
B222130-BLK1			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B222130-BLK1			Methaneselenonic Acid	0.00	ug/L
B222130-BLK1			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B222130-BLK1			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B222130-BLK1			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B222130-BLK1			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B222130-BLK1			Selenosulfate	0.00	ug/L
B222130-BLK1			Unknown Selenium Species	0.00	ug/L
B222130-BLK2			Dimethylselenoxide	0.00	ug/L
B222130-BLK2			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B222130-BLK2			Methaneselenonic Acid	0.00	ug/L
B222130-BLK2			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B222130-BLK2			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B222130-BLK2			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B222130-BLK2			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B222130-BLK2			Selenosulfate	0.00	ug/L
B222130-BLK2			Unknown Selenium Species	0.00	ug/L
B222130-BLK3			Dimethylselenoxide	0.00	ug/L
B222130-BLK3			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B222130-BLK3			Methaneselenonic Acid	0.00	ug/L
B222130-BLK3			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B222130-BLK3			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B222130-BLK3			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B222130-BLK3			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B222130-BLK3			Selenosulfate	0.00	ug/L
B222130-BLK3			Unknown Selenium Species	0.00	ug/L
B222130-BLK4			Dimethylselenoxide	0.00	ug/L
B222130-BLK4			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B222130-BLK4			Methaneselenonic Acid	0.00	ug/L
B222130-BLK4			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B222130-BLK4			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B222130-BLK4			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B222130-BLK4			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B222130-BLK4			Selenosulfate	0.00	ug/L
B222130-BLK4			Unknown Selenium Species	0.00	ug/L
B222203-BLK1			Selenium	-0.026	ug/L
B222203-BLK2			Selenium	-0.076	ug/L
B222203-BLK3			Selenium	-0.031	ug/L
B222203-BLK4			Selenium	-0.040	ug/L
B222203-BLK5			Selenium	-0.054	ug/L
B222130-DUP6			Dimethylselenoxide	0.000	ug/L
B222130-DUP6			MeSe(IV) - methylseleninic acid CH3SeO2H	0.009	ug/L
B222130-DUP6			Methaneselenonic Acid	0.000	ug/L
B222130-DUP6			Se(IV) - selenite SeO3(-2)	0.087	ug/L
B222130-DUP6			Se(VI) - selenate SeO4(-2)	67.22	ug/L
B222130-DUP6			SeCN - selenocyanate SeCN(-1)	0.000	ug/L
B222130-DUP6			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.000	ug/L
B222130-DUP6			Selenosulfate	0.000	ug/L
B222130-DUP6			Unknown Selenium Species	0.000	ug/L
B222130-DUP7			Dimethylselenoxide	0.017	ug/L
B222130-DUP7			MeSe(IV) - methylseleninic acid CH3SeO2H	0.032	ug/L
B222130-DUP7			Methaneselenonic Acid	0.000	ug/L
B222130-DUP7			Se(IV) - selenite SeO3(-2)	1.598	ug/L
B222130-DUP7			Se(VI) - selenate SeO4(-2)	117.9	ug/L
B222130-DUP7			SeCN - selenocyanate SeCN(-1)	0.000	ug/L
B222130-DUP7			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.000	ug/L
B222130-DUP7			Selenosulfate	0.000	ug/L
B222130-DUP7			Unknown Selenium Species	0.000	ug/L
B222130-DUP8			Dimethylselenoxide	0.000	ug/L
B222130-DUP8			MeSe(IV) - methylseleninic acid CH3SeO2H	0.000	ug/L
B222130-DUP8			Methaneselenonic Acid	0.000	ug/L
B222130-DUP8			Se(IV) - selenite SeO3(-2)	0.095	ug/L
B222130-DUP8			Se(VI) - selenate SeO4(-2)	88.04	ug/L
B222130-DUP8			SeCN - selenocyanate SeCN(-1)	0.000	ug/L
B222130-DUP8			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.000	ug/L
B222130-DUP8			Selenosulfate	0.000	ug/L
B222130-DUP8			Unknown Selenium Species	0.000	ug/L
B222203-DUP6			Selenium	1.094	ug/L
B222203-DUP7			Selenium	74.03	ug/L
B222203-DUP8			Selenium	70.62	ug/L
B222203-DUP9			Selenium	83.60	ug/L
B222203-DUPA			Selenium	82.48	ug/L
B222130-BS1			MeSe(IV) - methylseleninic acid CH3SeO2H	6.159	ug/L
B222130-BS1			Se(IV) - selenite SeO3(-2)	5.689	ug/L
B222130-BS1			Se(VI) - selenate SeO4(-2)	5.231	ug/L
B222130-BS1			SeCN - selenocyanate SeCN(-1)	5.177	ug/L
B222130-BS1			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	5.459	ug/L
B222203-BS1			Selenium	174.3	ug/L
B222203-BS2			Selenium	178.8	ug/L
B222203-BS3			Selenium	179.9	ug/L

Sys_Sample_Code	Sample_D	Sample_Ti	Chemical_Name	Result_Value	Result_Uni
B222203-BS4			Selenium	173.4	ug/L
B222203-BS5			Selenium	182.9	ug/L
B222130-MS6			Se(IV) - selenite SeO3(-2)	4.914	ug/L
B222130-MS6			Se(VI) - selenate SeO4(-2)	72.24	ug/L
B222130-MS6			SeCN - selenocyanate SeCN(-1)	1.773	ug/L
B222130-MS6			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	1.811	ug/L
B222130-MS7			Se(IV) - selenite SeO3(-2)	6.202	ug/L
B222130-MS7			Se(VI) - selenate SeO4(-2)	122.8	ug/L
B222130-MS7			SeCN - selenocyanate SeCN(-1)	1.735	ug/L
B222130-MS7			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	1.788	ug/L
B222130-MS8			Se(IV) - selenite SeO3(-2)	4.934	ug/L
B222130-MS8			Se(VI) - selenate SeO4(-2)	91.88	ug/L
B222130-MS8			SeCN - selenocyanate SeCN(-1)	1.788	ug/L
B222130-MS8			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	1.775	ug/L
B222203-MS6			Selenium	202.6	ug/L
B222203-MS7			Selenium	269.3	ug/L
B222203-MS8			Selenium	286.2	ug/L
B222203-MS9			Selenium	294.9	ug/L
B222203-MSA			Selenium	287.7	ug/L
B222130-MSD6			Se(IV) - selenite SeO3(-2)	5.061	ug/L
B222130-MSD6			Se(VI) - selenate SeO4(-2)	72.77	ug/L
B222130-MSD6			SeCN - selenocyanate SeCN(-1)	1.784	ug/L
B222130-MSD6			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	1.813	ug/L
B222130-MSD7			Se(IV) - selenite SeO3(-2)	6.117	ug/L
B222130-MSD7			Se(VI) - selenate SeO4(-2)	124.2	ug/L
B222130-MSD7			SeCN - selenocyanate SeCN(-1)	1.835	ug/L
B222130-MSD7			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	2.007	ug/L
B222130-MSD8			Se(IV) - selenite SeO3(-2)	4.976	ug/L
B222130-MSD8			Se(VI) - selenate SeO4(-2)	92.36	ug/L
B222130-MSD8			SeCN - selenocyanate SeCN(-1)	1.796	ug/L
B222130-MSD8			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	1.955	ug/L
B222203-MSD6			Selenium	198.5	ug/L
B222203-MSD7			Selenium	282.4	ug/L
B222203-MSD8			Selenium	246.2	ug/L
B222203-MSD9			Selenium	300.6	ug/L
B222203-MSDA			Selenium	289.4	ug/L
B222203-SRM1			Selenium	12.81	ug/L
B222203-SRM2			Selenium	13.33	ug/L
B222203-SRM3			Selenium	13.09	ug/L
B222203-SRM4			Selenium	13.25	ug/L
B222203-SRM5			Selenium	13.11	ug/L

Sys_Sample_Code	Sample_Date	Sample_Time	Chemical_Name	Result_Value	Result_Unit
RG_FODHE_WS_LAEMP_FRO_2022-09_N	09/19/22	11:45	Dimethylselenoxide	0.004	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-09_N	09/19/22	11:45	MeSe(IV) - methylseleninic acid CH3SeO2H	0.009	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-09_N	09/19/22	11:45	Methaneselenonic Acid	0.00	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-09_N	09/19/22	11:45	Se(IV) - selenite SeO3(-2)	0.076	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-09_N	09/19/22	11:45	Se(VI) - selenate SeO4(-2)	16.3	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-09_N	09/19/22	11:45	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-09_N	09/19/22	11:45	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-09_N	09/19/22	11:45	Selenosulfate	0.00	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-09_N	09/19/22	11:45	Unknown Selenium Species	0.00	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-09_NP-NAL	09/19/22	11:45	Selenium	15.7	ug/L
RG_FODHE_WS_LAEMP_FRO_2022-09_NP-NAL	09/19/22	11:45	Selenium	16.6	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/10/22	14:00	Dimethylselenoxide	0.00	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/10/22	14:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.007	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/10/22	14:00	Methaneselenonic Acid	0.00	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/10/22	14:00	Se(IV) - selenite SeO3(-2)	0.095	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/10/22	14:00	Se(VI) - selenate SeO4(-2)	33.5	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/10/22	14:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/10/22	14:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/10/22	14:00	Selenosulfate	0.00	ug/L
RG_FOU EW_WS_LAEMP_FRO_2022-09_N	09/10/22	14:00	Unknown Selenium Species	0.00	ug/L
RG_FRCP1SW_WS_LAEMP_FRO_2022-09_N	09/19/22	09:00	Dimethylselenoxide	0.00	ug/L
RG_FRCP1SW_WS_LAEMP_FRO_2022-09_N	09/19/22	09:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.017	ug/L
RG_FRCP1SW_WS_LAEMP_FRO_2022-09_N	09/19/22	09:00	Methaneselenonic Acid	0.00	ug/L
RG_FRCP1SW_WS_LAEMP_FRO_2022-09_N	09/19/22	09:00	Se(IV) - selenite SeO3(-2)	0.184	ug/L
RG_FRCP1SW_WS_LAEMP_FRO_2022-09_N	09/19/22	09:00	Se(VI) - selenate SeO4(-2)	43.9	ug/L
RG_FRCP1SW_WS_LAEMP_FRO_2022-09_N	09/19/22	09:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FRCP1SW_WS_LAEMP_FRO_2022-09_N	09/19/22	09:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FRCP1SW_WS_LAEMP_FRO_2022-09_N	09/19/22	09:00	Selenosulfate	0.00	ug/L
RG_FRCP1SW_WS_LAEMP_FRO_2022-09_N	09/19/22	09:00	Unknown Selenium Species	0.00	ug/L
RG_FRCP1SW_WS_LAEMP_FRO_2022-09_NP-NAL	09/19/22	09:00	Selenium	58.2	ug/L
RG_FRCP1SW_WS_LAEMP_FRO_2022-09_NP-NAL	09/19/22	09:00	Selenium	60.1	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-09_N	09/19/22	14:30	Dimethylselenoxide	0.00	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-09_N	09/19/22	14:30	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-09_N	09/19/22	14:30	Methaneselenonic Acid	0.00	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-09_N	09/19/22	14:30	Se(IV) - selenite SeO3(-2)	0.018	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-09_N	09/19/22	14:30	Se(VI) - selenate SeO4(-2)	0.618	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-09_N	09/19/22	14:30	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-09_N	09/19/22	14:30	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-09_N	09/19/22	14:30	Selenosulfate	0.00	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-09_N	09/19/22	14:30	Unknown Selenium Species	0.00	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-09_NP-NAL	09/19/22	14:30	Selenium	0.674	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-09_NP-NAL	09/19/22	14:30	Selenium	0.684	ug/L
B222221-BLK1			Dimethylselenoxide	0.00	ug/L
B222221-BLK1			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B222221-BLK1			Methaneselenonic Acid	0.00	ug/L
B222221-BLK1			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B222221-BLK1			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B222221-BLK1			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B222221-BLK1			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B222221-BLK1			Selenosulfate	0.00	ug/L
B222221-BLK1			Unknown Selenium Species	0.00	ug/L
B222221-BLK2			Dimethylselenoxide	0.00	ug/L
B222221-BLK2			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B222221-BLK2			Methaneselenonic Acid	0.00	ug/L
B222221-BLK2			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B222221-BLK2			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B222221-BLK2			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B222221-BLK2			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B222221-BLK2			Selenosulfate	0.00	ug/L
B222221-BLK2			Unknown Selenium Species	0.00	ug/L
B222221-BLK3			Dimethylselenoxide	0.00	ug/L
B222221-BLK3			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B222221-BLK3			Methaneselenonic Acid	0.00	ug/L
B222221-BLK3			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B222221-BLK3			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B222221-BLK3			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B222221-BLK3			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B222221-BLK3			Selenosulfate	0.00	ug/L
B222221-BLK3			Unknown Selenium Species	0.00	ug/L
B222221-BLK4			Dimethylselenoxide	0.00	ug/L
B222221-BLK4			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B222221-BLK4			Methaneselenonic Acid	0.00	ug/L
B222221-BLK4			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B222221-BLK4			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B222221-BLK4			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B222221-BLK4			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B222221-BLK4			Selenosulfate	0.00	ug/L
B222221-BLK4			Unknown Selenium Species	0.00	ug/L
B222268-BLK1			Selenium	0.027	ug/L
B222268-BLK2			Selenium	0.095	ug/L
B222268-BLK3			Selenium	-0.028	ug/L
B222268-BLK4			Selenium	0.019	ug/L
B222221-DUP5			Dimethylselenoxide	0.000	ug/L
B222221-DUP5			MeSe(IV) - methylseleninic acid CH3SeO2H	0.007	ug/L
B222221-DUP5			Methaneselenonic Acid	0.000	ug/L
B222221-DUP5			Se(IV) - selenite SeO3(-2)	0.098	ug/L
B222221-DUP5			Se(VI) - selenate SeO4(-2)	33.40	ug/L
B222221-DUP5			SeCN - selenocyanate SeCN(-1)	0.000	ug/L
B222221-DUP5			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.000	ug/L
B222221-DUP5			Selenosulfate	0.000	ug/L
B222221-DUP5			Unknown Selenium Species	0.000	ug/L
B222268-DUP4			Selenium	56.79	ug/L
B222221-BS1			MeSe(IV) - methylseleninic acid CH3SeO2H	5.499	ug/L
B222221-BS1			Se(IV) - selenite SeO3(-2)	5.194	ug/L
B222221-BS1			Se(VI) - selenate SeO4(-2)	4.839	ug/L
B222221-BS1			SeCN - selenocyanate SeCN(-1)	4.817	ug/L
B222221-BS1			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	4.857	ug/L
B222268-BS1			Selenium	170.2	ug/L
B222268-BS2			Selenium	157.6	ug/L
B222268-BS3			Selenium	178.1	ug/L
B222221-MS5			Se(IV) - selenite SeO3(-2)	4.663	ug/L

Sys_Sample_Code	Sample_Date	Sample_Time	Chemical_Name	Result_Value	Result_Unit
B222221-MS5			Se(VI) - selenate SeO4(-2)	37.92	ug/L
B222221-MS5			SeCN - selenocyanate SeCN(-1)	1.785	ug/L
B222221-MS5			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	1.815	ug/L
B222268-MS4			Selenium	273.4	ug/L
B222221-MSD5			Se(IV) - selenite SeO3(-2)	4.594	ug/L
B222221-MSD5			Se(VI) - selenate SeO4(-2)	37.61	ug/L
B222221-MSD5			SeCN - selenocyanate SeCN(-1)	1.786	ug/L
B222221-MSD5			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	1.856	ug/L
B222268-MSD4			Selenium	248.3	ug/L
B222268-SRM1			Selenium	11.10	ug/L
B222268-SRM2			Selenium	11.88	ug/L
B222268-SRM3			Selenium	11.92	ug/L

Sys_Sample_Code	Sample_D	Sample_Ti	Chemical_Name	Result_Value	Result_Un
RG_FBLANK_WS_LAEMP_FRO_2022-11_N	11/07/22	16:10	Dimethylselenoxide	0.00	ug/L
RG_FBLANK_WS_LAEMP_FRO_2022-11_N	11/07/22	16:10	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_FBLANK_WS_LAEMP_FRO_2022-11_N	11/07/22	16:10	Methaneselenonic Acid	0.00	ug/L
RG_FBLANK_WS_LAEMP_FRO_2022-11_N	11/07/22	16:10	Se(IV) - selenite SeO3(-2)	0.00	ug/L
RG_FBLANK_WS_LAEMP_FRO_2022-11_N	11/07/22	16:10	Se(VI) - selenate SeO4(-2)	0.00	ug/L
RG_FBLANK_WS_LAEMP_FRO_2022-11_N	11/07/22	16:10	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FBLANK_WS_LAEMP_FRO_2022-11_N	11/07/22	16:10	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FBLANK_WS_LAEMP_FRO_2022-11_N	11/07/22	16:10	Selenosulfate	0.00	ug/L
RG_FBLANK_WS_LAEMP_FRO_2022-11_N	11/07/22	16:10	Unknown Selenium Species	0.00	ug/L
RG_FBLANK_WS_LAEMP_FRO_2022-11_N-NAL	11/07/22	16:10	Selenium	0.124	ug/L
RG_FBLANK_WS_LAEMP_FRO_2022-11_N-NAL	11/07/22	16:10	Selenium	0.091	ug/L
RG_FO22_WS_LAEMP_FRO_2022-11_N	11/08/22	08:30	Dimethylselenoxide	0.00	ug/L
RG_FO22_WS_LAEMP_FRO_2022-11_N	11/08/22	08:30	MeSe(IV) - methylseleninic acid CH3SeO2H	0.003	ug/L
RG_FO22_WS_LAEMP_FRO_2022-11_N	11/08/22	08:30	Methaneselenonic Acid	0.00	ug/L
RG_FO22_WS_LAEMP_FRO_2022-11_N	11/08/22	08:30	Se(IV) - selenite SeO3(-2)	0.099	ug/L
RG_FO22_WS_LAEMP_FRO_2022-11_N	11/08/22	08:30	Se(VI) - selenate SeO4(-2)	71.8	ug/L
RG_FO22_WS_LAEMP_FRO_2022-11_N	11/08/22	08:30	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FO22_WS_LAEMP_FRO_2022-11_N	11/08/22	08:30	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FO22_WS_LAEMP_FRO_2022-11_N	11/08/22	08:30	Selenosulfate	0.00	ug/L
RG_FO22_WS_LAEMP_FRO_2022-11_N	11/08/22	08:30	Unknown Selenium Species	0.00	ug/L
RG_FO22_WS_LAEMP_FRO_2022-11_NP-NAL	11/08/22	08:30	Selenium	80.8	ug/L
RG_FO22_WS_LAEMP_FRO_2022-11_NP-NAL	11/08/22	08:30	Selenium	78.9	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	Dimethylselenoxide	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	Methaneselenonic Acid	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	Se(IV) - selenite SeO3(-2)	0.169	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	Se(VI) - selenate SeO4(-2)	56.0	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	Selenosulfate	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	Unknown Selenium Species	0.00	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-11_NP-NAL	11/07/22	08:40	Selenium	71.1	ug/L
RG_FOBKS_WS_LAEMP_FRO_2022-11_NP-NAL	11/07/22	08:40	Selenium	74.4	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-11_N	11/07/22	12:40	Dimethylselenoxide	0.015	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-11_N	11/07/22	12:40	MeSe(IV) - methylseleninic acid CH3SeO2H	0.041	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-11_N	11/07/22	12:40	Methaneselenonic Acid	0.010	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-11_N	11/07/22	12:40	Se(IV) - selenite SeO3(-2)	0.276	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-11_N	11/07/22	12:40	Se(VI) - selenate SeO4(-2)	69.9	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-11_N	11/07/22	12:40	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-11_N	11/07/22	12:40	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-11_N	11/07/22	12:40	Selenosulfate	0.00	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-11_N	11/07/22	12:40	Unknown Selenium Species	0.00	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-11_NP-NAL	11/07/22	12:40	Selenium	79.4	ug/L
RG_FOBSC_WS_LAEMP_FRO_2022-11_NP-NAL	11/07/22	12:40	Selenium	77.3	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	Dimethylselenoxide	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	Methaneselenonic Acid	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	Se(IV) - selenite SeO3(-2)	0.207	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	Se(VI) - selenate SeO4(-2)	71.0	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	Selenosulfate	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-11_N	11/07/22	08:40	Unknown Selenium Species	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-11_N-NAL	11/07/22	08:40	Selenium	71.9	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-11_N-NAL	11/07/22	08:40	Selenium	74.8	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-11_N	11/07/22	10:45	Dimethylselenoxide	0.014	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-11_N	11/07/22	10:45	MeSe(IV) - methylseleninic acid CH3SeO2H	0.039	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-11_N	11/07/22	10:45	Methaneselenonic Acid	0.010	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-11_N	11/07/22	10:45	Se(IV) - selenite SeO3(-2)	0.253	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-11_N	11/07/22	10:45	Se(VI) - selenate SeO4(-2)	67.0	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-11_N	11/07/22	10:45	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-11_N	11/07/22	10:45	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-11_N	11/07/22	10:45	Selenosulfate	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-11_N	11/07/22	10:45	Unknown Selenium Species	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-11_NP-NAL	11/07/22	10:45	Selenium	75.2	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-11_NP-NAL	11/07/22	10:45	Selenium	79.0	ug/L
B222741-BLK1			Dimethylselenoxide	0.00	ug/L
B222741-BLK1			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B222741-BLK1			Methaneselenonic Acid	0.00	ug/L
B222741-BLK1			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B222741-BLK1			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B222741-BLK1			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B222741-BLK1			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B222741-BLK1			Selenosulfate	0.00	ug/L
B222741-BLK1			Unknown Selenium Species	0.00	ug/L
B222741-BLK2			Dimethylselenoxide	0.00	ug/L
B222741-BLK2			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B222741-BLK2			Methaneselenonic Acid	0.00	ug/L
B222741-BLK2			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B222741-BLK2			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B222741-BLK2			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B222741-BLK2			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B222741-BLK2			Selenosulfate	0.00	ug/L
B222741-BLK2			Unknown Selenium Species	0.00	ug/L
B222741-BLK3			Dimethylselenoxide	0.00	ug/L
B222741-BLK3			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B222741-BLK3			Methaneselenonic Acid	0.00	ug/L
B222741-BLK3			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B222741-BLK3			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B222741-BLK3			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B222741-BLK3			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B222741-BLK3			Selenosulfate	0.00	ug/L
B222741-BLK3			Unknown Selenium Species	0.00	ug/L
B222741-BLK4			Dimethylselenoxide	0.00	ug/L
B222741-BLK4			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B222741-BLK4			Methaneselenonic Acid	0.00	ug/L
B222741-BLK4			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B222741-BLK4			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B222741-BLK4			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B222741-BLK4			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B222741-BLK4			Selenosulfate	0.00	ug/L
B222741-BLK4			Unknown Selenium Species	0.00	ug/L
B222762-BLK1			Selenium	0.107	ug/L
B222762-BLK2			Selenium	0.067	ug/L

Sys_Sample_Code	Sample_D	Sample_Ti	Chemical_Name	Result_Value	Result_Uni
B222762-BLK3			Selenium	0.085	ug/L
B222762-BLK4			Selenium	0.063	ug/L
B222762-DUP5			Selenium	70.69	ug/L
B222741-BS1			MeSe(IV) - methylseleninic acid CH ₃ SeO ₂ H	5.581	ug/L
B222741-BS1			Se(IV) - selenite SeO ₃ (-2)	4.877	ug/L
B222741-BS1			Se(VI) - selenate SeO ₄ (-2)	4.498	ug/L
B222741-BS1			SeCN - selenocyanate SeCN(-1)	4.708	ug/L
B222741-BS1			SeMe - selenomethionine CH ₃ SeCH ₂ CH ₂ CH(NH ₂)CO ₂ H	4.972	ug/L
B222762-BS1			Selenium	197.2	ug/L
B222762-BS2			Selenium	201.4	ug/L
B222762-BS3			Selenium	195.9	ug/L
B222762-MS5			Selenium	289.2	ug/L
B222762-MSD5			Selenium	293.2	ug/L
B222762-SRM1			Selenium	3.836	ug/L
B222762-SRM2			Selenium	3.732	ug/L
B222762-SRM3			Selenium	3.581	ug/L

Sys_Sample_Code	Sample_Date	Sample_Time	Chemical_Name	Result_Val	Result_Uni
RG_FOUNGD_WS_LAEMP_FRO_2022-12_N	12/06/22	09:30	Unknown Selenium Species	0.00	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-12_NP_NAL	12/06/22	09:30	Selenium	70.3	ug/L
RG_FOUNGD_WS_LAEMP_FRO_2022-12_NP_NAL	12/06/22	09:30	Selenium	69.7	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-12_N	12/06/22	13:00	Dimethylselenoxide	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-12_N	12/06/22	13:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-12_N	12/06/22	13:00	Methaneselenonic Acid	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-12_N	12/06/22	13:00	Se(IV) - selenite SeO3(-2)	0.235	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-12_N	12/06/22	13:00	Se(VI) - selenate SeO4(-2)	90.1	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-12_N	12/06/22	13:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-12_N	12/06/22	13:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-12_N	12/06/22	13:00	Selenosulfate	0.00	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-12_N	12/06/22	13:00	Unknown Selenium Species	0.002	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-12_NP_NAL	12/06/22	13:00	Selenium	83.1	ug/L
RG_FOUSH_WS_LAEMP_FRO_2022-12_NP_NAL	12/06/22	13:00	Selenium	81.8	ug/L
RG_FRDSCC1_WS_LAEMP_FRO_2022_12_N	12/06/22	11:30	Dimethylselenoxide	0.00	ug/L
RG_FRDSCC1_WS_LAEMP_FRO_2022_12_N	12/06/22	11:30	MeSe(IV) - methylseleninic acid CH3SeO2H	0.006	ug/L
RG_FRDSCC1_WS_LAEMP_FRO_2022_12_N	12/06/22	11:30	Methaneselenonic Acid	0.00	ug/L
RG_FRDSCC1_WS_LAEMP_FRO_2022_12_N	12/06/22	11:30	Se(IV) - selenite SeO3(-2)	0.184	ug/L
RG_FRDSCC1_WS_LAEMP_FRO_2022_12_N	12/06/22	11:30	Se(VI) - selenate SeO4(-2)	66.4	ug/L
RG_FRDSCC1_WS_LAEMP_FRO_2022_12_N	12/06/22	11:30	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FRDSCC1_WS_LAEMP_FRO_2022_12_N	12/06/22	11:30	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FRDSCC1_WS_LAEMP_FRO_2022_12_N	12/06/22	11:30	Selenosulfate	0.00	ug/L
RG_FRDSCC1_WS_LAEMP_FRO_2022_12_N	12/06/22	11:30	Unknown Selenium Species	0.00	ug/L
RG_FRDSCC1_WS_LAEMP_FRO_2022_12_NP_NAL	12/06/22	11:30	Selenium	63.5	ug/L
RG_FRDSCC1_WS_LAEMP_FRO_2022_12_NP_NAL	12/06/22	11:30	Selenium	60.6	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-12_N	12/08/22	12:30	Dimethylselenoxide	0.00	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-12_N	12/08/22	12:30	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-12_N	12/08/22	12:30	Methaneselenonic Acid	0.00	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-12_N	12/08/22	12:30	Se(IV) - selenite SeO3(-2)	0.078	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-12_N	12/08/22	12:30	Se(VI) - selenate SeO4(-2)	81.4	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-12_N	12/08/22	12:30	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-12_N	12/08/22	12:30	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-12_N	12/08/22	12:30	Selenosulfate	0.00	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-12_N	12/08/22	12:30	Unknown Selenium Species	0.00	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-12_N_NAL	12/08/22	12:30	Selenium	79.5	ug/L
RG_FRGHSC_WS_LAEMP_FRO_2022-12_N_NAL	12/08/22	12:30	Selenium	76.1	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-12_N	12/07/22	09:00	Dimethylselenoxide	0.00	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-12_N	12/07/22	09:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-12_N	12/07/22	09:00	Methaneselenonic Acid	0.00	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-12_N	12/07/22	09:00	Se(IV) - selenite SeO3(-2)	0.017	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-12_N	12/07/22	09:00	Se(VI) - selenate SeO4(-2)	88.2	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-12_N	12/07/22	09:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-12_N	12/07/22	09:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-12_N	12/07/22	09:00	Selenosulfate	0.00	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-12_N	12/07/22	09:00	Unknown Selenium Species	0.00	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-12_NP_NAL	12/07/22	09:00	Selenium	89.9	ug/L
RG_FRSCH2_WS_LAEMP_FRO_2022-12_NP_NAL	12/07/22	09:00	Selenium	84.2	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-12_N	12/07/22	14:00	Dimethylselenoxide	0.00	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-12_N	12/07/22	14:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-12_N	12/07/22	14:00	Methaneselenonic Acid	0.00	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-12_N	12/07/22	14:00	Se(IV) - selenite SeO3(-2)	0.117	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-12_N	12/07/22	14:00	Se(VI) - selenate SeO4(-2)	84.4	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-12_N	12/07/22	14:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-12_N	12/07/22	14:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-12_N	12/07/22	14:00	Selenosulfate	0.00	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-12_N	12/07/22	14:00	Unknown Selenium Species	0.00	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-12_NP_NAL	12/07/22	14:00	Selenium	76.4	ug/L
RG_FRUPO_WS_LAEMP_FRO_2022-12_NP_NAL	12/07/22	14:00	Selenium	76.4	ug/L
RG_MP1_WS_LAEMP_FRO_2022-12_N	12/07/22	14:30	Dimethylselenoxide	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-12_N	12/07/22	14:30	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-12_N	12/07/22	14:30	Methaneselenonic Acid	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-12_N	12/07/22	14:30	Se(IV) - selenite SeO3(-2)	0.192	ug/L
RG_MP1_WS_LAEMP_FRO_2022-12_N	12/07/22	14:30	Se(VI) - selenate SeO4(-2)	85.8	ug/L
RG_MP1_WS_LAEMP_FRO_2022-12_N	12/07/22	14:30	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-12_N	12/07/22	14:30	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-12_N	12/07/22	14:30	Selenosulfate	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-12_N	12/07/22	14:30	Unknown Selenium Species	0.00	ug/L
RG_MP1_WS_LAEMP_FRO_2022-12_NP_NAL	12/07/22	14:30	Selenium	75.8	ug/L
RG_MP1_WS_LAEMP_FRO_2022-12_NP_NAL	12/07/22	14:30	Selenium	77.4	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-06_N	12/08/22	13:30	Dimethylselenoxide	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-06_N	12/08/22	13:30	MeSe(IV) - methylseleninic acid CH3SeO2H	0.009	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-06_N	12/08/22	13:30	Methaneselenonic Acid	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-06_N	12/08/22	13:30	Se(IV) - selenite SeO3(-2)	0.204	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-06_N	12/08/22	13:30	Se(VI) - selenate SeO4(-2)	80.5	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-06_N	12/08/22	13:30	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-06_N	12/08/22	13:30	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-06_N	12/08/22	13:30	Selenosulfate	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-06_N	12/08/22	13:30	Unknown Selenium Species	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-06_NP_NAL	12/08/22	13:30	Selenium	77.5	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-06_NP_NAL	12/08/22	13:30	Selenium	72.3	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-12_N	12/08/22	14:30	Dimethylselenoxide	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-12_N	12/08/22	14:30	MeSe(IV) - methylseleninic acid CH3SeO2H	0.006	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-12_N	12/08/22	14:30	Methaneselenonic Acid	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-12_N	12/08/22	14:30	Se(IV) - selenite SeO3(-2)	0.210	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-12_N	12/08/22	14:30	Se(VI) - selenate SeO4(-2)	79.3	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-12_N	12/08/22	14:30	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-12_N	12/08/22	14:30	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-12_N	12/08/22	14:30	Selenosulfate	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-12_N	12/08/22	14:30	Unknown Selenium Species	0.00	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-12_NP_NAL	12/08/22	14:30	Selenium	75.5	ug/L
RG_RIVER_WS_LAEMP_FRO_2022-12_NP_NAL	12/08/22	14:30	Selenium	86.9	ug/L
RG_SCDSB_WS_LAEMP_FRO_2022-12_N	12/08/22	09:30	Dimethylselenoxide	0.00	ug/L
RG_SCDSB_WS_LAEMP_FRO_2022-12_N	12/08/22	09:30	MeSe(IV) - methylseleninic acid CH3SeO2H	0.020	ug/L
RG_SCDSB_WS_LAEMP_FRO_2022-12_N	12/08/22	09:30	Methaneselenonic Acid	0.00	ug/L
RG_SCDSB_WS_LAEMP_FRO_2022-12_N	12/08/22	09:30	Se(IV) - selenite SeO3(-2)	0.223	ug/L
RG_SCDSB_WS_LAEMP_FRO_2022-12_N	12/08/22	09:30	Se(VI) - selenate SeO4(-2)	82.2	ug/L
RG_SCDSB_WS_LAEMP_FRO_2022-12_N	12/08/22	09:30	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_SCDSB_WS_LAEMP_FRO_2022-12_N	12/08/22	09:30	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_SCDSB_WS_LAEMP_FRO_2022-12_N	12/08/22	09:30	Selenosulfate	0.00	ug/L
RG_SCDSB_WS_LAEMP_FRO_2022-12_N	12/08/22	09:30	Unknown Selenium Species	0.00	ug/L
RG_SCDSB_WS_LAEMP_FRO_2022-12_NP_NAL	12/08/22	09:30	Selenium	73.9	ug/L
RG_SCDSB_WS_LAEMP_FRO_2022-12_NP_NAL	12/08/22	09:30	Selenium	77.5	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-12_N	12/08/22	08:00	Dimethylselenoxide	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-12_N	12/08/22	08:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.041	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-12_N	12/08/22	08:00	Methaneselenonic Acid	0.016	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-12_N	12/08/22	08:00	Se(IV) - selenite SeO3(-2)	0.260	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-12_N	12/08/22	08:00	Se(VI) - selenate SeO4(-2)	79.6	ug/L

Sys_Sample_Code	Sample_Date	Sample_Time	Chemical_Name	Result_Val	Result_Uni
RG_SCOUTDS_WS_LAEMP_FRO_2022-12_N	12/08/22	08:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-12_N	12/08/22	08:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-12_N	12/08/22	08:00	Selenosulfate	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-12_N	12/08/22	08:00	Unknown Selenium Species	0.00	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-12_NP_NAL	12/08/22	08:00	Selenium	73.2	ug/L
RG_SCOUTDS_WS_LAEMP_FRO_2022-12_NP_NAL	12/08/22	08:00	Selenium	73.5	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-12_N	12/05/22	13:00	Dimethylselenoxide	0.00	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-12_N	12/05/22	13:00	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-12_N	12/05/22	13:00	Methaneselenonic Acid	0.00	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-12_N	12/05/22	13:00	Se(IV) - selenite SeO3(-2)	0.018	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-12_N	12/05/22	13:00	Se(VI) - selenate SeO4(-2)	0.764	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-12_N	12/05/22	13:00	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-12_N	12/05/22	13:00	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-12_N	12/05/22	13:00	Selenosulfate	0.00	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-12_N	12/05/22	13:00	Unknown Selenium Species	0.00	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-12_NP_NAL	12/05/22	13:00	Selenium	0.813	ug/L
RG_UFR1_WS_LAEMP_FRO_2022-12_NP_NAL	12/05/22	13:00	Selenium	0.810	ug/L
RG_WED_WS_LAEMP_FRO_2022_12_N	12/06/22	08:45	Dimethylselenoxide	0.00	ug/L
RG_WED_WS_LAEMP_FRO_2022_12_N	12/06/22	08:45	MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
RG_WED_WS_LAEMP_FRO_2022_12_N	12/06/22	08:45	Methaneselenonic Acid	0.00	ug/L
RG_WED_WS_LAEMP_FRO_2022_12_N	12/06/22	08:45	Se(IV) - selenite SeO3(-2)	0.048	ug/L
RG_WED_WS_LAEMP_FRO_2022_12_N	12/06/22	08:45	Se(VI) - selenate SeO4(-2)	52.7	ug/L
RG_WED_WS_LAEMP_FRO_2022_12_N	12/06/22	08:45	SeCN - selenocyanate SeCN(-1)	0.00	ug/L
RG_WED_WS_LAEMP_FRO_2022_12_N	12/06/22	08:45	SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
RG_WED_WS_LAEMP_FRO_2022_12_N	12/06/22	08:45	Selenosulfate	0.00	ug/L
RG_WED_WS_LAEMP_FRO_2022_12_N	12/06/22	08:45	Unknown Selenium Species	0.00	ug/L
RG_WED_WS_LAEMP_FRO_2022_12_NP_NAL	12/06/22	08:45	Selenium	49.0	ug/L
RG_WED_WS_LAEMP_FRO_2022_12_NP_NAL	12/06/22	08:45	Selenium	48.4	ug/L
B223068-BLK1			Dimethylselenoxide	0.00	ug/L
B223068-BLK1			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B223068-BLK1			Methaneselenonic Acid	0.00	ug/L
B223068-BLK1			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B223068-BLK1			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B223068-BLK1			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B223068-BLK1			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B223068-BLK1			Selenosulfate	0.00	ug/L
B223068-BLK1			Unknown Selenium Species	0.00	ug/L
B223068-BLK2			Dimethylselenoxide	0.00	ug/L
B223068-BLK2			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B223068-BLK2			Methaneselenonic Acid	0.00	ug/L
B223068-BLK2			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B223068-BLK2			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B223068-BLK2			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B223068-BLK2			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B223068-BLK2			Selenosulfate	0.00	ug/L
B223068-BLK2			Unknown Selenium Species	0.00	ug/L
B223068-BLK3			Dimethylselenoxide	0.00	ug/L
B223068-BLK3			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B223068-BLK3			Methaneselenonic Acid	0.00	ug/L
B223068-BLK3			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B223068-BLK3			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B223068-BLK3			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B223068-BLK3			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B223068-BLK3			Selenosulfate	0.00	ug/L
B223068-BLK3			Unknown Selenium Species	0.00	ug/L
B223068-BLK4			Dimethylselenoxide	0.00	ug/L
B223068-BLK4			MeSe(IV) - methylseleninic acid CH3SeO2H	0.00	ug/L
B223068-BLK4			Methaneselenonic Acid	0.00	ug/L
B223068-BLK4			Se(IV) - selenite SeO3(-2)	0.00	ug/L
B223068-BLK4			Se(VI) - selenate SeO4(-2)	0.00	ug/L
B223068-BLK4			SeCN - selenocyanate SeCN(-1)	0.00	ug/L
B223068-BLK4			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.00	ug/L
B223068-BLK4			Selenosulfate	0.00	ug/L
B223068-BLK4			Unknown Selenium Species	0.00	ug/L
B223142-BLK1			Selenium	0.041	ug/L
B223142-BLK2			Selenium	0.039	ug/L
B223142-BLK3			Selenium	0.070	ug/L
B223142-BLK4			Selenium	0.011	ug/L
B223177-BLK1			Selenium	0.067	ug/L
B223177-BLK2			Selenium	0.097	ug/L
B223177-BLK3			Selenium	0.046	ug/L
B223177-BLK4			Selenium	0.078	ug/L
B223068-DUP7			Dimethylselenoxide	0.000	ug/L
B223068-DUP7			MeSe(IV) - methylseleninic acid CH3SeO2H	0.000	ug/L
B223068-DUP7			Methaneselenonic Acid	0.000	ug/L
B223068-DUP7			Se(IV) - selenite SeO3(-2)	0.113	ug/L
B223068-DUP7			Se(VI) - selenate SeO4(-2)	82.65	ug/L
B223068-DUP7			SeCN - selenocyanate SeCN(-1)	0.000	ug/L
B223068-DUP7			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	0.000	ug/L
B223068-DUP7			Selenosulfate	0.000	ug/L
B223068-DUP7			Unknown Selenium Species	0.000	ug/L
B223142-DUP1			Selenium	76.37	ug/L
B223142-DUP3			Selenium	71.84	ug/L
B223142-DUP4			Selenium	60.87	ug/L
B223177-DUP1			Selenium	80.82	ug/L
B223068-BS1			MeSe(IV) - methylseleninic acid CH3SeO2H	5.608	ug/L
B223068-BS1			Se(IV) - selenite SeO3(-2)	4.946	ug/L
B223068-BS1			Se(VI) - selenate SeO4(-2)	4.638	ug/L
B223068-BS1			SeCN - selenocyanate SeCN(-1)	4.822	ug/L
B223068-BS1			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	5.088	ug/L
B223142-BS1			Selenium	179.2	ug/L
B223142-BS2			Selenium	181.7	ug/L
B223142-BS3			Selenium	177.3	ug/L
B223177-BS1			Selenium	175.3	ug/L
B223177-BS2			Selenium	175.3	ug/L
B223177-BS3			Selenium	178.6	ug/L
B223068-MS7			Se(IV) - selenite SeO3(-2)	5.039	ug/L
B223068-MS7			Se(VI) - selenate SeO4(-2)	88.30	ug/L
B223068-MS7			SeCN - selenocyanate SeCN(-1)	1.963	ug/L
B223068-MS7			SeMe - selenomethionine CH3SeCH2CH2CH(NH2)CO2H	2.055	ug/L
B223142-MS1			Selenium	284.5	ug/L
B223142-MS3			Selenium	280.5	ug/L
B223142-MS4			Selenium	255.7	ug/L
B223177-MS1			Selenium	275.2	ug/L
B223068-MSD7			Se(IV) - selenite SeO3(-2)	5.130	ug/L
B223068-MSD7			Se(VI) - selenate SeO4(-2)	88.36	ug/L
B223068-MSD7			SeCN - selenocyanate SeCN(-1)	1.961	ug/L

Sys_Sample_Code	Sample_Date	Sample_Time	Chemical_Name	Result_Val	Result_Uni
B223068-MSD7			SeMe - selenomethionine <chem>CH3SeCH2CH2CH(NH2)CO2H</chem>	2.085	ug/L
B223142-MSD1			Selenium	278.8	ug/L
B223142-MSD3			Selenium	277.6	ug/L
B223142-MSD4			Selenium	262.9	ug/L
B223177-MSD1			Selenium	263.5	ug/L
B223142-SRM1			Selenium	3.405	ug/L
B223142-SRM2			Selenium	3.355	ug/L
B223142-SRM3			Selenium	3.288	ug/L
B223177-SRM1			Selenium	3.674	ug/L
B223177-SRM2			Selenium	3.541	ug/L
B223177-SRM3			Selenium	3.559	ug/L

Teck Coal Limited
Tissue Analysis Results

			RG_FOUNGD_IN	RG_FOUNGD_IN	RG_FOUNGD_IN	RG_FOBKS_INV-	RG_FOBKS_INV-
Client ID			V-01_2022-06-	V-02_2022-06-	V-03_2022-06-	01_2022-06-13_N	02_2022-06-
			13_N	13_N	13_N		13_N
Lab ID			347	348	349	350	351
Wet Weight (g)			0.4183	0.4934	0.6802	0.1145	0.0541
Dry Weight (g)			0.0943	0.1095	0.1680	0.0306	0.0138
Moisture (%)			77.5	77.8	75.3	73.3	74.5
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.021	0.070	1.3	1.7	1.1	1.7	1.5
11B	0.076	0.253	1.3	3.5	2.2	1.4	3.3
23Na	5.4	18	4,643	3,625	4,043	4,416	2,491
24Mg	0.112	0.373	1,968	2,248	2,232	1,041	1,705
27Al	0.086	0.287	953	3,630	1,467	1,351	3,358
31P	83	277	18,144	14,690	13,755	9,891	14,445
39K	3.4	11	13,806	15,127	12,554	11,192	9,745
44Ca	9.9	33	4,017	4,434	3,526	1,939	3,618
49Ti	0.001	0.003	60	226	100	92	242
51V	0.044	0.147	1.7	6.8	2.9	2.0	5.6
52Cr	0.168	0.560	9.0	16	14	17	33
55Mn	0.013	0.043	55	90	79	28	77
57Fe	1.3	4.3	646	1,442	891	720	1,754
59Co	0.021	0.070	17	12	16	0.643	6.9
60Ni	0.060	0.200	22	34	34	29	51
63Cu	0.027	0.090	31	22	25	41	19
66Zn	0.430	1.4	905	485	646	204	554
75As	0.498	1.7	1.5	2.2	2.5	<0.498	1.2
77Se	0.480	1.6	11	7.4	8.3	5.0	6.3
88Sr	0.003	0.010	6.1	8.9	5.7	3.4	7.7
95Mo	0.012	0.040	0.407	0.565	0.384	0.542	0.655
107Ag	0.001	0.003	0.181	0.169	0.157	0.212	0.133
111Cd	0.157	0.523	14	7.9	12	0.331	8.7
118Sn	0.114	0.380	0.887	0.908	0.478	0.440	1.2
121Sb	0.006	0.020	0.039	0.064	0.039	0.057	0.070
137Ba	0.001	0.003	42	76	38	27	58
202Hg	0.034	0.113	0.101	0.067	0.051	<0.034	0.045
205Tl	0.001	0.003	0.076	0.089	0.087	0.029	0.087
208Pb	0.001	0.003	0.441	1.1	0.427	0.244	0.687
238U	0.001	0.003	0.118	0.155	0.090	0.044	0.082

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FOBKS_INV- 03_2022-06- 13_N	RG_FOBKS_INV- 04_2022-06- 13_N	RG_FOBKS_INV- 05_2022-06- 13_N	RG_FOUCL_INV- 01_2022-06-13_N	RG_FOUCL_INV- 02_2022-06- 13_N
Client ID							
Lab ID			352	353	354	355	356
Wet Weight (g)			0.1581	0.1015	0.0454	0.2603	0.1143
Dry Weight (g)			0.0468	0.0320	0.0139	0.0707	0.0202
Moisture (%)			70.4	68.5	69.4	72.8	82.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.021	0.070	1.4	0.638	1.5	2.5	2.7
11B	0.076	0.253	0.230	0.919	2.7	5.5	5.7
23Na	5.4	18	2,059	3,377	2,643	3,426	1,162
24Mg	0.112	0.373	1,116	1,504	1,443	1,961	1,786
27Al	0.086	0.287	206	783	3,202	6,069	6,948
31P	83	277	10,099	10,098	10,717	12,449	9,418
39K	3.4	11	7,789	10,477	10,549	13,538	5,098
44Ca	9.9	33	1,368	1,728	3,742	4,594	6,496
49Ti	0.001	0.003	10	49	225	418	414
51V	0.044	0.147	0.607	1.6	5.5	10	10
52Cr	0.168	0.560	6.3	10	36	56	33
55Mn	0.013	0.043	35	50	78	104	111
57Fe	1.3	4.3	393	598	2,094	2,566	2,636
59Co	0.021	0.070	0.805	12	5.6	12	6.3
60Ni	0.060	0.200	9.3	19	48	80	50
63Cu	0.027	0.090	16	18	16	18	15
66Zn	0.430	1.4	165	852	428	393	373
75As	0.498	1.7	<0.498	0.880	0.981	3.2	2.0
77Se	0.480	1.6	4.6	4.5	4.7	5.2	3.9
88Sr	0.003	0.010	2.7	2.3	7.0	11	13
95Mo	0.012	0.040	0.203	0.294	0.768	0.723	0.701
107Ag	0.001	0.003	0.133	0.115	0.097	0.133	0.166
111Cd	0.157	0.523	0.661	8.7	7.0	7.9	5.3
118Sn	0.114	0.380	0.359	0.261	0.652	0.866	1.7
121Sb	0.006	0.020	0.020	0.023	0.060	0.085	0.518
137Ba	0.001	0.003	15	19	58	110	105
202Hg	0.034	0.113	<0.034	0.076	0.056	0.056	0.056
205Tl	0.001	0.003	0.024	0.071	0.072	0.111	0.097
208Pb	0.001	0.003	0.142	0.225	0.673	1.3	1.4
238U	0.001	0.003	0.012	0.052	0.089	0.159	0.157

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FOUCL_INV-	RG_SCOUTDS_IN	RG_SCOUTDS_IN	RG_SCOUTDS_IN	RG_SCOUTDS_IN
Client ID			03_2022-06-	V-01_2022-06-	V-02_2022-06-	V-03_2022-06-	V-04_2022-06-
Lab ID			13_N	13_N	13_N	13_N	13_N
Wet Weight (g)			357	358	359	360	361
Dry Weight (g)			0.4885	0.4292	0.1256	0.1848	0.1031
Moisture (%)			0.1285	0.1180	0.0224	0.0490	0.0190
			73.7	72.5	82.2	73.5	81.6
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.021	0.070	0.315	0.940	2.7	1.5	1.3
11B	0.076	0.253	0.755	0.952	6.1	2.8	3.6
23Na	5.4	18	1,597	3,743	2,413	3,539	1,911
24Mg	0.112	0.373	1,357	1,151	2,213	1,498	1,282
27Al	0.086	0.287	449	1,014	6,310	3,242	2,982
31P	83	277	11,348	10,885	13,180	12,230	9,825
39K	3.4	11	5,259	11,633	10,493	13,344	7,619
44Ca	9.9	33	3,566	2,076	6,465	2,994	3,105
49Ti	0.001	0.003	35	41	257	127	133
51V	0.044	0.147	0.803	1.8	12	5.3	5.4
52Cr	0.168	0.560	5.3	12	90	52	32
55Mn	0.013	0.043	30	49	108	49	52
57Fe	1.3	4.3	293	610	4,093	1,672	1,441
59Co	0.021	0.070	2.0	3.5	8.6	10	3.0
60Ni	0.060	0.200	7.4	18	117	65	48
63Cu	0.027	0.090	11	21	22	16	16
66Zn	0.430	1.4	221	413	383	430	269
75As	0.498	1.7	0.728	0.508	1.2	1.1	0.711
77Se	0.480	1.6	2.7	6.3	6.2	5.7	4.2
88Sr	0.003	0.010	4.5	3.9	11	6.2	5.7
95Mo	0.012	0.040	0.203	0.486	0.938	0.373	0.576
107Ag	0.001	0.003	0.067	0.115	0.188	0.145	0.121
111Cd	0.157	0.523	1.1	2.7	4.6	7.9	3.6
118Sn	0.114	0.380	0.235	0.504	1.6	0.939	1.7
121Sb	0.006	0.020	0.050	0.037	0.127	0.045	0.047
137Ba	0.001	0.003	19	36	102	53	52
202Hg	0.034	0.113	<0.034	<0.034	0.039	0.062	0.045
205Tl	0.001	0.003	0.023	0.041	0.116	0.071	0.062
208Pb	0.001	0.003	0.174	0.278	1.8	0.603	0.612
238U	0.001	0.003	0.021	0.032	0.206	0.081	0.094

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_SCOUTDS_IN	RG_FODHE_INV-	RG_FODHE_INV-	RG_FODHE_INV-	RG_FOUSH_INV-
Client ID			V-05_2022-06-	01_2022-06-13_N	02_2022-06-	03_2022-06-	01_2022-06-13_N
Lab ID			13_N	363	13_N	13_N	366
Wet Weight (g)			0.1201	0.0810	0.5688	0.3827	0.1983
Dry Weight (g)			0.0311	0.0184	0.1280	0.0663	0.0561
Moisture (%)			74.1	77.3	77.5	82.7	71.7
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.021	0.070	0.652	1.2	0.569	0.423	1.9
11B	0.076	0.253	0.657	5.7	14	4.1	5.0
23Na	5.4	18	3,140	2,645	3,688	2,144	4,305
24Mg	0.112	0.373	1,552	1,558	1,495	1,806	2,508
27Al	0.086	0.287	513	4,101	538	679	3,996
31P	83	277	14,329	12,181	10,793	12,530	14,566
39K	3.4	11	13,482	10,672	10,434	7,901	16,234
44Ca	9.9	33	2,945	4,171	2,285	4,933	5,512
49Ti	0.001	0.003	32	275	43	51	379
51V	0.044	0.147	0.956	8.2	1.2	1.4	9.2
52Cr	0.168	0.560	11	132	8.0	7.4	81
55Mn	0.013	0.043	34	100	32	49	184
57Fe	1.3	4.3	390	3,229	351	459	3,320
59Co	0.021	0.070	3.0	7.2	1.1	1.1	17
60Ni	0.060	0.200	18	158	11	10	138
63Cu	0.027	0.090	15	16	23	21	26
66Zn	0.430	1.4	320	330	297	330	654
75As	0.498	1.7	0.541	2.4	1.4	1.2	2.5
77Se	0.480	1.6	4.6	5.5	6.1	4.8	9.2
88Sr	0.003	0.010	3.8	14	3.6	8.6	11
95Mo	0.012	0.040	0.249	0.927	0.319	0.435	1.4
107Ag	0.001	0.003	0.103	0.315	0.173	0.187	0.151
111Cd	0.157	0.523	3.8	6.1	3.7	2.3	11
118Sn	0.114	0.380	0.954	1.6	0.342	1.2	1.2
121Sb	0.006	0.020	0.014	0.085	0.049	0.271	0.128
137Ba	0.001	0.003	24	101	19	58	90
202Hg	0.034	0.113	0.039	0.073	0.050	0.063	0.050
205Tl	0.001	0.003	0.038	0.069	0.034	0.029	0.136
208Pb	0.001	0.003	0.210	0.658	0.180	0.350	1.2
238U	0.001	0.003	0.025	0.158	0.048	0.044	0.149

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FOUSH_INV- 02_2022-06- 13_N	RG_FOUSH_INV- 03_2022-06- 13_N	RG_MP1_INV- 01_2022-06-13_N	RG_MP1_INV- 02_2022-06- 13_N	RG_MP1_INV- 03_2022-06- 13_N
Client ID							
Lab ID			367	368	369	370	371
Wet Weight (g)			0.0974	0.1658	0.1613	0.3909	0.3281
Dry Weight (g)			0.0260	0.0441	0.0431	0.0928	0.0748
Moisture (%)			73.3	73.4	73.3	76.3	77.2
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.021	0.070	2.2	1.5	1.1	0.617	1.0
11B	0.076	0.253	3.6	3.6	2.5	1.1	3.1
23Na	5.4	18	4,355	3,041	3,975	3,228	1,902
24Mg	0.112	0.373	1,758	2,285	1,859	1,729	1,610
27Al	0.086	0.287	1,381	2,454	761	557	2,456
31P	83	277	15,052	14,993	14,260	13,567	9,419
39K	3.4	11	14,960	13,517	14,627	9,938	7,155
44Ca	9.9	33	3,258	4,917	3,670	3,112	2,899
49Ti	0.001	0.003	114	235	157	45	232
51V	0.044	0.147	3.6	5.8	3.4	1.1	5.2
52Cr	0.168	0.560	57	39	38	8.8	32
55Mn	0.013	0.043	67	88	72	58	79
57Fe	1.3	4.3	1,539	1,817	1,306	440	1,196
59Co	0.021	0.070	4.1	11	11	13	14
60Ni	0.060	0.200	90	66	61	28	57
63Cu	0.027	0.090	21	23	20	27	17
66Zn	0.430	1.4	243	439	409	443	549
75As	0.498	1.7	0.584	1.6	1.1	1.0	1.4
77Se	0.480	1.6	6.3	6.4	5.8	6.5	5.1
88Sr	0.003	0.010	7.2	8.3	5.4	4.5	5.5
95Mo	0.012	0.040	0.522	0.696	0.841	0.348	0.522
107Ag	0.001	0.003	0.151	0.166	0.122	0.144	0.101
111Cd	0.157	0.523	2.1	6.9	6.4	4.3	8.7
118Sn	0.114	0.380	0.976	1.6	0.881	0.380	0.827
121Sb	0.006	0.020	0.065	0.088	0.071	0.035	0.143
137Ba	0.001	0.003	83	65	41	27	57
202Hg	0.034	0.113	0.044	0.050	0.053	0.044	0.038
205Tl	0.001	0.003	0.057	0.089	0.067	0.060	0.085
208Pb	0.001	0.003	0.486	0.676	0.452	0.241	0.575
238U	0.001	0.003	0.065	0.094	0.069	0.055	0.100

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FODNGD_IN	RG_FODNGD_IN	RG_FODNGD_IN	RG_FO26_INV-	RG_FO26_INV-
		Client ID	V-01_2022-06-	V-02_2022-06-	V-03_2022-06-	01_2022-06-	02_2022-06-
			13_N	13_N	13_N	27_N	27_N
		Lab ID	372	373	374	375	376
		Wet Weight (g)	0.6593	0.5625	0.6774	0.9770	0.7564
		Dry Weight (g)	0.1820	0.1403	0.1570	0.2695	0.1684
		Moisture (%)	72.4	75.1	76.8	72.4	77.7
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.021	0.070	0.514	1.7	0.522	0.166	0.379
11B	0.076	0.253	0.495	3.2	0.660	0.330	1.3
23Na	5.4	18	2,648	3,376	3,118	3,886	3,093
24Mg	0.112	0.373	1,354	2,482	1,475	1,504	1,372
27Al	0.086	0.287	307	2,368	431	237	834
31P	83	277	11,164	14,466	10,869	14,513	10,442
39K	3.4	11	8,427	15,368	8,572	12,397	10,298
44Ca	9.9	33	2,056	4,641	2,513	3,414	1,669
49Ti	0.001	0.003	16	187	29	14	63
51V	0.044	0.147	0.638	5.0	0.754	0.394	1.4
52Cr	0.168	0.560	3.5	8.3	4.3	3.1	5.7
55Mn	0.013	0.043	53	196	46	36	47
57Fe	1.3	4.3	232	996	289	151	452
59Co	0.021	0.070	7.6	10	9.4	0.291	1.4
60Ni	0.060	0.200	11	36	13	2.9	6.7
63Cu	0.027	0.090	15	20	16	11	11
66Zn	0.430	1.4	402	483	472	163	177
75As	0.498	1.7	1.0	1.8	1.5	0.739	1.3
77Se	0.480	1.6	5.1	9.4	6.1	2.5	3.5
88Sr	0.003	0.010	2.4	8.5	3.6	4.9	2.7
95Mo	0.012	0.040	0.232	0.899	0.377	0.319	0.290
107Ag	0.001	0.003	0.065	0.137	0.108	0.072	0.072
111Cd	0.157	0.523	6.4	6.7	6.7	0.468	1.7
118Sn	0.114	0.380	0.367	0.642	0.237	<0.114	0.158
121Sb	0.006	0.020	0.022	0.082	0.025	0.012	0.020
137Ba	0.001	0.003	14	279	21	34	34
202Hg	0.034	0.113	<0.034	0.044	0.075	0.044	0.050
205Tl	0.001	0.003	0.046	0.094	0.054	0.017	0.042
208Pb	0.001	0.003	0.163	0.847	0.212	0.140	0.256
238U	0.001	0.003	0.044	0.235	0.049	0.013	0.041

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FO26_INV- 03_2022-06- 27_N 377	RG_FOUKI_INV- 01_2022-06- 27_N 378	RG_FOUKI_INV- 02_2022-06- 27_N 379	RG_FOUKI_INV- 03_2022-06- 27_N 380	RG_FOUKI_INV- 04_2022-06- 27_N 381
			Client ID	Client ID	Client ID	Client ID	Client ID
			Lab ID	Lab ID	Lab ID	Lab ID	Lab ID
			Wet Weight (g)	Wet Weight (g)	Wet Weight (g)	Wet Weight (g)	Wet Weight (g)
			Dry Weight (g)	Dry Weight (g)	Dry Weight (g)	Dry Weight (g)	Dry Weight (g)
			Moisture (%)	Moisture (%)	Moisture (%)	Moisture (%)	Moisture (%)
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.021	0.070	0.308	0.862	0.894	1.3	1.6
11B	0.076	0.253	0.454	0.371	0.867	0.867	1.5
23Na	5.4	18	3,688	3,407	3,240	3,941	4,941
24Mg	0.112	0.373	1,160	1,271	1,480	1,861	1,853
27Al	0.086	0.287	427	252	779	697	1,341
31P	83	277	13,586	10,756	9,768	13,611	14,061
39K	3.4	11	11,491	10,601	10,089	12,589	12,329
44Ca	9.9	33	1,195	1,654	1,896	3,485	2,380
49Ti	0.001	0.003	27	12	56	57	118
51V	0.044	0.147	0.741	0.497	1.5	1.5	2.6
52Cr	0.168	0.560	4.1	2.1	4.2	4.7	5.9
55Mn	0.013	0.043	46	34	66	67	119
57Fe	1.3	4.3	242	167	428	399	773
59Co	0.021	0.070	0.523	1.2	17	3.4	17
60Ni	0.060	0.200	4.7	4.2	17	12	20
63Cu	0.027	0.090	11	9.1	18	18	23
66Zn	0.430	1.4	160	187	599	244	609
75As	0.498	1.7	0.759	<0.498	0.895	0.525	1.0
77Se	0.480	1.6	3.0	6.5	6.3	5.8	7.6
88Sr	0.003	0.010	2.4	2.3	2.7	4.9	4.6
95Mo	0.012	0.040	0.290	0.261	0.290	0.334	0.466
107Ag	0.001	0.003	0.072	0.043	0.094	0.173	0.151
111Cd	0.157	0.523	0.869	0.836	9.5	2.3	9.3
118Sn	0.114	0.380	0.189	<0.114	0.340	0.354	<0.114
121Sb	0.006	0.020	0.014	0.015	0.029	0.040	0.072
137Ba	0.001	0.003	38	18	27	34	63
202Hg	0.034	0.113	0.044	<0.034	0.060	0.053	0.058
205Tl	0.001	0.003	0.026	0.036	0.090	0.052	0.077
208Pb	0.001	0.003	0.163	0.119	0.215	0.219	0.489
238U	0.001	0.003	0.021	0.014	0.062	0.035	0.099

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FOUKI_INV-	RG_FOBSC_INV-	RG_FOBSC_INV-	RG_FOBSC_INV-	RG_FOBSC_INV-
Client ID			05_2022-06-	01_2022-06-	02_2022-06-	03_2022-06-	04_2022-06-
Lab ID			27_N	28_N	28_N	28_N	28_N
Wet Weight (g)			382	383	384	385	386
Dry Weight (g)			1.0375	0.7345	0.7440	0.7072	0.5383
Moisture (%)			0.2597	0.1611	0.1986	0.1557	0.1175
			75.0	78.1	73.3	78.0	78.2
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.021	0.070	1.4	0.887	1.0	0.895	1.1
11B	0.076	0.253	0.605	1.3	1.8	1.0	1.9
23Na	5.4	18	4,739	4,054	3,767	4,021	4,577
24Mg	0.112	0.373	1,543	1,708	1,796	1,699	1,735
27Al	0.086	0.287	510	880	984	694	1,108
31P	83	277	10,886	13,343	13,342	13,195	12,418
39K	3.4	11	10,550	14,612	12,797	13,234	13,936
44Ca	9.9	33	2,272	3,146	3,203	3,522	3,350
49Ti	0.001	0.003	33	87	118	50	127
51V	0.044	0.147	0.910	1.8	2.3	1.3	2.8
52Cr	0.168	0.560	4.5	5.3	6.0	4.2	5.2
55Mn	0.013	0.043	56	78	90	73	103
57Fe	1.3	4.3	398	522	704	482	676
59Co	0.021	0.070	12	9.9	12	9.4	15
60Ni	0.060	0.200	13	21	21	18	26
63Cu	0.027	0.090	20	21	24	23	21
66Zn	0.430	1.4	439	427	542	459	523
75As	0.498	1.7	0.788	1.5	1.1	1.5	2.1
77Se	0.480	1.6	6.2	6.2	7.2	6.9	7.7
88Sr	0.003	0.010	2.9	4.1	4.0	3.9	4.8
95Mo	0.012	0.040	0.311	0.435	0.466	0.311	0.497
107Ag	0.001	0.003	0.126	0.168	0.160	0.151	0.134
111Cd	0.157	0.523	8.6	9.0	12	12	13
118Sn	0.114	0.380	0.164	0.721	0.277	0.521	0.548
121Sb	0.006	0.020	0.034	0.045	0.053	0.033	0.051
137Ba	0.001	0.003	19	25	32	19	32
202Hg	0.034	0.113	0.058	0.073	0.058	0.065	0.069
205Tl	0.001	0.003	0.058	0.058	0.080	0.071	0.091
208Pb	0.001	0.003	0.186	0.293	0.366	0.267	0.378
238U	0.001	0.003	0.045	0.067	0.078	0.053	0.085

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FOBSC_INV-	RG_FRSCH2_INV-	RG_FRSCH2_INV-	RG_FRSCH2_INV-	RG_FRSCH2_INV-
		Client ID	05_2022-06-	01_2022-06-	02_2022-06-	03_2022-06-	04_2022-06-
			28_N	28_N	28_N	28_N	28_N
		Lab ID	387	388	389	390	391
		Wet Weight (g)	0.6535	0.8786	0.7201	0.6684	0.5541
		Dry Weight (g)	0.1487	0.2130	0.1668	0.1559	0.1411
		Moisture (%)	77.2	75.8	76.8	76.7	74.5
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.021	0.070	1.1	0.761	1.2	0.748	1.1
11B	0.076	0.253	1.5	0.628	3.3	1.4	2.0
23Na	5.4	18	4,231	2,942	2,613	2,785	3,333
24Mg	0.112	0.373	1,848	1,974	1,864	1,891	1,980
27Al	0.086	0.287	1,346	251	2,370	631	1,469
31P	83	277	13,077	11,879	9,257	10,529	12,070
39K	3.4	11	13,169	11,870	10,789	13,048	12,087
44Ca	9.9	33	3,436	1,874	3,403	3,128	2,639
49Ti	0.001	0.003	101	16	215	45	109
51V	0.044	0.147	2.2	0.499	4.3	1.2	2.8
52Cr	0.168	0.560	6.1	3.2	8.9	3.4	5.2
55Mn	0.013	0.043	87	189	237	220	137
57Fe	1.3	4.3	683	231	971	376	713
59Co	0.021	0.070	13	3.2	9.7	4.2	18
60Ni	0.060	0.200	26	11	23	17	27
63Cu	0.027	0.090	23	15	16	20	23
66Zn	0.430	1.4	589	324	461	400	622
75As	0.498	1.7	1.3	0.526	1.1	0.657	1.2
77Se	0.480	1.6	7.4	7.7	6.2	8.3	7.0
88Sr	0.003	0.010	4.0	2.3	5.9	3.7	3.9
95Mo	0.012	0.040	0.466	0.870	0.715	0.777	0.497
107Ag	0.001	0.003	0.160	0.084	0.084	0.126	0.134
111Cd	0.157	0.523	13	5.0	6.6	5.6	9.6
118Sn	0.114	0.380	0.498	0.287	0.154	0.448	0.223
121Sb	0.006	0.020	0.046	0.036	0.095	0.062	0.060
137Ba	0.001	0.003	31	15	58	41	35
202Hg	0.034	0.113	0.073	0.036	0.058	0.058	0.036
205Tl	0.001	0.003	0.105	0.031	0.063	0.038	0.068
208Pb	0.001	0.003	0.301	0.103	0.485	0.317	0.278
238U	0.001	0.003	0.108	0.040	0.137	0.134	0.101

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FRSCH2_INV-	RG_FRGHSC_INV	RG_FRGHSC_INV	RG_FRGHSC_INV	RG_FRGHSC_INV
		Client ID	05_2022-06-	_01_2022-06-	_02_2022-06-	_03_2022-06-	_04_2022-06-
			28_N	29_N	29_N	29_N	29_N
		Lab ID	392	393	394	395	396
		Wet Weight (g)	0.6311	1.0885	0.7934	0.9428	0.6920
		Dry Weight (g)	0.1641	0.2492	0.1977	0.2180	0.1495
		Moisture (%)	74.0	77.1	75.1	76.9	78.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.021	0.070	0.969	2.7	2.7	1.6	1.6
11B	0.076	0.253	2.0	10	7.5	4.7	5.8
23Na	5.4	18	3,797	2,881	2,660	2,260	2,946
24Mg	0.112	0.373	1,823	2,005	1,996	1,451	1,726
27Al	0.086	0.287	917	5,087	4,225	1,511	2,689
31P	83	277	13,494	11,441	12,099	10,158	11,418
39K	3.4	11	12,169	17,599	16,518	13,192	16,338
44Ca	9.9	33	2,904	8,003	4,885	4,430	3,954
49Ti	0.001	0.003	77	529	348	110	211
51V	0.044	0.147	1.8	9.6	7.8	3.7	4.4
52Cr	0.168	0.560	4.9	14	18	13	7.5
55Mn	0.013	0.043	148	142	127	112	95
57Fe	1.3	4.3	618	2,464	1,816	1,062	1,089
59Co	0.021	0.070	9.3	1.6	1.8	1.6	0.997
60Ni	0.060	0.200	24	22	24	17	11
63Cu	0.027	0.090	21	14	16	15	15
66Zn	0.430	1.4	467	165	175	169	160
75As	0.498	1.7	0.963	2.4	1.8	2.0	1.3
77Se	0.480	1.6	7.9	18	16	19	9.5
88Sr	0.003	0.010	5.1	13	8.6	6.0	5.3
95Mo	0.012	0.040	0.621	0.870	0.559	0.466	0.373
107Ag	0.001	0.003	0.076	0.084	0.092	0.084	0.076
111Cd	0.157	0.523	7.2	5.8	5.1	6.1	3.8
118Sn	0.114	0.380	0.173	0.582	0.728	0.580	0.462
121Sb	0.006	0.020	0.057	0.268	0.166	0.120	0.102
137Ba	0.001	0.003	48	247	176	143	114
202Hg	0.034	0.113	0.051	0.058	<0.034	0.044	<0.034
205Tl	0.001	0.003	0.054	0.078	0.066	0.035	0.042
208Pb	0.001	0.003	0.283	1.3	0.967	0.611	0.621
238U	0.001	0.003	0.114	0.511	0.496	0.411	0.308

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FRGHSC_INV _05_2022-06- 29_N 397	RG_FRGHSC_INV OLI-01_2022-06- 29_N 398	RG_FRGHSC_INV OLI-02_2022-06- 29_N 399	RG_FOBCP_INV_ 01_2022-06- 29_N 400	RG_FOBCP_INV_ 02_2022-06- 29_N 401
	Client ID						
	Lab ID						
	Wet Weight (g)		0.5451	0.1323	0.1575	0.4438	0.4895
	Dry Weight (g)		0.1296	0.0501	0.0584	0.0999	0.1314
	Moisture (%)		76.2	62.1	62.9	77.5	73.2
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.021	0.070	1.1	7.2	10	1.4	0.794
11B	0.076	0.253	3.1	22	28	2.9	1.1
23Na	5.4	18	2,652	2,002	2,871	3,937	2,852
24Mg	0.112	0.373	1,599	2,403	3,284	2,344	1,937
27Al	0.086	0.287	2,351	19,542	24,238	1,910	896
31P	83	277	12,007	8,682	12,922	16,809	14,194
39K	3.4	11	11,442	13,190	17,920	14,459	13,396
44Ca	9.9	33	2,970	4,426	9,184	4,930	2,958
49Ti	0.001	0.003	213	1,989	2,760	99	79
51V	0.044	0.147	4.2	38	42	3.9	1.7
52Cr	0.168	0.560	15	62	135	12	6.4
55Mn	0.013	0.043	54	89	159	98	77
57Fe	1.3	4.3	1,196	7,352	10,883	1,129	543
59Co	0.021	0.070	1.0	5.5	12	11	8.0
60Ni	0.060	0.200	20	83	200	33	18
63Cu	0.027	0.090	15	12	20	26	17
66Zn	0.430	1.4	147	184	215	577	544
75As	0.498	1.7	1.1	6.9	10	1.2	1.0
77Se	0.480	1.6	15	68	79	8.2	8.7
88Sr	0.003	0.010	5.3	19	30	6.9	5.1
95Mo	0.012	0.040	0.466	0.901	2.5	0.733	0.549
107Ag	0.001	0.003	0.084	0.101	0.205	0.178	0.108
111Cd	0.157	0.523	4.4	18	19	13	9.0
118Sn	0.114	0.380	0.510	1.2	1.9	1.1	0.407
121Sb	0.006	0.020	0.084	0.501	0.435	0.047	0.026
137Ba	0.001	0.003	101	304	592	55	39
202Hg	0.034	0.113	0.036	0.080	0.125	0.093	0.056
205Tl	0.001	0.003	0.039	0.232	0.380	0.075	0.053
208Pb	0.001	0.003	0.536	3.7	6.2	0.488	0.289
238U	0.001	0.003	0.171	0.944	1.2	0.086	0.086

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Teck Coal Limited
Tissue Analysis Results

			RG_FOBCP_INV_	RG_FOBCP_INV_	RG_FOBCP_INV_	RG_FRUPO_INV_	RG_FRUPO_INV_
Client ID			03_2022-06-	04_2022-06-	05_2022-06-	01_2022-06-	02_2022-06-
Lab ID			29_N	29_N	29_N	29_N	29_N
Wet Weight (g)			402	403	404	405	406
Dry Weight (g)			0.4116	0.4503	0.4282	1.4600	0.5731
Moisture (%)			0.0975	0.1131	0.1166	0.4234	0.1208
			76.3	74.9	72.8	71.0	78.9
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.021	0.070	1.1	1.1	0.761	1.4	1.2
11B	0.076	0.253	1.4	1.6	1.1	1.5	2.3
23Na	5.4	18	3,957	4,570	3,763	4,164	3,174
24Mg	0.112	0.373	1,758	2,590	1,958	1,593	1,750
27Al	0.086	0.287	1,333	1,445	840	1,033	1,678
31P	83	277	13,502	15,029	14,055	13,690	11,427
39K	3.4	11	12,611	14,367	15,239	13,455	12,124
44Ca	9.9	33	3,520	3,755	2,568	4,058	3,484
49Ti	0.001	0.003	93	118	58	73	124
51V	0.044	0.147	2.7	2.9	1.8	2.3	3.3
52Cr	0.168	0.560	13	7.6	9.7	7.8	11
55Mn	0.013	0.043	104	104	108	112	79
57Fe	1.3	4.3	857	819	548	571	871
59Co	0.021	0.070	11	17	5.7	3.4	9.4
60Ni	0.060	0.200	34	24	22	19	28
63Cu	0.027	0.090	24	25	22	22	22
66Zn	0.430	1.4	537	683	386	224	561
75As	0.498	1.7	1.1	0.987	0.883	0.727	1.2
77Se	0.480	1.6	6.8	7.1	8.2	7.3	7.5
88Sr	0.003	0.010	5.4	4.6	4.5	5.3	5.2
95Mo	0.012	0.040	0.687	0.458	0.733	0.778	0.687
107Ag	0.001	0.003	0.130	0.184	0.130	0.130	0.097
111Cd	0.157	0.523	12	11	8.3	2.0	13
118Sn	0.114	0.380	0.821	0.643	1.1	0.186	0.910
121Sb	0.006	0.020	0.046	0.039	0.031	0.042	0.043
137Ba	0.001	0.003	35	33	43	38	40
202Hg	0.034	0.113	0.056	0.084	0.056	0.046	0.065
205Tl	0.001	0.003	0.061	0.094	0.051	0.035	0.058
208Pb	0.001	0.003	0.330	0.402	0.243	0.336	0.418
238U	0.001	0.003	0.086	0.094	0.068	0.067	0.112

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FRUPO_INV_	RG_FRUPO_INV_	RG_FRUPO_INV_	RG_FRCP1SW_IN	RG_FRCP1SW_IN
Client ID			03_2022-06-	04_2022-06-	05_2022-06-	V-01_2022-06-	V-02_2022-06-
Lab ID			29_N	29_N	29_N	28_N	28_N
Wet Weight (g)			407	408	409	410	411
Dry Weight (g)			0.5614	0.6322	0.6875	0.8264	0.6004
Moisture (%)			0.1365	0.1569	0.1432	0.1885	0.1632
			75.7	75.2	79.2	77.2	72.8
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.021	0.070	1.0	0.712	0.965	0.816	1.7
11B	0.076	0.253	1.7	0.693	1.3	0.667	2.0
23Na	5.4	18	3,648	2,805	4,065	3,285	3,596
24Mg	0.112	0.373	1,707	1,209	1,740	1,554	1,926
27Al	0.086	0.287	1,326	456	1,025	601	2,004
31P	83	277	13,170	9,847	13,141	11,187	12,942
39K	3.4	11	12,660	8,860	12,359	10,309	14,686
44Ca	9.9	33	3,774	3,337	3,155	2,724	3,765
49Ti	0.001	0.003	144	44	85	46	112
51V	0.044	0.147	2.6	0.902	1.9	1.3	5.7
52Cr	0.168	0.560	10	4.8	6.8	7.5	24
55Mn	0.013	0.043	90	35	61	66	91
57Fe	1.3	4.3	759	276	551	447	1,468
59Co	0.021	0.070	9.8	4.0	9.1	7.8	4.8
60Ni	0.060	0.200	23	11	22	18	61
63Cu	0.027	0.090	22	14	25	18	18
66Zn	0.430	1.4	543	297	589	494	252
75As	0.498	1.7	0.935	0.571	1.0	<0.498	1.5
77Se	0.480	1.6	6.8	4.0	6.8	4.6	8.5
88Sr	0.003	0.010	5.5	3.2	3.6	2.5	5.8
95Mo	0.012	0.040	0.549	0.366	0.504	0.412	0.595
107Ag	0.001	0.003	0.162	0.076	0.146	0.119	0.173
111Cd	0.157	0.523	10	5.4	14	6.6	6.7
118Sn	0.114	0.380	0.556	0.363	0.873	0.314	0.578
121Sb	0.006	0.020	0.040	0.018	0.033	0.026	0.088
137Ba	0.001	0.003	43	15	24	16	51
202Hg	0.034	0.113	0.065	<0.034	0.065	0.102	0.088
205Tl	0.001	0.003	0.059	0.024	0.061	0.067	<0.001
208Pb	0.001	0.003	0.387	0.140	0.282	0.219	<0.001
238U	0.001	0.003	0.075	0.026	0.107	0.046	<0.001

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Teck Coal Limited
Tissue Analysis Results

			RG_FRCP1SW_IN	RG_FRCP1SW_IN	RG_FRCP1SW_IN	RG_FODPO_INV-	RG_FODPO_INV-
Client ID			V-03_2022-06-	V-04_2022-06-	V-05_2022-06-	01_2022-06-	02_2022-06-
			28_N	28_N	28_N	28_N	28_N
Lab ID			412	413	414	415	416
Wet Weight (g)			0.4714	0.5817	0.6930	0.5921	0.7755
Dry Weight (g)			0.1159	0.1370	0.1767	0.1419	0.1789
Moisture (%)			75.4	76.4	74.5	76.0	76.9
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.021	0.070	0.927	0.552	1.1	0.927	1.1
11B	0.076	0.253	0.693	0.267	0.320	1.9	1.2
23Na	5.4	18	3,812	3,660	3,733	2,800	3,292
24Mg	0.112	0.373	2,051	1,561	1,243	2,153	2,828
27Al	0.086	0.287	524	236	282	662	467
31P	83	277	14,678	13,031	12,977	11,600	11,832
39K	3.4	11	12,441	11,281	11,172	13,619	18,092
44Ca	9.9	33	5,089	2,602	2,200	3,560	2,352
49Ti	0.001	0.003	42	11	15	38	38
51V	0.044	0.147	1.1	0.476	0.553	1.3	0.985
52Cr	0.168	0.560	5.6	3.6	2.9	5.4	5.2
55Mn	0.013	0.043	63	33	27	194	383
57Fe	1.3	4.3	406	195	225	467	506
59Co	0.021	0.070	6.9	2.4	0.846	6.9	5.4
60Ni	0.060	0.200	19	8.9	7.0	24	23
63Cu	0.027	0.090	26	16	15	19	20
66Zn	0.430	1.4	432	283	163	335	339
75As	0.498	1.7	0.727	<0.498	<0.498	0.883	0.642
77Se	0.480	1.6	6.0	4.9	5.7	9.2	12
88Sr	0.003	0.010	4.0	2.7	1.9	5.6	3.8
95Mo	0.012	0.040	0.458	0.275	0.321	1.0	1.9
107Ag	0.001	0.003	0.140	0.130	0.086	0.097	0.140
111Cd	0.157	0.523	6.5	2.7	1.3	7.3	2.1
118Sn	0.114	0.380	0.422	0.192	0.362	0.346	0.241
121Sb	0.006	0.020	0.030	0.010	0.023	0.042	0.074
137Ba	0.001	0.003	17	20	9.8	40	43
202Hg	0.034	0.113	0.084	0.065	<0.034	0.056	<0.034
205Tl	0.001	0.003	0.070	0.035	0.020	0.038	0.070
208Pb	0.001	0.003	0.219	0.088	0.111	0.301	0.242
238U	0.001	0.003	0.080	0.030	0.028	0.116	0.111

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FODPO_INV-	RG_FODPO_INV-	RG_FODPO_INV-	RG_UFR1_INV-	RG_UFR1_INV-
Client ID			03_2022-06-	04_2022-06-	05_2022-06-	01_2022-06-	02_2022-06-
			28_N	28_N	28_N	27_N	27_N
Lab ID			417	418	419	420	421
Wet Weight (g)			0.4628	0.6940	0.4757	0.9817	1.5488
Dry Weight (g)			0.1095	0.1804	0.1261	0.2553	0.3753
Moisture (%)			76.3	74.0	73.5	74.0	75.8
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.021	0.070	2.1	1.7	2.3	0.207	0.246
11B	0.076	0.253	2.5	3.1	4.5	0.672	0.392
23Na	5.4	18	4,145	3,031	3,005	3,094	2,915
24Mg	0.112	0.373	2,776	2,508	2,030	2,295	1,620
27Al	0.086	0.287	1,738	2,463	3,982	418	355
31P	83	277	14,514	11,738	10,767	13,401	12,465
39K	3.4	11	20,612	16,646	14,405	10,756	10,336
44Ca	9.9	33	3,287	2,997	3,866	4,065	2,424
49Ti	0.001	0.003	176	305	368	24	23
51V	0.044	0.147	3.6	4.6	8.4	0.749	0.687
52Cr	0.168	0.560	20	24	80	3.1	4.4
55Mn	0.013	0.043	318	387	211	36	36
57Fe	1.3	4.3	1,022	1,434	3,201	240	253
59Co	0.021	0.070	3.7	4.6	6.1	0.904	0.624
60Ni	0.060	0.200	49	58	118	4.8	5.5
63Cu	0.027	0.090	18	21	16	14	12
66Zn	0.430	1.4	275	326	245	228	152
75As	0.498	1.7	1.3	1.8	2.2	1.3	1.2
77Se	0.480	1.6	14	17	22	4.0	3.6
88Sr	0.003	0.010	7.9	7.5	10	6.1	4.0
95Mo	0.012	0.040	1.4	2.1	1.2	0.409	0.281
107Ag	0.001	0.003	0.140	0.151	0.130	0.130	0.076
111Cd	0.157	0.523	3.2	4.7	6.8	1.8	1.5
118Sn	0.114	0.380	0.498	0.307	0.875	0.219	0.140
121Sb	0.006	0.020	0.119	0.142	0.144	0.021	0.018
137Ba	0.001	0.003	84	96	92	36	41
202Hg	0.034	0.113	0.044	0.062	0.070	0.035	0.035
205Tl	0.001	0.003	0.154	0.149	0.185	0.031	0.033
208Pb	0.001	0.003	0.498	0.776	0.939	0.142	0.083
238U	0.001	0.003	0.144	0.266	0.190	0.025	0.017

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_UFR1_INV- 03_2022-06- 27_N	RG_UFR1_INV- 04_2022-06- 27_N	RG_UFR1_INV- 05_2022-06- 27_N
			Lab ID	422	423	424
			Wet Weight (g)	1.0725	0.9467	1.2377
			Dry Weight (g)	0.3070	0.2481	0.2897
			Moisture (%)	71.4	73.8	76.6
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.021	0.070	0.290	0.424	0.190	
11B	0.076	0.253	0.616	1.3	0.616	
23Na	5.4	18	3,338	3,417	2,631	
24Mg	0.112	0.373	1,750	2,092	2,095	
27Al	0.086	0.287	398	448	266	
31P	83	277	12,694	13,684	12,605	
39K	3.4	11	10,991	13,912	10,109	
44Ca	9.9	33	3,341	2,290	3,252	
49Ti	0.001	0.003	55	48	20	
51V	0.044	0.147	0.785	1.0	0.523	
52Cr	0.168	0.560	3.8	8.0	2.8	
55Mn	0.013	0.043	45	60	45	
57Fe	1.3	4.3	374	494	216	
59Co	0.021	0.070	1.1	1.8	0.656	
60Ni	0.060	0.200	5.2	12	4.0	
63Cu	0.027	0.090	14	15	14	
66Zn	0.430	1.4	199	208	190	
75As	0.498	1.7	1.7	2.1	1.7	
77Se	0.480	1.6	3.8	4.9	4.0	
88Sr	0.003	0.010	5.3	3.9	5.7	
95Mo	0.012	0.040	0.461	0.512	0.358	
107Ag	0.001	0.003	0.119	0.119	0.086	
111Cd	0.157	0.523	2.2	3.6	1.7	
118Sn	0.114	0.380	<0.114	0.135	0.188	
121Sb	0.006	0.020	0.032	0.049	0.024	
137Ba	0.001	0.003	45	62	43	
202Hg	0.034	0.113	0.035	0.062	0.035	
205Tl	0.001	0.003	0.031	0.056	0.031	
208Pb	0.001	0.003	0.148	0.245	0.105	
238U	0.001	0.003	0.024	0.044	0.015	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_FO22_INV-1_2022-09-09_N	RG_FO22_INV-2_2022-09-09_N	RG_FO22_INV-3_2022-09-09_N	RG_FO22_INV-4_2022-09-09_N	RG_FO22_INV-5_2022-09-09_N
			Lab ID	249	250	251	252	253
			Wet Weight (g)	0.3517	0.3160	0.3383	0.3242	0.3638
			Dry Weight (g)	0.0882	0.0727	0.0793	0.0683	0.0745
			Moisture (%)	74.9	77.0	76.6	78.9	79.5
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	5.5	5.0	1.9	2.4	1.2	
11B	0.074	0.247	7.7	8.5	3.4	3.3	2.1	
23Na	7.0	23	4,827	4,850	3,798	5,656	3,646	
24Mg	0.241	0.803	2,219	2,056	1,784	2,109	1,616	
27Al	0.091	0.303	8,400	8,087	2,922	2,719	1,736	
31P	93	310	10,969	10,386	13,823	14,607	13,082	
39K	2.6	8.7	13,568	12,094	13,070	13,655	11,404	
44Ca	7.7	26	4,305	4,750	3,636	3,581	2,951	
49Ti	0.105	0.350	666	621	211	200	137	
51V	0.039	0.130	18	14	6.2	5.4	3.2	
52Cr	0.151	0.503	66	36	23	27	34	
55Mn	0.008	0.027	124	116	172	81	54	
57Fe	0.898	3.0	4,279	3,416	2,991	1,698	1,289	
59Co	0.013	0.043	3.6	3.7	3.6	2.8	2.2	
60Ni	0.031	0.103	114	67	42	47	53	
63Cu	0.020	0.067	28	15	19	22	15	
66Zn	0.279	0.930	194	173	246	237	171	
75As	0.388	1.3	2.3	1.5	1.1	0.924	0.683	
77Se	0.469	1.6	13	8.7	11	12	9.7	
88Sr	0.001	0.003	14	11	6.8	6.2	5.2	
95Mo	0.008	0.027	2.0	0.617	0.538	0.680	0.364	
107Ag	0.001	0.003	0.241	0.144	0.112	0.115	0.108	
111Cd	0.082	0.273	3.2	2.0	2.9	2.7	1.4	
118Sn	0.016	0.053	0.982	0.620	0.525	0.635	0.502	
121Sb	0.008	0.027	0.586	0.172	0.091	0.084	0.058	
137Ba	0.001	0.003	164	152	68	73	38	
202Hg	0.033	0.110	0.124	0.057	<0.033	0.046	<0.033	
205Tl	0.001	0.003	0.111	0.105	0.053	0.049	0.030	
208Pb	0.002	0.007	3.0	2.0	0.857	0.836	0.628	
238U	0.001	0.003	0.581	0.281	0.147	0.150	0.100	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_FO26_INV-1_2022-09-16_N	RG_FO26_INV-2_2022-09-16_N	RG_FO26_INV-3_2022-09-16_N	RG_FOBCP_INV-1_2022-09-14_N	RG_FOBCP_INV-2_2022-09-14_N
			Lab ID	254	255	256	257	258
			Wet Weight (g)	1.4792	1.1365	1.1650	0.3757	0.4407
			Dry Weight (g)	0.2779	0.2702	0.2110	0.0732	0.0838
			Moisture (%)	81.2	76.2	81.9	80.5	81.0
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	0.174	0.254	0.110	1.5	1.5	
11B	0.074	0.247	1.2	2.8	1.3	2.0	2.7	
23Na	7.0	23	3,429	3,980	1,975	3,661	3,709	
24Mg	0.241	0.803	1,153	1,301	616	1,670	2,138	
27Al	0.091	0.303	148	315	109	1,434	1,608	
31P	93	310	14,446	14,017	7,672	12,778	13,060	
39K	2.6	8.7	10,564	10,695	5,287	11,750	11,690	
44Ca	7.7	26	1,058	1,749	860	4,191	3,913	
49Ti	0.105	0.350	7.3	12	6.4	95	119	
51V	0.039	0.130	0.287	0.466	0.217	2.3	2.7	
52Cr	0.151	0.503	4.8	5.2	2.9	11	9.2	
55Mn	0.008	0.027	32	36	19	94	109	
57Fe	0.898	3.0	166	230	81	868	808	
59Co	0.013	0.043	0.146	0.384	0.111	3.7	3.5	
60Ni	0.031	0.103	5.0	5.7	2.3	34	34	
63Cu	0.020	0.067	12	11	5.4	15	14	
66Zn	0.279	0.930	172	172	76	463	398	
75As	0.388	1.3	1.1	1.3	0.643	0.743	0.930	
77Se	0.469	1.6	4.4	5.0	1.8	9.8	12	
88Sr	0.001	0.003	1.6	3.1	1.3	6.7	6.0	
95Mo	0.008	0.027	0.301	0.253	0.111	0.577	0.487	
107Ag	0.001	0.003	0.050	0.040	0.014	0.094	0.082	
111Cd	0.082	0.273	0.614	0.635	0.212	5.3	5.1	
118Sn	0.016	0.053	0.183	0.178	0.098	0.941	0.816	
121Sb	0.008	0.027	0.016	0.025	0.011	0.065	0.099	
137Ba	0.001	0.003	29	29	10	41	57	
202Hg	0.033	0.110	0.039	<0.033	<0.033	0.060	0.069	
205Tl	0.001	0.003	0.009	0.013	0.006	0.050	0.072	
208Pb	0.002	0.007	0.078	0.135	0.059	0.430	0.376	
238U	0.001	0.003	0.019	0.029	0.011	0.114	0.140	

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_FOBBCP_INV-3_2022-09-14_N	RG_FOBBCP_INV-4_2022-09-15_N	RG_FOBBCP_INV-5_2022-09-15_N	RG_FOBKS_INV-1_2022-09-12_N	RG_FOBKS_INV-2_2022-09-13_N
			Lab ID	259	260	261	262	263
			Wet Weight (g)	0.2901	0.3126	0.4604	0.3398	0.2561
			Dry Weight (g)	0.0705	0.0627	0.0935	0.0654	0.0472
			Moisture (%)	75.7	79.9	79.7	80.8	81.6
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	1.1	0.835	1.2	1.3	1.8	
11B	0.074	0.247	1.2	1.1	2.6	1.3	2.1	
23Na	7.0	23	3,591	3,192	3,313	3,144	4,121	
24Mg	0.241	0.803	1,902	1,838	2,279	1,400	1,786	
27Al	0.091	0.303	771	536	1,177	648	1,111	
31P	93	310	13,406	14,397	14,556	10,987	14,243	
39K	2.6	8.7	11,069	9,687	11,866	8,648	12,169	
44Ca	7.7	26	2,714	3,146	3,555	4,650	4,182	
49Ti	0.105	0.350	69	36	74	39	66	
51V	0.039	0.130	1.8	0.801	1.9	1.1	1.7	
52Cr	0.151	0.503	7.0	4.7	6.3	4.7	9.9	
55Mn	0.008	0.027	126	80	135	145	104	
57Fe	0.898	3.0	657	417	659	386	755	
59Co	0.013	0.043	2.5	3.3	2.6	2.5	3.4	
60Ni	0.031	0.103	27	20	28	28	41	
63Cu	0.020	0.067	15	15	16	14	17	
66Zn	0.279	0.930	456	462	426	340	411	
75As	0.388	1.3	0.790	0.720	0.871	0.930	0.999	
77Se	0.469	1.6	9.5	8.8	12	11	11	
88Sr	0.001	0.003	4.2	3.8	5.2	4.4	6.0	
95Mo	0.008	0.027	0.365	0.557	0.609	0.383	0.487	
107Ag	0.001	0.003	0.080	0.060	0.084	0.096	0.147	
111Cd	0.082	0.273	5.8	6.7	5.3	5.3	7.9	
118Sn	0.016	0.053	0.606	0.596	0.596	0.653	1.4	
121Sb	0.008	0.027	0.076	0.055	0.077	0.155	0.422	
137Ba	0.001	0.003	35	28	54	29	43	
202Hg	0.033	0.110	0.069	0.047	0.053	0.073	0.081	
205Tl	0.001	0.003	0.078	0.051	0.066	0.032	0.056	
208Pb	0.002	0.007	0.185	0.171	0.303	0.211	0.357	
238U	0.001	0.003	0.071	0.065	0.108	0.089	0.102	

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Tissue Analysis Results

			Client ID	RG_FOBKS_INV-3_2022-09-13_N	RG_FOBKS_INV-4_2022-09-13_N	RG_FOBKS_INV-5_2022-09-13_N	RG_FOBSC_INV-1_2022-09-13_N	RG_FOBSC_INV-2_2022-09-13_N
			Lab ID	264	265	266	267	268
			Wet Weight (g)	0.2295	0.4668	0.5969	0.3268	0.6773
			Dry Weight (g)	0.0425	0.0989	0.1041	0.0678	0.1487
			Moisture (%)	81.5	78.8	82.6	79.3	78.0
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	1.9	1.3	4.4	1.3	0.844	
11B	0.074	0.247	2.2	0.977	1.3	1.4	0.662	
23Na	7.0	23	4,053	2,683	7,757	3,664	3,498	
24Mg	0.241	0.803	2,131	1,250	2,193	1,890	1,550	
27Al	0.091	0.303	1,922	638	805	907	733	
31P	93	310	13,762	9,816	15,482	14,548	12,158	
39K	2.6	8.7	11,758	8,098	11,996	11,441	9,187	
44Ca	7.7	26	4,282	2,895	3,983	3,064	2,344	
49Ti	0.105	0.350	83	41	50	70	63	
51V	0.039	0.130	2.8	1.1	1.4	1.5	1.2	
52Cr	0.151	0.503	13	4.0	5.1	5.7	2.8	
55Mn	0.008	0.027	129	121	106	88	41	
57Fe	0.898	3.0	915	323	527	670	340	
59Co	0.013	0.043	4.0	1.1	3.2	2.6	1.6	
60Ni	0.031	0.103	46	17	36	24	11	
63Cu	0.020	0.067	20	12	18	18	16	
66Zn	0.279	0.930	550	197	443	429	260	
75As	0.388	1.3	1.2	0.418	0.860	0.534	<0.388	
77Se	0.469	1.6	12	8.2	11	13	8.4	
88Sr	0.001	0.003	8.3	3.2	5.2	4.7	3.1	
95Mo	0.008	0.027	0.522	0.261	0.348	0.418	0.244	
107Ag	0.001	0.003	0.171	0.076	0.131	0.072	0.076	
111Cd	0.082	0.273	9.2	3.0	6.6	5.2	2.9	
118Sn	0.016	0.053	1.0	0.411	0.523	0.784	0.763	
121Sb	0.008	0.027	0.325	0.056	0.159	0.060	0.039	
137Ba	0.001	0.003	63	28	43	48	16	
202Hg	0.033	0.110	0.102	0.057	0.081	0.073	0.045	
205Tl	0.001	0.003	0.056	0.025	0.055	0.057	0.027	
208Pb	0.002	0.007	0.420	0.166	0.257	0.257	0.138	
238U	0.001	0.003	0.117	0.056	0.100	0.085	0.037	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_FOBSC_INV-3_2022-09-14_N	RG_FOBSC_INV-4_2022-09-14_N	RG_FOBSC_INV-5_2022-09-14_N	RG_FODNGD_IN V-1_2022-09-15_N	RG_FODNGD_IN V-2_2022-09-15_N
			Lab ID	269	270	271	272	273
			Wet Weight (g)	0.3182	0.6798	0.4401	0.7748	1.1221
			Dry Weight (g)	0.0592	0.1720	0.0772	0.1778	0.2106
			Moisture (%)	81.4	74.7	82.5	77.1	81.2
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	1.0	0.957	0.818	1.2	2.5	
11B	0.074	0.247	1.2	0.977	0.962	1.4	1.2	
23Na	7.0	23	3,593	2,946	3,253	3,136	5,081	
24Mg	0.241	0.803	1,778	1,400	1,578	1,262	1,790	
27Al	0.091	0.303	854	599	575	773	679	
31P	93	310	13,108	12,525	11,040	11,519	12,524	
39K	2.6	8.7	10,852	8,377	8,983	8,543	8,338	
44Ca	7.7	26	3,412	2,310	2,551	2,225	2,690	
49Ti	0.105	0.350	67	39	37	53	58	
51V	0.039	0.130	1.4	1.0	0.876	1.2	1.2	
52Cr	0.151	0.503	6.8	3.9	3.7	4.8	4.4	
55Mn	0.008	0.027	67	126	69	42	53	
57Fe	0.898	3.0	586	451	408	341	336	
59Co	0.013	0.043	3.3	2.2	1.9	2.5	2.6	
60Ni	0.031	0.103	22	17	17	15	13	
63Cu	0.020	0.067	16	14	12	13	18	
66Zn	0.279	0.930	399	361	310	185	272	
75As	0.388	1.3	0.558	0.441	0.581	0.790	0.627	
77Se	0.469	1.6	11	10	9.7	9.2	7.4	
88Sr	0.001	0.003	4.9	3.1	3.1	2.8	3.7	
95Mo	0.008	0.027	0.505	0.296	0.296	0.270	0.331	
107Ag	0.001	0.003	0.068	0.068	0.064	0.052	0.088	
111Cd	0.082	0.273	4.7	3.5	5.3	1.3	2.5	
118Sn	0.016	0.053	1.3	0.552	0.545	0.448	0.256	
121Sb	0.008	0.027	0.053	0.043	0.048	0.040	0.038	
137Ba	0.001	0.003	30	26	34	32	32	
202Hg	0.033	0.110	0.061	0.061	0.065	0.106	0.102	
205Tl	0.001	0.003	0.048	0.033	0.040	0.032	0.033	
208Pb	0.002	0.007	0.223	0.197	0.154	0.307	0.384	
238U	0.001	0.003	0.071	0.066	0.059	0.055	0.076	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FODNGD_IN	RG_FODNGD_IN	RG_FODNGD_IN	RG_FOUCL_INV-	RG_FOUCL_INV-
Client ID			V-3_2022-09-	V-4_2022-09-	V-5_2022-09-	1_2022-09-16_N	2_2022-09-16_N
Lab ID			15_N	15_N	15_N	277	278
Wet Weight (g)			0.6302	0.9210	1.1157	0.4550	0.3642
Dry Weight (g)			0.1107	0.1602	0.2332	0.0868	0.0606
Moisture (%)			82.4	82.6	79.1	80.9	83.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	7.3	1.8	1.1	1.4	6.3
11B	0.074	0.247	3.0	2.4	0.498	0.782	2.1
23Na	7.0	23	8,080	3,883	6,652	4,872	7,528
24Mg	0.241	0.803	2,141	1,856	1,448	1,291	1,922
27Al	0.091	0.303	1,440	1,490	280	411	1,456
31P	93	310	12,563	12,781	11,933	11,047	13,508
39K	2.6	8.7	11,659	10,688	11,143	9,672	12,513
44Ca	7.7	26	3,279	2,820	1,943	2,024	3,483
49Ti	0.105	0.350	112	105	15	27	107
51V	0.039	0.130	3.0	2.9	0.366	0.839	3.0
52Cr	0.151	0.503	12	7.2	3.6	4.9	21
55Mn	0.008	0.027	51	49	30	53	60
57Fe	0.898	3.0	707	644	176	234	715
59Co	0.013	0.043	4.1	3.7	1.3	0.922	4.5
60Ni	0.031	0.103	30	20	7.4	8.1	35
63Cu	0.020	0.067	26	19	14	9.7	16
66Zn	0.279	0.930	356	377	179	233	299
75As	0.388	1.3	1.3	1.0	0.526	0.760	1.1
77Se	0.469	1.6	11	9.2	7.9	10	12
88Sr	0.001	0.003	5.8	5.3	2.3	2.3	5.1
95Mo	0.008	0.027	0.403	0.376	0.188	0.295	0.376
107Ag	0.001	0.003	0.220	0.120	0.084	0.068	0.142
111Cd	0.082	0.273	5.1	3.2	2.8	2.1	5.1
118Sn	0.016	0.053	0.672	0.342	0.351	0.540	0.910
121Sb	0.008	0.027	0.079	0.070	0.026	0.030	0.064
137Ba	0.001	0.003	44	39	19	33	69
202Hg	0.033	0.110	0.119	0.106	0.080	0.085	0.085
205Tl	0.001	0.003	0.079	0.056	0.025	0.030	0.062
208Pb	0.002	0.007	0.683	0.480	0.170	0.154	0.345
238U	0.001	0.003	0.119	0.091	0.036	0.068	0.134

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_FOUCL_INV-3_2022-09-16_N	RG_FOUCL_INV-4_2022-09-16_N	RG_FOUCL_INV-5_2022-09-16_N	RG_FOUCL_INV-1_2022-09-10_N	RG_FOUCL_INV-2_2022-09-10_N
			Lab ID	279	280	281	282	283
			Wet Weight (g)	0.2872	0.3408	0.4163	0.7850	0.4916
			Dry Weight (g)	0.0504	0.0689	0.0833	0.1831	0.1173
			Moisture (%)	82.5	79.8	80.0	76.7	76.1
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	1.6	1.4	0.889	1.5	1.3	
11B	0.074	0.247	2.5	1.5	2.6	3.3	3.8	
23Na	7.0	23	3,634	2,928	3,901	3,665	3,795	
24Mg	0.241	0.803	1,703	1,520	1,741	1,841	1,770	
27Al	0.091	0.303	936	930	751	2,166	2,776	
31P	93	310	14,087	11,729	15,134	11,625	13,137	
39K	2.6	8.7	13,550	10,213	13,057	12,675	10,776	
44Ca	7.7	26	3,876	3,083	3,060	3,274	3,411	
49Ti	0.105	0.350	63	57	53	162	247	
51V	0.039	0.130	2.1	3.1	1.7	4.6	6.4	
52Cr	0.151	0.503	11	39	12	12	17	
55Mn	0.008	0.027	72	77	52	90	135	
57Fe	0.898	3.0	459	614	431	1,342	1,901	
59Co	0.013	0.043	2.5	2.9	1.1	1.7	2.2	
60Ni	0.031	0.103	23	61	20	18	32	
63Cu	0.020	0.067	17	18	17	19	15	
66Zn	0.279	0.930	359	280	266	237	229	
75As	0.388	1.3	1.4	1.1	1.1	1.4	0.877	
77Se	0.469	1.6	13	10	10	13	12	
88Sr	0.001	0.003	5.6	4.3	4.0	6.2	7.2	
95Mo	0.008	0.027	0.349	0.537	0.389	0.752	0.537	
107Ag	0.001	0.003	0.174	0.078	0.097	0.168	0.136	
111Cd	0.082	0.273	5.0	4.2	2.2	2.4	2.5	
118Sn	0.016	0.053	1.1	0.462	0.974	0.428	0.747	
121Sb	0.008	0.027	0.057	0.059	0.045	0.117	0.106	
137Ba	0.001	0.003	352	379	49	99	91	
202Hg	0.033	0.110	0.101	0.069	0.048	0.069	0.069	
205Tl	0.001	0.003	0.055	0.037	0.038	0.060	0.081	
208Pb	0.002	0.007	0.298	0.309	0.256	0.881	0.731	
238U	0.001	0.003	0.165	0.126	0.130	0.211	0.174	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_FOUUEW_INV-3_2022-09-10_N	RG_FOUUEW_INV-4_2022-09-10_N	RG_FOUUEW_INV-5_2022-09-10_N	RG_FOUKI_INV-1_2022-09-13_N	RG_FOUKI_INV-2_2022-09-13_N
			Lab ID	284	285	286	287	288
			Wet Weight (g)	0.5472	0.5184	0.3147	0.9787	1.2290
			Dry Weight (g)	0.1236	0.1057	0.0697	0.2211	0.3040
			Moisture (%)	77.4	79.6	77.9	77.4	75.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	0.774	1.3	1.2	0.915	2.7	
11B	0.074	0.247	0.942	2.3	1.7	0.640	0.178	
23Na	7.0	23	2,539	3,474	3,462	1,835	2,422	
24Mg	0.241	0.803	1,183	1,872	1,770	652	872	
27Al	0.091	0.303	674	959	844	378	79	
31P	93	310	11,070	15,286	13,858	6,369	7,107	
39K	2.6	8.7	9,362	13,405	11,542	5,507	5,202	
44Ca	7.7	26	1,569	3,964	5,306	1,294	1,029	
49Ti	0.105	0.350	42	75	62	11	3.1	
51V	0.039	0.130	1.4	1.8	1.6	0.451	0.143	
52Cr	0.151	0.503	5.2	6.4	4.7	3.0	2.5	
55Mn	0.008	0.027	64	89	85	70	59	
57Fe	0.898	3.0	434	612	547	198	77	
59Co	0.013	0.043	0.882	1.5	1.6	0.626	0.439	
60Ni	0.031	0.103	8.5	14	14	8.1	6.8	
63Cu	0.020	0.067	13	16	20	11	8.4	
66Zn	0.279	0.930	201	242	307	103	153	
75As	0.388	1.3	0.497	0.891	0.730	<0.388	<0.388	
77Se	0.469	1.6	9.0	10	11	7.9	6.5	
88Sr	0.001	0.003	2.7	5.7	7.0	1.8	0.941	
95Mo	0.008	0.027	0.403	0.564	0.510	0.242	0.134	
107Ag	0.001	0.003	0.090	0.110	0.155	0.061	0.103	
111Cd	0.082	0.273	2.4	3.8	4.0	0.975	1.1	
118Sn	0.016	0.053	0.381	0.649	0.673	0.088	0.060	
121Sb	0.008	0.027	0.040	0.041	0.054	0.049	0.028	
137Ba	0.001	0.003	27	48	49	21	5.5	
202Hg	0.033	0.110	0.058	0.050	0.080	0.037	0.048	
205Tl	0.001	0.003	0.029	0.041	0.041	0.018	0.011	
208Pb	0.002	0.007	0.248	0.341	0.338	0.123	0.035	
238U	0.001	0.003	0.046	0.098	0.099	0.028	0.008	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_FOUKI_INV-3_2022-09-13_N	RG_FOUKI_INV-4_2022-09-13_N	RG_FOUKI_INV-5_2022-09-13_N	RG_FOUNGD_IN V-1_2022-09-15_N	RG_FOUNGD_IN V-2_2022-09-15_N
			Lab ID	289	290	291	292	293
			Wet Weight (g)	0.7596	0.8790	0.5115	0.7137	1.1575
			Dry Weight (g)	0.1788	0.2288	0.0917	0.1632	0.2399
			Moisture (%)	76.5	74.0	82.1	77.1	79.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	1.7	1.6	1.3	5.2	4.0	
11B	0.074	0.247	0.640	0.569	0.604	1.7	1.4	
23Na	7.0	23	3,857	3,183	3,105	3,564	5,319	
24Mg	0.241	0.803	1,435	819	1,291	1,165	1,573	
27Al	0.091	0.303	267	219	211	1,095	645	
31P	93	310	14,291	9,118	10,685	13,775	13,274	
39K	2.6	8.7	13,131	5,890	8,939	13,234	11,399	
44Ca	7.7	26	1,982	1,955	2,398	1,941	2,599	
49Ti	0.105	0.350	16	12	14	89	45	
51V	0.039	0.130	0.602	0.430	0.502	2.0	1.2	
52Cr	0.151	0.503	3.1	3.8	2.7	4.6	4.6	
55Mn	0.008	0.027	228	127	34	45	57	
57Fe	0.898	3.0	208	216	196	457	291	
59Co	0.013	0.043	1.2	1.4	0.986	2.2	2.3	
60Ni	0.031	0.103	18	15	9.6	11	12	
63Cu	0.020	0.067	13	14	16	11	15	
66Zn	0.279	0.930	170	175	256	185	272	
75As	0.388	1.3	<0.388	<0.388	0.409	0.830	0.844	
77Se	0.469	1.6	9.3	6.4	7.9	7.1	9.8	
88Sr	0.001	0.003	2.7	2.3	2.7	3.4	4.1	
95Mo	0.008	0.027	0.269	0.322	0.295	0.245	0.178	
107Ag	0.001	0.003	0.078	0.149	0.171	0.093	0.102	
111Cd	0.082	0.273	1.3	2.1	1.7	2.4	3.0	
118Sn	0.016	0.053	0.132	0.084	0.405	0.203	0.359	
121Sb	0.008	0.027	0.038	0.046	0.067	0.049	0.034	
137Ba	0.001	0.003	20	16	17	33	32	
202Hg	0.033	0.110	0.048	0.048	0.053	0.053	0.075	
205Tl	0.001	0.003	0.020	0.023	0.019	0.043	0.033	
208Pb	0.002	0.007	0.111	0.101	0.074	0.441	0.263	
238U	0.001	0.003	0.029	0.024	0.031	0.067	0.065	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FOUNGD_IN	RG_FOUNGD_IN	RG_FOUNGD_IN	RG_FOUSH_INV-	RG_FOUSH_INV-
Client ID			V-3_2022-09-	V-4_2022-09-	V-5_2022-09-	1_2022-09-12_N	2_2022-09-12_N
Lab ID			15_N	15_N	15_N	297	298
Wet Weight (g)			0.6660	0.7389	0.8836	0.8270	1.0690
Dry Weight (g)			0.1567	0.1623	0.1523	0.1470	0.2103
Moisture (%)			76.5	78.0	82.8	82.2	80.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	2.3	2.0	4.1	2.1	3.3
11B	0.074	0.247	1.6	1.3	1.8	1.8	0.632
23Na	7.0	23	3,445	3,499	7,010	3,134	4,191
24Mg	0.241	0.803	1,014	1,277	1,688	1,645	1,330
27Al	0.091	0.303	1,056	759	1,271	1,305	248
31P	93	310	9,954	13,111	14,361	12,998	11,457
39K	2.6	8.7	8,603	11,137	13,542	9,328	8,891
44Ca	7.7	26	1,500	1,845	2,878	2,935	1,365
49Ti	0.105	0.350	109	62	88	109	15
51V	0.039	0.130	2.3	1.6	2.3	3.2	0.718
52Cr	0.151	0.503	6.3	4.4	7.0	9.9	3.6
55Mn	0.008	0.027	52	66	42	85	32
57Fe	0.898	3.0	498	410	536	1,739	559
59Co	0.013	0.043	3.0	2.4	3.8	1.3	0.413
60Ni	0.031	0.103	17	16	17	24	7.4
63Cu	0.020	0.067	14	18	21	18	15
66Zn	0.279	0.930	251	256	372	348	159
75As	0.388	1.3	0.887	0.830	1.3	0.858	0.544
77Se	0.469	1.6	9.5	10	12	10	9.6
88Sr	0.001	0.003	3.2	4.0	4.5	5.3	2.5
95Mo	0.008	0.027	0.245	0.201	0.312	0.312	0.223
107Ag	0.001	0.003	0.105	0.099	0.154	0.116	0.070
111Cd	0.082	0.273	3.2	3.0	4.4	1.8	1.2
118Sn	0.016	0.053	0.208	0.308	0.323	0.461	0.279
121Sb	0.008	0.027	0.047	0.051	0.062	0.069	0.025
137Ba	0.001	0.003	42	63	37	51	17
202Hg	0.033	0.110	0.075	0.053	0.101	0.099	0.059
205Tl	0.001	0.003	0.034	0.040	0.053	0.035	0.020
208Pb	0.002	0.007	0.334	0.375	0.350	0.459	0.100
238U	0.001	0.003	0.100	0.102	0.101	0.080	0.019

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_FOUSH_INV-3_2022-09-12_N	RG_FRSC2_INV-1_2022-09-14_N	RG_FRSC2_INV-2_2022-09-14_N	RG_FRSC2_INV-3_2022-09-14_N	RG_FRSC2_INV-4_2022-09-14_N
			Lab ID	299	300	301	302	303
			Wet Weight (g)	1.1216	0.6424	0.8834	0.5985	1.0724
			Dry Weight (g)	0.2405	0.1333	0.1884	0.1335	0.2048
			Moisture (%)	78.6	79.2	78.7	77.7	80.9
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	0.901	1.6	2.9	1.2	2.0	
11B	0.074	0.247	0.386	1.7	2.7	1.5	2.4	
23Na	7.0	23	2,785	3,352	4,126	3,462	4,932	
24Mg	0.241	0.803	1,370	1,291	1,734	1,616	1,887	
27Al	0.091	0.303	223	866	1,813	916	1,066	
31P	93	310	8,840	10,139	11,789	11,946	12,555	
39K	2.6	8.7	6,752	9,465	10,227	10,301	10,280	
44Ca	7.7	26	2,328	2,640	2,935	2,689	3,083	
49Ti	0.105	0.350	12	57	198	65	69	
51V	0.039	0.130	0.821	1.8	4.1	1.6	1.9	
52Cr	0.151	0.503	3.4	8.0	15	7.2	4.2	
55Mn	0.008	0.027	14	81	69	46	89	
57Fe	0.898	3.0	802	549	1,110	542	531	
59Co	0.013	0.043	0.744	1.4	1.6	1.7	1.7	
60Ni	0.031	0.103	8.0	17	27	16	12	
63Cu	0.020	0.067	14	16	20	18	17	
66Zn	0.279	0.930	319	186	174	209	162	
75As	0.388	1.3	0.544	0.630	0.801	0.630	0.715	
77Se	0.469	1.6	6.2	8.9	7.6	7.4	8.9	
88Sr	0.001	0.003	2.8	3.6	5.9	4.1	4.1	
95Mo	0.008	0.027	0.156	0.535	0.513	0.290	0.357	
107Ag	0.001	0.003	0.105	0.087	0.093	0.110	0.108	
111Cd	0.082	0.273	1.5	1.6	1.2	2.1	1.5	
118Sn	0.016	0.053	0.193	0.427	0.480	0.292	0.327	
121Sb	0.008	0.027	0.055	0.056	0.079	0.050	0.048	
137Ba	0.001	0.003	11	35	48	29	31	
202Hg	0.033	0.110	0.064	0.043	0.059	0.043	0.043	
205Tl	0.001	0.003	0.013	0.029	0.041	0.032	0.034	
208Pb	0.002	0.007	0.107	0.312	0.459	0.244	0.574	
238U	0.001	0.003	0.024	0.171	0.126	0.091	0.094	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_FRSCH2_INV- 5_2022-09-14_N	RG_HENUP_INV- 1_2022-09-12_N	RG_HENUP_INV- 2_2022-09-12_N	RG_HENUP_INV- 3_2022-09-12_N	RG_MP1_INV- 1_2022-09-12_N
			Lab ID	304	305	306	307	308
			Wet Weight (g)	1.1960	0.3748	0.4399	0.5928	0.7189
			Dry Weight (g)	0.2843	0.0644	0.0767	0.1208	0.1409
			Moisture (%)	76.2	82.8	82.6	79.6	80.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	0.699	0.789	0.476	0.429	3.4	
11B	0.074	0.247	0.983	1.1	0.877	0.667	0.562	
23Na	7.0	23	2,558	4,328	3,459	2,917	3,839	
24Mg	0.241	0.803	1,362	1,651	1,326	1,080	1,130	
27Al	0.091	0.303	244	313	235	244	250	
31P	93	310	10,139	13,811	12,542	10,411	9,887	
39K	2.6	8.7	5,335	10,992	11,789	8,935	5,906	
44Ca	7.7	26	2,682	3,538	3,122	2,329	1,856	
49Ti	0.105	0.350	19	23	12	16	11	
51V	0.039	0.130	0.545	0.918	0.593	0.517	0.573	
52Cr	0.151	0.503	4.0	10	4.6	4.6	3.6	
55Mn	0.008	0.027	31	19	14	11	26	
57Fe	0.898	3.0	205	381	195	196	313	
59Co	0.013	0.043	1.2	0.606	0.275	0.241	0.806	
60Ni	0.031	0.103	8.4	19	8.3	6.5	8.4	
63Cu	0.020	0.067	16	9.8	11	10	11	
66Zn	0.279	0.930	197	222	257	185	143	
75As	0.388	1.3	0.572	1.7	1.7	1.6	0.458	
77Se	0.469	1.6	7.1	8.2	7.3	5.1	7.0	
88Sr	0.001	0.003	2.7	5.6	5.7	4.2	2.1	
95Mo	0.008	0.027	0.368	0.323	0.268	0.268	0.245	
107Ag	0.001	0.003	0.154	0.070	0.058	0.052	0.041	
111Cd	0.082	0.273	0.903	0.728	0.699	0.335	1.0	
118Sn	0.016	0.053	0.288	0.311	0.687	0.279	0.139	
121Sb	0.008	0.027	0.034	0.028	0.019	0.010	0.025	
137Ba	0.001	0.003	12	12	10	8.8	16	
202Hg	0.033	0.110	0.032	0.037	0.059	0.043	0.069	
205Tl	0.001	0.003	0.017	0.054	0.032	0.022	0.020	
208Pb	0.002	0.007	0.126	0.134	0.157	0.122	0.139	
238U	0.001	0.003	0.030	0.083	0.071	0.037	0.036	

Notes:

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Teck Coal Limited
Tissue Analysis Results

		Client ID	RG_MP1_INV- 2_2022-09-12_N	RG_MP1_INV- 3_2022-09-12_N	RG_MP1_INV- 4_2022-09-12_N	RG_MP1_INV- 5_2022-09-12_N	RG_SCOUTDS_IN V-1_2022-09- 13_N
		Lab ID	309	310	311	312	313
		Wet Weight (g)	0.5054	0.7129	0.6259	0.6839	0.8509
		Dry Weight (g)	0.0806	0.1359	0.1149	0.1361	0.2956
		Moisture (%)	84.1	80.9	81.6	80.1	65.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	1.5	2.6	1.6	1.4	1.2
11B	0.074	0.247	0.965	0.408	0.761	0.780	0.445
23Na	7.0	23	2,830	5,759	3,708	2,054	3,054
24Mg	0.241	0.803	1,497	1,488	1,313	1,064	1,541
27Al	0.091	0.303	697	208	430	554	205
31P	93	310	11,503	12,499	13,157	9,439	14,640
39K	2.6	8.7	9,950	10,460	9,869	7,145	10,482
44Ca	7.7	26	2,473	2,129	1,906	2,034	2,094
49Ti	0.105	0.350	44	12	28	36	10
51V	0.039	0.130	1.5	0.500	1.0	1.4	0.469
52Cr	0.151	0.503	7.9	4.4	5.2	7.0	3.3
55Mn	0.008	0.027	30	31	32	28	117
57Fe	0.898	3.0	377	237	387	396	276
59Co	0.013	0.043	1.9	1.0	1.8	1.3	1.9
60Ni	0.031	0.103	15	7.6	13	14	13
63Cu	0.020	0.067	17	19	18	13	17
66Zn	0.279	0.930	301	227	215	180	247
75As	0.388	1.3	0.726	0.432	0.494	0.587	<0.388
77Se	0.469	1.6	8.5	12	11	8.3	9.3
88Sr	0.001	0.003	4.2	3.1	3.1	3.5	2.2
95Mo	0.008	0.027	0.302	0.281	0.309	0.225	0.365
107Ag	0.001	0.003	0.120	0.113	0.113	0.082	0.120
111Cd	0.082	0.273	3.5	3.1	2.1	1.6	1.8
118Sn	0.016	0.053	0.404	0.299	0.310	0.254	0.079
121Sb	0.008	0.027	0.030	0.021	0.034	0.030	0.024
137Ba	0.001	0.003	21	20	33	21	16
202Hg	0.033	0.110	0.085	0.067	0.082	0.091	0.049
205Tl	0.001	0.003	0.026	0.030	0.026	0.022	0.013
208Pb	0.002	0.007	0.213	0.167	0.287	0.253	0.092
238U	0.001	0.003	0.065	0.037	0.053	0.041	0.026

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_SCOUTDS_IN	RG_SCOUTDS_IN	RG_SCOUTDS_IN	RG_SCOUTDS_IN	RG_FRUPO_INV-
Client ID			V-2_2022-09-	V-3_2022-09-	V-4_2022-09-	V-5_2022-09-	1_2022-09-18_N
Lab ID			14_N	14_N	14_N	14_N	318
Wet Weight (g)			0.9771	1.1035	0.9102	0.5212	1.2276
Dry Weight (g)			0.2559	0.1964	0.1951	0.1055	0.3248
Moisture (%)			73.8	82.2	78.6	79.8	73.5
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	2.2	1.3	1.8	1.2	0.640
11B	0.074	0.247	1.7	0.594	0.742	0.854	0.445
23Na	7.0	23	4,005	4,003	4,753	2,925	3,126
24Mg	0.241	0.803	1,965	1,210	1,357	1,242	1,078
27Al	0.091	0.303	1,162	274	557	435	175
31P	93	310	16,725	8,028	11,625	10,581	12,299
39K	2.6	8.7	16,735	8,666	10,385	7,820	9,279
44Ca	7.7	26	3,656	2,046	2,080	2,623	1,518
49Ti	0.105	0.350	89	18	35	35	17
51V	0.039	0.130	2.7	0.632	1.4	1.1	0.524
52Cr	0.151	0.503	5.9	3.8	4.4	6.5	2.6
55Mn	0.008	0.027	140	40	105	37	21
57Fe	0.898	3.0	973	282	549	378	160
59Co	0.013	0.043	2.5	0.866	1.9	0.947	0.281
60Ni	0.031	0.103	20	13	17	18	2.3
63Cu	0.020	0.067	16	12	16	13	12
66Zn	0.279	0.930	343	183	192	165	146
75As	0.388	1.3	0.602	<0.388	0.417	<0.388	<0.388
77Se	0.469	1.6	10	6.2	8.8	6.7	7.1
88Sr	0.001	0.003	4.9	2.3	2.7	3.4	1.9
95Mo	0.008	0.027	0.505	0.253	0.393	0.309	0.253
107Ag	0.001	0.003	0.113	0.063	0.088	0.101	0.063
111Cd	0.082	0.273	3.2	2.8	2.8	1.7	0.628
118Sn	0.016	0.053	0.731	0.259	0.658	0.274	0.244
121Sb	0.008	0.027	0.080	0.021	0.039	0.031	0.018
137Ba	0.001	0.003	42	9.9	20	14	12
202Hg	0.033	0.110	0.079	0.052	0.055	0.043	<0.033
205Tl	0.001	0.003	0.043	0.019	0.026	0.020	0.008
208Pb	0.002	0.007	0.361	0.108	0.196	0.120	0.092
238U	0.001	0.003	0.077	0.028	0.047	0.036	0.028

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_FRUPO_INV- 2_2022-09-18_N	RG_FRUPO_INV- 3_2022-09-18_N	RG_FRUPO_INV- 4_2022-09-18_N	RG_FRUPO_INV- 5_2022-09-18_N	RG_FRGHSC_INV OLI-1_2022-09- 18_N
			Lab ID	319	320	321	322	323
			Wet Weight (g)	0.8343	0.7775	1.0800	0.7846	0.2493
			Dry Weight (g)	0.1400	0.1467	0.2223	0.1371	0.0737
			Moisture (%)	83.2	81.1	79.4	82.5	70.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	0.939	0.881	0.756	0.809	8.9	
11B	0.074	0.247	0.780	1.5	0.538	0.557	12	
23Na	7.0	23	2,781	2,356	2,447	2,801	1,993	
24Mg	0.241	0.803	1,624	1,493	1,426	1,618	2,129	
27Al	0.091	0.303	213	489	180	168	10,520	
31P	93	310	13,552	12,910	12,011	11,723	7,649	
39K	2.6	8.7	8,849	8,303	8,086	9,088	12,486	
44Ca	7.7	26	3,051	2,792	2,232	2,630	4,634	
49Ti	0.105	0.350	14	33	6.1	10	1,327	
51V	0.039	0.130	0.580	1.3	0.441	0.397	19	
52Cr	0.151	0.503	4.6	5.2	4.3	4.0	40	
55Mn	0.008	0.027	22	20	37	28	107	
57Fe	0.898	3.0	219	322	197	170	4,875	
59Co	0.013	0.043	0.422	0.366	0.344	0.503	4.0	
60Ni	0.031	0.103	5.5	6.2	4.5	3.8	53	
63Cu	0.020	0.067	15	13	16	15	9.2	
66Zn	0.279	0.930	151	133	132	219	127	
75As	0.388	1.3	<0.388	0.463	<0.388	<0.388	6.1	
77Se	0.469	1.6	6.9	6.9	7.7	8.9	70	
88Sr	0.001	0.003	2.9	2.9	2.7	3.1	23	
95Mo	0.008	0.027	0.168	0.168	0.309	0.168	0.954	
107Ag	0.001	0.003	0.063	0.063	0.082	0.076	0.107	
111Cd	0.082	0.273	1.4	1.0	1.5	1.7	9.8	
118Sn	0.016	0.053	0.561	0.284	0.172	0.368	0.929	
121Sb	0.008	0.027	0.023	0.026	0.018	0.018	0.426	
137Ba	0.001	0.003	14	21	14	19	295	
202Hg	0.033	0.110	<0.033	0.043	<0.033	0.036	0.164	
205Tl	0.001	0.003	0.009	0.012	0.008	0.007	0.229	
208Pb	0.002	0.007	0.122	0.191	0.142	0.108	3.1	
238U	0.001	0.003	0.057	0.052	0.039	0.047	0.693	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FRGHSC_CO MPOLI-1_2022- 09-18_N	RG_FRGHSC_CO MPOLI-2_2022- 09-18_N	RG_FRGHSC_INV- 3_2022-09-18_N	RG_FRGHSC_CO MPOLI-4_2022- 09-18_N	RG_FRGHSC_INV- 5_2022-09-18_N
	Client ID						
	Lab ID		324	325	326	327	328
	Wet Weight (g)		0.5506	0.5288	0.5084	0.7674	0.7122
	Dry Weight (g)		0.0948	0.0772	0.0802	0.1273	0.1500
	Moisture (%)		82.8	85.4	84.2	83.4	78.9
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	2.4	2.8	1.0	2.4	0.756
11B	0.074	0.247	5.2	6.3	4.3	7.5	1.8
23Na	7.0	23	1,859	2,166	3,107	2,807	2,957
24Mg	0.241	0.803	1,459	2,040	1,314	2,242	1,737
27Al	0.091	0.303	3,629	3,277	1,338	5,786	1,477
31P	93	310	8,377	9,585	9,435	11,341	12,391
39K	2.6	8.7	7,703	8,716	7,206	10,764	8,482
44Ca	7.7	26	5,826	7,097	5,632	5,856	3,233
49Ti	0.105	0.350	305	272	91	560	35
51V	0.039	0.130	7.7	7.1	2.5	13	1.2
52Cr	0.151	0.503	27	42	7.5	29	5.5
55Mn	0.008	0.027	43	59	30	66	56
57Fe	0.898	3.0	2,193	2,145	655	2,401	369
59Co	0.013	0.043	1.8	1.2	0.564	2.8	0.348
60Ni	0.031	0.103	40	68	12	38	6.6
63Cu	0.020	0.067	12	15	9.9	13	13
66Zn	0.279	0.930	141	151	121	153	139
75As	0.388	1.3	1.6	1.5	0.697	2.0	0.401
77Se	0.469	1.6	19	13	5.3	17	10
88Sr	0.001	0.003	8.5	9.4	4.6	12	3.9
95Mo	0.008	0.027	0.533	0.898	0.339	0.552	0.226
107Ag	0.001	0.003	0.063	0.050	0.033	0.065	0.049
111Cd	0.082	0.273	3.2	3.2	1.7	5.4	2.3
118Sn	0.016	0.053	0.624	0.754	0.780	0.905	0.246
121Sb	0.008	0.027	0.135	0.154	0.098	0.227	0.075
137Ba	0.001	0.003	123	115	68	143	75
202Hg	0.033	0.110	0.067	0.055	<0.033	0.044	<0.033
205Tl	0.001	0.003	0.049	0.049	0.032	0.116	0.022
208Pb	0.002	0.007	0.876	0.833	0.399	1.7	0.297
238U	0.001	0.003	0.348	0.397	0.302	0.423	0.191

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FODPO_INV-1_2022-09-18_N	RG_FODPO_INV-2_2022-09-18_N	RG_FODPO_INV-3_2022-09-18_N	RG_FODPO_INV-4_2022-09-18_N	RG_FODPO_INV-5_2022-09-18_N
Client ID							
Lab ID			329	330	331	332	333
Wet Weight (g)			0.8767	0.2952	0.4112	0.7367	0.8095
Dry Weight (g)			0.2113	0.0698	0.1186	0.1189	0.1643
Moisture (%)			75.9	76.4	71.2	83.9	79.7
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	2.0	0.974	0.752	1.0	1.7
11B	0.074	0.247	4.5	2.4	2.2	2.4	3.8
23Na	7.0	23	3,825	3,442	2,275	12,232	4,172
24Mg	0.241	0.803	1,508	1,897	1,215	2,145	1,529
27Al	0.091	0.303	3,816	1,482	1,783	8,570	2,143
31P	93	310	9,814	14,112	9,319	9,016	10,367
39K	2.6	8.7	9,656	12,591	8,141	13,737	9,082
44Ca	7.7	26	2,528	2,830	1,840	4,139	2,925
49Ti	0.105	0.350	271	116	175	578	176
51V	0.039	0.130	6.5	2.8	2.9	13	3.5
52Cr	0.151	0.503	16	15	12	16	11
55Mn	0.008	0.027	82	133	76	93	57
57Fe	0.898	3.0	1,458	854	662	2,159	976
59Co	0.013	0.043	2.2	2.4	1.5	3.1	1.2
60Ni	0.031	0.103	31	31	19	54	22
63Cu	0.020	0.067	17	18	10	15	14
66Zn	0.279	0.930	202	309	132	107	150
75As	0.388	1.3	0.941	0.610	0.453	1.4	0.941
77Se	0.469	1.6	7.4	9.2	5.2	7.1	6.7
88Sr	0.001	0.003	6.7	4.6	6.8	9.8	5.2
95Mo	0.008	0.027	0.596	0.477	0.226	0.728	0.439
107Ag	0.001	0.003	0.100	0.092	0.065	0.141	0.073
111Cd	0.082	0.273	2.5	2.5	0.915	1.7	1.2
118Sn	0.016	0.053	0.347	0.520	0.292	0.448	0.614
121Sb	0.008	0.027	0.119	0.068	0.100	0.196	0.111
137Ba	0.001	0.003	77	66	64	122	51
202Hg	0.033	0.110	0.047	0.034	<0.033	0.069	<0.033
205Tl	0.001	0.003	0.084	0.045	0.046	0.111	0.050
208Pb	0.002	0.007	0.962	0.488	0.577	1.6	0.711
238U	0.001	0.003	0.184	0.116	0.094	0.290	0.113

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FRCP1SW_IN	RG_FRCP1SW_IN	RG_FRCP1SW_IN	RG_FRCP1SW_IN	RG_FRCP1SW_IN
Client ID			V-1_2022-09-	V-2_2022-09-	V-3_2022-09-	V-4_2022-09-	V-5_2022-09-
Lab ID			19_N	19_N	19_N	19_N	19_N
Wet Weight (g)			334	335	336	337	338
Dry Weight (g)			1.0863	1.3281	0.8504	1.1714	0.7809
Moisture (%)			0.2059	0.3434	0.1625	0.2297	0.1573
			81.0	74.1	80.9	80.4	79.9
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	0.602	1.1	0.988	0.915	0.934
11B	0.074	0.247	0.408	0.758	1.0	0.738	0.798
23Na	7.0	23	2,921	3,564	2,705	2,308	3,969
24Mg	0.241	0.803	1,204	1,759	1,695	1,400	1,844
27Al	0.091	0.303	152	351	577	373	444
31P	93	310	9,897	13,609	10,805	10,467	14,011
39K	2.6	8.7	7,413	10,633	7,963	7,291	13,244
44Ca	7.7	26	1,205	2,370	2,400	2,251	1,898
49Ti	0.105	0.350	8.2	21	36	24	20
51V	0.039	0.130	0.340	0.725	1.2	0.769	0.850
52Cr	0.151	0.503	2.5	5.1	10	5.9	5.8
55Mn	0.008	0.027	41	89	56	75	47
57Fe	0.898	3.0	120	246	192	286	276
59Co	0.013	0.043	0.736	0.816	1.0	1.0	1.2
60Ni	0.031	0.103	7.1	11	18	12	13
63Cu	0.020	0.067	11	21	14	16	14
66Zn	0.279	0.930	190	291	272	339	271
75As	0.388	1.3	<0.388	0.388	<0.388	<0.388	0.450
77Se	0.469	1.6	7.0	9.3	9.0	8.6	9.0
88Sr	0.001	0.003	1.6	3.2	3.2	2.7	2.8
95Mo	0.008	0.027	0.163	0.300	0.225	0.350	0.250
107Ag	0.001	0.003	0.038	0.108	0.078	0.078	0.078
111Cd	0.082	0.273	1.4	0.937	1.2	1.2	1.2
118Sn	0.016	0.053	0.226	0.191	0.401	0.294	0.317
121Sb	0.008	0.027	0.020	0.027	0.030	0.030	0.032
137Ba	0.001	0.003	8.6	19	23	18	16
202Hg	0.033	0.110	<0.033	0.049	0.044	0.055	<0.033
205Tl	0.001	0.003	0.021	0.023	0.021	0.022	0.024
208Pb	0.002	0.007	0.079	0.091	0.148	0.120	0.167
238U	0.001	0.003	0.025	0.030	0.042	0.042	0.035

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_FODHE_INV-1_2022-09-19_N	RG_FODHE_INV-2_2022-09-19_N	RG_FODHE_INV-3_2022-09-19_N	RG_UFR1_INV-1_2022-09-19_N	RG_UFR1_INV-2_2022-09-19_N
			Lab ID	344	345	346	347	348
			Wet Weight (g)	0.5025	0.4881	0.7237	0.9378	0.7319
			Dry Weight (g)	0.0886	0.0886	0.1423	0.2241	0.1512
			Moisture (%)	82.4	81.8	80.3	76.1	79.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	4.6	0.872	4.0	0.674	0.384	
11B	0.074	0.247	3.9	1.8	1.7	5.8	4.3	
23Na	7.0	23	5,928	4,500	5,820	4,342	3,158	
24Mg	0.241	0.803	1,858	1,732	1,884	1,503	1,371	
27Al	0.091	0.303	606	715	634	1,221	739	
31P	93	310	15,850	15,593	15,692	16,720	11,048	
39K	2.6	8.7	13,986	13,747	15,146	13,241	9,993	
44Ca	7.7	26	3,169	2,543	3,002	2,000	2,155	
49Ti	0.105	0.350	40	43	53	89	44	
51V	0.039	0.130	1.2	1.4	1.8	2.7	1.6	
52Cr	0.151	0.503	6.1	9.8	11	12	9.7	
55Mn	0.008	0.027	53	88	86	61	45	
57Fe	0.898	3.0	309	517	498	638	393	
59Co	0.013	0.043	0.978	1.5	1.4	0.750	0.577	
60Ni	0.031	0.103	11	20	19	14	12	
63Cu	0.020	0.067	18	16	19	15	12	
66Zn	0.279	0.930	275	365	349	211	229	
75As	0.388	1.3	0.901	1.2	1.0	1.3	1.1	
77Se	0.469	1.6	9.0	11	11	5.4	5.0	
88Sr	0.001	0.003	5.1	4.7	4.7	4.5	4.1	
95Mo	0.008	0.027	0.300	0.425	0.438	0.475	0.300	
107Ag	0.001	0.003	0.120	0.114	0.174	0.072	0.069	
111Cd	0.082	0.273	2.1	2.6	2.9	0.998	1.4	
118Sn	0.016	0.053	0.814	0.923	0.436	0.125	0.202	
121Sb	0.008	0.027	0.036	0.039	0.068	0.058	0.037	
137Ba	0.001	0.003	25	32	28	67	50	
202Hg	0.033	0.110	0.055	0.055	0.077	0.044	0.055	
205Tl	0.001	0.003	0.030	0.038	0.038	0.036	0.024	
208Pb	0.002	0.007	0.180	0.273	0.223	0.503	0.223	
238U	0.001	0.003	0.052	0.076	0.075	0.069	0.041	

Notes:

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Teck Coal Limited
Tissue Analysis Results

		Client ID	RG_UFR1_INV- 3_2022-09-19_N	RG_UFR1_INV- 4_2022-09-19_N	RG_UFR1_INV- 5_2022-09-19_N
		Lab ID	349	350	351
		Wet Weight (g)	0.5348	0.6860	0.7021
		Dry Weight (g)	0.1324	0.2487	0.0524
		Moisture (%)	75.2	63.7	92.5
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)
7Li	0.030	0.100	0.453	0.209	0.465
11B	0.074	0.247	4.6	2.4	2.5
23Na	7.0	23	3,506	2,789	3,907
24Mg	0.241	0.803	1,395	1,089	1,368
27Al	0.091	0.303	620	293	359
31P	93	310	11,699	11,270	13,352
39K	2.6	8.7	11,130	10,965	10,350
44Ca	7.7	26	1,508	1,101	1,464
49Ti	0.105	0.350	87	19	47
51V	0.039	0.130	3.1	0.637	1.7
52Cr	0.151	0.503	12	3.8	14
55Mn	0.008	0.027	47	24	64
57Fe	0.898	3.0	713	160	517
59Co	0.013	0.043	0.585	0.294	0.919
60Ni	0.031	0.103	18	4.1	17
63Cu	0.020	0.067	15	9.4	15
66Zn	0.279	0.930	226	170	186
75As	0.388	1.3	1.1	0.808	0.994
77Se	0.469	1.6	4.7	3.5	5.0
88Sr	0.001	0.003	4.7	2.6	2.9
95Mo	0.008	0.027	0.338	0.225	0.450
107Ag	0.001	0.003	0.075	0.045	0.108
111Cd	0.082	0.273	1.4	1.2	0.967
118Sn	0.016	0.053	0.174	0.556	0.182
121Sb	0.008	0.027	0.061	0.024	0.055
137Ba	0.001	0.003	61	31	54
202Hg	0.033	0.110	0.068	0.044	0.055
205Tl	0.001	0.003	0.032	0.014	0.031
208Pb	0.002	0.007	0.342	0.107	0.285
238U	0.001	0.003	0.067	0.025	0.048

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FODPO_INV-01_2022-12_N	RG_FODPO_INV-02_2022-12_N	RG_FODPO_INV-03_2022-12_N	RG_FODPO_INV-04_2022-12_N	RG_FODPO_INV-05_2022-12_N
Client ID							
Lab ID			091	092	093	094	095
Wet Weight (g)			1.6597	0.9744	0.8191	0.9643	1.1612
Dry Weight (g)			0.4044	0.2384	0.1792	0.2310	0.2286
Moisture (%)			75.6	75.5	78.1	76.0	80.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	0.799	0.593	1.5	0.636	0.807
11B	0.110	0.367	1.1	0.678	3.0	0.700	2.5
23Na	10	33	4,416	3,563	5,136	3,183	3,558
24Mg	0.132	0.440	1,821	1,526	2,408	1,337	1,396
27Al	0.079	0.263	456	287	1,580	335	437
31P	75	250	14,223	12,856	15,656	11,443	10,972
39K	7.2	24	9,406	8,361	12,319	7,212	8,006
44Ca	49	163	3,613	2,514	4,711	2,697	3,495
49Ti	0.001	0.003	27	17	108	23	30
51V	0.036	0.120	0.871	0.499	2.7	0.657	1.1
52Cr	0.209	0.697	7.5	5.7	12	5.2	7.3
55Mn	0.010	0.033	41	36	41	21	34
57Fe	1.0	3.3	326	186	856	212	333
59Co	0.021	0.070	0.944	0.393	1.2	0.684	0.797
60Ni	0.067	0.223	11	7.0	19	5.3	9.7
63Cu	0.023	0.077	18	13	21	16	12
66Zn	0.276	0.920	264	146	282	175	148
75As	0.395	1.3	0.407	0.407	0.750	<0.395	0.717
77Se	0.494	1.6	5.2	4.6	5.3	4.0	3.6
88Sr	0.001	0.003	4.3	3.4	6.6	3.0	4.1
95Mo	0.001	0.003	0.240	0.210	0.330	0.210	0.240
107Ag	0.001	0.003	0.134	0.055	0.120	0.082	0.055
111Cd	0.089	0.297	0.981	0.545	1.4	1.0	0.872
118Sn	0.023	0.077	0.324	0.186	0.388	0.246	0.220
121Sb	0.004	0.013	0.038	0.029	0.064	0.054	0.038
137Ba	0.001	0.003	18	16	34	12	16
202Hg	0.030	0.100	0.039	<0.030	0.034	<0.030	<0.030
205Tl	0.001	0.003	0.021	0.017	0.053	0.019	0.027
208Pb	0.003	0.010	0.239	0.217	0.567	0.175	0.248
238U	0.001	0.003	0.047	0.039	0.107	0.034	0.052

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_UFR1_INV-01_2022-12_N	RG_UFR1_INV-02_2022-12_N	RG_UFR1_INV-03_2022-12_N	RG_UFR1_INV-04_2022-12_N	RG_UFR1_INV-05_2022-12_N
			Lab ID	096	097	098	099	100
			Wet Weight (g)	0.9765	0.8577	1.1999	0.7800	1.2449
			Dry Weight (g)	0.1596	0.1503	0.2360	0.1454	0.2766
			Moisture (%)	83.7	82.5	80.3	81.4	77.8
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	0.232	0.352	0.249	0.386	0.459	
11B	0.110	0.367	3.1	4.2	3.7	5.8	4.1	
23Na	10	33	3,789	3,993	4,318	3,686	3,889	
24Mg	0.132	0.440	1,339	1,089	1,286	1,191	1,127	
27Al	0.079	0.263	299	572	401	611	684	
31P	75	250	13,217	10,851	13,834	11,968	12,998	
39K	7.2	24	9,818	7,962	11,013	8,911	9,858	
44Ca	49	163	3,236	2,330	3,389	2,953	2,538	
49Ti	0.001	0.003	20	39	24	40	47	
51V	0.036	0.120	0.772	1.2	1.1	1.5	1.7	
52Cr	0.209	0.697	6.5	6.3	7.4	8.7	11	
55Mn	0.010	0.033	21	40	27	37	40	
57Fe	1.0	3.3	211	309	241	374	446	
59Co	0.021	0.070	0.689	0.689	0.605	0.876	0.871	
60Ni	0.067	0.223	10	10	11	13	19	
63Cu	0.023	0.077	16	12	15	15	16	
66Zn	0.276	0.920	229	164	177	195	171	
75As	0.395	1.3	2.9	1.8	2.4	2.2	2.4	
77Se	0.494	1.6	4.5	3.9	3.8	5.2	4.0	
88Sr	0.001	0.003	4.7	3.9	5.8	5.4	4.5	
95Mo	0.001	0.003	0.240	0.270	0.210	0.240	0.330	
107Ag	0.001	0.003	0.096	0.062	0.069	0.089	0.069	
111Cd	0.089	0.297	6.3	4.5	2.7	3.4	2.3	
118Sn	0.023	0.077	0.567	0.305	0.300	0.381	0.340	
121Sb	0.004	0.013	0.041	0.043	0.037	0.044	0.068	
137Ba	0.001	0.003	25	37	27	38	37	
202Hg	0.030	0.100	0.049	0.044	0.034	0.039	0.039	
205Tl	0.001	0.003	0.023	0.027	0.023	0.041	0.045	
208Pb	0.003	0.010	0.186	0.282	0.206	0.360	0.360	
238U	0.001	0.003	0.038	0.057	0.038	0.061	0.066	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_FOUKI_INV-01_2022-12_N	RG_FOUKI_INV-02_2022-12_N	RG_FOUKI_INV-03_2022-12_N	RG_FOUKI_INV-04_2022-12_N	RG_FOUKI_INV-05_2022-12_N
			Lab ID	101	102	103	104	105
			Wet Weight (g)	1.2648	1.2118	1.3520	1.6037	1.0679
			Dry Weight (g)	0.2815	0.3173	0.3145	0.3687	0.2234
			Moisture (%)	77.7	73.8	76.7	77.0	79.1
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	1.8	1.1	1.9	1.1	1.7	
11B	0.110	0.367	1.5	1.2	1.2	1.0	1.0	
23Na	10	33	4,625	2,951	4,509	3,146	3,854	
24Mg	0.132	0.440	1,305	1,160	1,138	810	1,390	
27Al	0.079	0.263	900	807	798	235	592	
31P	75	250	12,154	11,442	11,464	9,448	10,484	
39K	7.2	24	9,544	7,476	9,246	7,164	7,552	
44Ca	49	163	4,822	4,333	4,245	2,083	3,465	
49Ti	0.001	0.003	83	77	76	18	61	
51V	0.036	0.120	2.4	1.9	1.8	0.582	1.6	
52Cr	0.209	0.697	7.1	11	5.0	3.2	5.3	
55Mn	0.010	0.033	145	104	138	120	122	
57Fe	1.0	3.3	964	854	753	287	934	
59Co	0.021	0.070	1.1	0.630	1.1	0.634	0.905	
60Ni	0.067	0.223	22	21	21	10	18	
63Cu	0.023	0.077	15	11	14	14	18	
66Zn	0.276	0.920	194	180	139	141	211	
75As	0.395	1.3	0.945	0.945	0.880	0.489	1.1	
77Se	0.494	1.6	5.7	3.9	5.3	4.3	5.8	
88Sr	0.001	0.003	6.3	6.1	5.5	2.5	5.1	
95Mo	0.001	0.003	0.450	0.420	0.420	0.300	0.360	
107Ag	0.001	0.003	0.103	0.076	0.100	0.069	0.144	
111Cd	0.089	0.297	1.4	1.1	1.3	0.981	1.3	
118Sn	0.023	0.077	0.208	0.177	0.127	0.158	0.167	
121Sb	0.004	0.013	0.083	0.081	0.086	0.049	0.072	
137Ba	0.001	0.003	56	54	39	22	43	
202Hg	0.030	0.100	0.034	<0.030	<0.030	<0.030	0.049	
205Tl	0.001	0.003	0.046	0.034	0.039	0.020	0.036	
208Pb	0.003	0.010	0.435	0.348	0.355	0.106	0.261	
238U	0.001	0.003	0.106	0.071	0.083	0.035	0.070	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FOBSC_INV- 01_2022-12_N	RG_FOBSC_INV- 02_2022-12_N	RG_FOBSC_INV- 03_2022-12_N	RG_FOBSC_INV- 04_2022-12_N	RG_FOBSC_INV- 05_2022-12_N
Client ID							
Lab ID			106	107	108	109	110
Wet Weight (g)			1.3970	1.2801	1.2333	1.2755	1.1710
Dry Weight (g)			0.3283	0.2673	0.2403	0.2931	0.2660
Moisture (%)			76.5	79.1	80.5	77.0	77.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	0.584	0.958	1.1	0.968	0.891
11B	0.110	0.367	0.306	0.394	0.557	0.557	0.612
23Na	10	33	3,499	4,409	4,934	4,652	3,155
24Mg	0.132	0.440	1,224	1,210	1,664	1,484	1,156
27Al	0.079	0.263	146	135	259	299	352
31P	75	250	10,835	13,212	14,865	12,579	10,477
39K	7.2	24	7,974	10,037	13,444	10,523	8,587
44Ca	49	163	2,331	2,534	3,829	3,065	2,456
49Ti	0.001	0.003	8.8	9.0	21	20	27
51V	0.036	0.120	0.325	0.269	0.591	0.642	0.759
52Cr	0.209	0.697	4.0	3.2	4.6	7.0	3.8
55Mn	0.010	0.033	31	39	37	36	95
57Fe	1.0	3.3	238	265	391	426	445
59Co	0.021	0.070	0.325	0.462	0.401	0.535	0.758
60Ni	0.067	0.223	6.2	13	13	13	15
63Cu	0.023	0.077	10	11	14	16	10
66Zn	0.276	0.920	125	183	180	268	140
75As	0.395	1.3	<0.395	<0.395	<0.395	<0.395	<0.395
77Se	0.494	1.6	5.4	7.2	7.8	7.0	6.4
88Sr	0.001	0.003	2.1	2.3	4.2	3.2	2.8
95Mo	0.001	0.003	0.270	0.390	0.348	0.278	0.418
107Ag	0.001	0.003	0.041	0.048	0.066	0.057	0.047
111Cd	0.089	0.297	0.545	0.872	0.834	0.723	1.0
118Sn	0.023	0.077	0.225	0.248	0.474	0.371	0.328
121Sb	0.004	0.013	0.019	0.013	0.027	0.027	0.023
137Ba	0.001	0.003	8.5	8.4	16	15	21
202Hg	0.030	0.100	<0.030	0.039	<0.030	0.034	<0.030
205Tl	0.001	0.003	0.019	0.018	0.023	0.021	0.021
208Pb	0.003	0.010	0.086	0.065	0.082	0.091	0.105
238U	0.001	0.003	0.028	0.053	0.058	0.045	0.056

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FRSCH2_INV- 01_2022-12_N	RG_FRSCH2_INV- 02_2022-12_N	RG_FRSCH2_INV- 03_2022-12_N	RG_FRSCH2_INV- 04_2022-12_N	RG_FRSCH2_INV- 05_2022-12_N
Client ID							
Lab ID			111	112	113	114	115
Wet Weight (g)			0.9933	1.2597	1.2221	0.7622	0.7811
Dry Weight (g)			0.2236	0.2755	0.2570	0.1726	0.1616
Moisture (%)			77.5	78.1	79.0	77.4	79.3
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	0.473	1.1	1.0	1.3	0.935
11B	0.110	0.367	0.668	1.4	1.4	3.2	1.7
23Na	10	33	2,340	5,004	3,748	4,478	4,160
24Mg	0.132	0.440	1,112	1,920	1,504	2,076	1,740
27Al	0.079	0.263	138	256	442	1,148	434
31P	75	250	9,181	15,298	11,981	14,724	12,369
39K	7.2	24	6,049	12,370	10,087	12,066	9,812
44Ca	49	163	1,937	3,399	2,738	4,332	3,101
49Ti	0.001	0.003	8.7	17	26	27	28
51V	0.036	0.120	0.367	0.688	0.922	2.2	0.968
52Cr	0.209	0.697	3.6	4.6	7.2	29	10
55Mn	0.010	0.033	16	45	32	42	57
57Fe	1.0	3.3	104	235	275	919	378
59Co	0.021	0.070	0.340	0.668	0.522	1.2	0.924
60Ni	0.067	0.223	3.6	6.4	8.8	38	10
63Cu	0.023	0.077	8.7	19	13	20	17
66Zn	0.276	0.920	150	312	160	200	251
75As	0.395	1.3	0.611	0.815	0.815	1.2	0.815
77Se	0.494	1.6	3.6	6.3	5.2	6.4	6.4
88Sr	0.001	0.003	1.9	3.3	3.2	6.7	2.5
95Mo	0.001	0.003	0.139	0.278	0.244	0.452	0.348
107Ag	0.001	0.003	0.061	0.142	0.085	0.104	0.104
111Cd	0.089	0.297	1.5	2.3	1.2	1.8	3.5
118Sn	0.023	0.077	0.172	0.295	0.301	0.315	0.354
121Sb	0.004	0.013	0.030	0.046	0.052	0.086	0.051
137Ba	0.001	0.003	7.8	15	16	34	21
202Hg	0.030	0.100	<0.030	0.034	<0.030	0.034	0.040
205Tl	0.001	0.003	0.012	0.021	0.019	0.037	0.022
208Pb	0.003	0.010	0.071	0.141	0.212	0.334	0.193
238U	0.001	0.003	0.052	0.116	0.092	0.155	0.121

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_SCDSB_INV-01_2022-12_N	RG_SCDSB_INV-02_2022-12_N	RG_SCDSB_INV-03_2022-12_N	RG_SCDSB_INV-04_2022-12_N	RG_SCDSB_INV-05_2022-12_N
Client ID							
Lab ID			116	117	118	119	120
Wet Weight (g)			0.7944	1.1648	0.9420	0.8157	0.9865
Dry Weight (g)			0.1745	0.2620	0.2018	0.1448	0.1889
Moisture (%)			78.0	77.5	78.6	82.2	80.9
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	1.2	1.7	0.962	1.9	2.0
11B	0.110	0.367	0.668	0.724	0.918	0.779	2.1
23Na	10	33	4,202	4,945	3,677	5,318	5,688
24Mg	0.132	0.440	1,874	1,925	1,905	1,564	2,038
27Al	0.079	0.263	301	345	629	427	1,035
31P	75	250	15,644	14,756	11,922	13,805	14,613
39K	7.2	24	11,329	11,349	9,723	11,328	13,330
44Ca	49	163	3,891	2,786	3,962	4,152	7,312
49Ti	0.001	0.003	29	27	54	34	100
51V	0.036	0.120	0.866	0.779	1.6	1.0	2.8
52Cr	0.209	0.697	6.1	5.9	9.6	10	21
55Mn	0.010	0.033	68	58	95	43	72
57Fe	1.0	3.3	470	441	778	605	1,569
59Co	0.021	0.070	1.2	1.1	2.8	0.863	1.9
60Ni	0.067	0.223	13	12	19	22	41
63Cu	0.023	0.077	20	19	18	20	23
66Zn	0.276	0.920	291	207	428	217	229
75As	0.395	1.3	<0.395	<0.395	<0.395	0.407	0.774
77Se	0.494	1.6	9.6	10	12	7.4	9.6
88Sr	0.001	0.003	4.6	3.0	5.5	5.0	9.4
95Mo	0.001	0.003	0.348	0.661	0.487	0.487	0.418
107Ag	0.001	0.003	0.095	0.123	0.113	0.113	0.161
111Cd	0.089	0.297	1.8	1.3	3.1	0.834	1.7
118Sn	0.023	0.077	0.454	0.438	0.522	0.427	0.849
121Sb	0.004	0.013	0.039	0.048	0.041	0.052	0.084
137Ba	0.001	0.003	22	18	29	26	60
202Hg	0.030	0.100	0.047	0.047	0.071	0.040	0.040
205Tl	0.001	0.003	0.031	0.028	0.044	0.025	0.049
208Pb	0.003	0.010	0.150	0.193	0.230	0.155	0.380
238U	0.001	0.003	0.057	0.043	0.091	0.070	0.152

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_FO22_INV-01_2022-12_N	RG_FO22_INV-02_2022-12_N	RG_FO22_INV-03_2022-12_N	RG_FO22_INV-04_2022-12_N	RG_FO22_INV-05_2022-12_N
			Lab ID	121	122	123	124	125
			Wet Weight (g)	0.1948	0.3597	0.4362	0.0754	0.0493
			Dry Weight (g)	0.0509	0.0475	0.1057	0.0105	0.0084
			Moisture (%)	73.9	86.8	75.8	86.1	83.0
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	2.3	3.7	0.814	0.341	0.645	
11B	0.110	0.367	5.1	3.3	1.5	0.835	1.3	
23Na	10	33	3,010	9,715	3,830	727	2,041	
24Mg	0.132	0.440	2,097	1,482	1,673	454	795	
27Al	0.079	0.263	3,564	2,233	553	468	715	
31P	75	250	12,627	11,281	12,401	2,897	5,868	
39K	7.2	24	9,500	12,960	10,318	1,957	4,633	
44Ca	49	163	5,566	2,714	2,743	1,286	2,322	
49Ti	0.001	0.003	391	169	40	40	102	
51V	0.036	0.120	9.7	5.4	1.7	0.998	2.3	
52Cr	0.209	0.697	70	13	13	11	27	
55Mn	0.010	0.033	106	80	48	36	31	
57Fe	1.0	3.3	3,558	1,619	1,153	541	928	
59Co	0.021	0.070	1.6	1.2	0.389	1.0	1.2	
60Ni	0.067	0.223	106	19	16	12	26	
63Cu	0.023	0.077	19	14	16	5.3	6.7	
66Zn	0.276	0.920	172	123	166	80	68	
75As	0.395	1.3	1.1	1.1	0.489	<0.395	0.485	
77Se	0.494	1.6	9.1	8.9	5.6	1.8	3.5	
88Sr	0.001	0.003	13	5.8	4.2	1.6	3.2	
95Mo	0.001	0.003	1.0	0.348	0.278	0.104	0.309	
107Ag	0.001	0.003	0.123	0.085	0.095	0.047	0.034	
111Cd	0.089	0.297	1.1	0.501	0.389	1.1	0.227	
118Sn	0.023	0.077	0.683	0.407	0.357	0.269	0.891	
121Sb	0.004	0.013	0.180	0.086	0.042	0.032	0.054	
137Ba	0.001	0.003	91	62	30	18	22	
202Hg	0.030	0.100	0.054	0.047	<0.030	<0.030	<0.030	
205Tl	0.001	0.003	0.104	0.068	0.031	0.022	0.030	
208Pb	0.003	0.010	0.829	0.812	0.308	0.232	0.361	
238U	0.001	0.003	0.193	0.119	0.055	0.038	0.069	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FRGHSC_INV-01_2022-12_N	RG_FRGHSC_INV-02_2022-12_N	RG_FRGHSC_INV-03_2022-12_N	RG_FRGHSC_INV-04_2022-12_N	RG_FRGHSC_INV-05_2022-12_N
Client ID							
Lab ID			126	127	128	129	130
Wet Weight (g)			0.8108	0.4698	0.6934	0.6395	0.9229
Dry Weight (g)			0.2017	0.1042	0.1366	0.1476	0.2181
Moisture (%)			75.1	77.8	80.3	76.9	76.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	0.704	0.593	0.820	0.582	0.555
11B	0.110	0.367	0.771	0.803	1.9	0.771	0.900
23Na	10	33	3,510	3,157	3,511	3,636	2,364
24Mg	0.132	0.440	1,392	1,866	1,835	1,322	1,129
27Al	0.079	0.263	276	284	547	184	180
31P	75	250	13,228	13,564	11,742	10,790	10,010
39K	7.2	24	9,848	9,687	10,091	9,355	6,092
44Ca	49	163	1,309	3,735	3,841	2,792	1,279
49Ti	0.001	0.003	21	21	37	9.9	12
51V	0.036	0.120	0.647	0.681	1.2	0.462	0.427
52Cr	0.209	0.697	7.5	7.3	6.2	5.2	3.9
55Mn	0.010	0.033	42	17	16	14	30
57Fe	1.0	3.3	250	254	338	187	150
59Co	0.021	0.070	0.289	0.276	0.389	0.276	0.132
60Ni	0.067	0.223	5.9	7.5	5.7	4.5	2.1
63Cu	0.023	0.077	19	25	24	21	16
66Zn	0.276	0.920	213	247	182	180	140
75As	0.395	1.3	0.397	<0.395	0.397	<0.395	<0.395
77Se	0.494	1.6	15	7.9	7.9	5.8	10
88Sr	0.001	0.003	1.7	4.4	4.2	3.3	3.0
95Mo	0.001	0.003	0.232	0.348	0.309	0.155	0.232
107Ag	0.001	0.003	0.034	0.076	0.062	0.055	0.027
111Cd	0.089	0.297	1.5	4.7	4.6	4.1	1.3
118Sn	0.023	0.077	0.152	0.299	0.594	0.148	0.126
121Sb	0.004	0.013	0.040	0.053	0.053	0.032	0.027
137Ba	0.001	0.003	49	21	25	15	51
202Hg	0.030	0.100	0.036	<0.030	<0.030	<0.030	<0.030
205Tl	0.001	0.003	0.013	0.015	0.018	0.012	0.008
208Pb	0.003	0.010	0.152	0.111	0.147	0.083	0.130
238U	0.001	0.003	0.086	0.080	0.149	0.048	0.100

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FOUCL_INV-01_2022-12_N	RG_FOUCL_INV-02_2022-12_N	RG_FOUCL_INV-03_2022-12_N	RG_FOUCL_INV-04_2022-12_N	RG_FOUCL_INV-05_2022-12_N
Client ID							
Lab ID			131	132	133	134	135
Wet Weight (g)			0.7933	0.9983	1.5125	2.0063	1.0027
Dry Weight (g)			0.1714	0.2055	0.3470	0.4402	0.2262
Moisture (%)			78.4	79.4	77.1	78.1	77.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	0.804	1.1	0.561	0.635	0.593
11B	0.110	0.367	3.9	3.7	3.1	3.4	2.2
23Na	10	33	3,465	3,226	2,919	3,759	3,216
24Mg	0.132	0.440	1,622	1,147	1,237	1,433	1,664
27Al	0.079	0.263	778	731	357	236	285
31P	75	250	12,251	11,937	11,506	12,781	12,391
39K	7.2	24	10,357	8,401	8,974	9,591	9,549
44Ca	49	163	4,139	2,868	2,687	3,472	4,269
49Ti	0.001	0.003	64	63	33	19	26
51V	0.036	0.120	2.4	1.9	1.2	0.739	0.716
52Cr	0.209	0.697	15	11	8.8	5.1	7.2
55Mn	0.010	0.033	40	55	39	41	33
57Fe	1.0	3.3	536	495	272	202	219
59Co	0.021	0.070	0.754	1.0	0.710	0.704	0.923
60Ni	0.067	0.223	20	12	9.8	7.8	9.0
63Cu	0.023	0.077	16	13	12	13	12
66Zn	0.276	0.920	232	215	171	173	226
75As	0.395	1.3	1.2	1.1	1.5	1.3	1.6
77Se	0.494	1.6	5.8	6.8	6.1	5.8	5.8
88Sr	0.001	0.003	6.8	3.5	3.8	3.8	5.1
95Mo	0.001	0.003	0.425	0.271	0.232	0.232	0.193
107Ag	0.001	0.003	0.062	0.048	0.041	0.041	0.034
111Cd	0.089	0.297	2.2	1.1	0.851	0.965	1.6
118Sn	0.023	0.077	0.319	0.356	0.208	0.139	0.302
121Sb	0.004	0.013	0.078	0.042	0.035	0.029	0.034
137Ba	0.001	0.003	44	46	23	25	23
202Hg	0.030	0.100	0.036	0.058	0.051	<0.030	0.036
205Tl	0.001	0.003	0.033	0.029	0.026	0.019	0.016
208Pb	0.003	0.010	0.280	0.288	0.175	0.119	0.119
238U	0.001	0.003	0.098	0.085	0.062	0.063	0.064

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_WED_INV-01_2022-12_N	RG_WED_INV-02_2022-12_N	RG_WED_INV-03_2022-12_N	RG_WED_INV-04_2022-12_N	RG_WED_INV-05_2022-12_N
			Lab ID	136	137	138	139	140
			Wet Weight (g)	0.5223	0.6794	1.1483	1.2728	1.2676
			Dry Weight (g)	0.0986	0.1281	0.1985	0.2078	0.2535
			Moisture (%)	81.1	81.1	82.7	83.7	80.0
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	1.7	2.1	2.1	1.8	1.3	
11B	0.110	0.367	5.5	10	11	4.5	2.8	
23Na	10	33	4,197	4,563	4,355	3,536	3,447	
24Mg	0.132	0.440	1,483	2,141	2,049	1,335	1,683	
27Al	0.079	0.263	773	1,365	1,245	600	585	
31P	75	250	12,577	14,413	13,623	10,826	12,538	
39K	7.2	24	10,978	13,654	11,670	9,052	9,899	
44Ca	49	163	3,969	5,214	5,550	3,135	4,246	
49Ti	0.001	0.003	86	148	163	62	59	
51V	0.036	0.120	2.5	3.8	3.6	1.6	1.5	
52Cr	0.209	0.697	9.2	9.7	14	6.7	6.7	
55Mn	0.010	0.033	13	17	23	19	15	
57Fe	1.0	3.3	316	500	495	239	283	
59Co	0.021	0.070	0.628	1.1	1.2	0.660	1.0	
60Ni	0.067	0.223	14	21	25	13	9.3	
63Cu	0.023	0.077	22	26	21	16	20	
66Zn	0.276	0.920	251	256	272	212	241	
75As	0.395	1.3	2.0	3.6	3.2	1.8	1.3	
77Se	0.494	1.6	8.2	9.4	11	9.6	10	
88Sr	0.001	0.003	6.7	9.8	9.1	5.4	6.0	
95Mo	0.001	0.003	0.271	0.348	0.271	0.271	0.271	
107Ag	0.001	0.003	0.131	0.089	0.072	0.048	0.082	
111Cd	0.089	0.297	1.8	4.1	4.5	2.4	4.4	
118Sn	0.023	0.077	0.380	0.409	0.463	0.434	0.375	
121Sb	0.004	0.013	0.123	0.140	0.133	0.065	0.066	
137Ba	0.001	0.003	36	59	59	45	38	
202Hg	0.030	0.100	0.036	0.051	0.058	<0.030	<0.030	
205Tl	0.001	0.003	0.035	0.050	0.038	0.021	0.025	
208Pb	0.003	0.010	0.353	0.497	0.432	0.255	0.231	
238U	0.001	0.003	0.160	0.323	0.314	0.196	0.146	

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_SCOUTDS_IN	RG_SCOUTDS_IN	RG_SCOUTDS_IN	RG_SCOUTDS_IN	RG_SCOUTDS_IN
Client ID			V-01_2022-12_N	V-02_2022-12_N	V-03_2022-12_N	V-04_2022-12_N	V-05_2022-12_N
Lab ID			141	142	143	144	145
Wet Weight (g)			1.4984	1.0531	1.2921	1.4454	1.0275
Dry Weight (g)			0.3149	0.2534	0.2581	0.3674	0.2312
Moisture (%)			79.0	75.9	80.0	74.6	77.5
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	1.2	0.720	3.7	0.854	0.815
11B	0.110	0.367	0.836	0.429	0.552	0.491	0.920
23Na	10	33	4,543	3,522	6,557	2,983	4,188
24Mg	0.132	0.440	1,743	1,469	1,687	1,455	1,732
27Al	0.079	0.263	278	199	170	225	318
31P	75	250	14,136	12,649	11,527	11,293	13,036
39K	7.2	24	11,197	9,713	9,176	8,466	11,094
44Ca	49	163	3,558	2,722	3,382	2,787	5,135
49Ti	0.001	0.003	19	13	17	14	24
51V	0.036	0.120	0.802	0.403	0.409	0.518	0.763
52Cr	0.209	0.697	4.2	4.1	3.6	3.6	4.7
55Mn	0.010	0.033	53	79	65	124	49
57Fe	1.0	3.3	621	356	365	385	635
59Co	0.021	0.070	0.528	0.777	0.586	0.943	0.560
60Ni	0.067	0.223	9.3	8.2	6.5	7.3	9.3
63Cu	0.023	0.077	15	14	12	15	19
66Zn	0.276	0.920	208	205	170	176	223
75As	0.395	1.3	<0.395	<0.395	<0.395	<0.395	<0.395
77Se	0.494	1.6	7.8	9.2	7.5	7.4	8.9
88Sr	0.001	0.003	3.8	2.8	2.2	3.2	4.5
95Mo	0.001	0.003	0.425	0.356	0.395	0.356	0.395
107Ag	0.001	0.003	0.048	0.059	0.059	0.059	0.067
111Cd	0.089	0.297	0.965	1.1	2.5	0.641	1.5
118Sn	0.023	0.077	0.620	0.345	0.413	0.417	0.627
121Sb	0.004	0.013	0.028	0.026	0.026	0.026	0.027
137Ba	0.001	0.003	19	12	11	14	20
202Hg	0.030	0.100	<0.030	0.031	0.046	0.031	0.039
205Tl	0.001	0.003	0.029	0.012	0.029	0.013	0.027
208Pb	0.003	0.010	0.098	0.087	0.081	0.077	0.063
238U	0.001	0.003	0.097	0.043	0.036	0.041	0.057

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FRDSCC1_IN	RG_FRDSCC1_IN	RG_FRDSCC1_IN	RG_FRDSCC1_IN	RG_FRDSCC1_IN
Client ID			V-01_2022-12_N	V-02_2022-12_N	V-03_2022-12_N	V-04_2022-12_N	V-05_2022-12_N
Lab ID			146	147	148	149	150
Wet Weight (g)			0.9946	1.0982	0.8361	0.8438	0.9871
Dry Weight (g)			0.2160	0.2181	0.2160	0.2026	0.2595
Moisture (%)			78.3	80.1	74.2	76.0	73.7
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	1.2	1.0	0.960	1.1	0.793
11B	0.110	0.367	1.8	2.5	1.9	3.6	2.3
23Na	10	33	3,136	3,153	3,287	3,876	2,690
24Mg	0.132	0.440	1,083	1,296	1,264	1,612	1,296
27Al	0.079	0.263	355	251	202	313	167
31P	75	250	10,926	11,100	11,381	12,629	11,033
39K	7.2	24	8,512	7,882	9,557	10,068	8,039
44Ca	49	163	1,943	3,272	3,027	4,086	3,255
49Ti	0.001	0.003	29	21	11	22	10
51V	0.036	0.120	0.692	0.627	0.447	0.790	0.392
52Cr	0.209	0.697	3.8	4.6	3.0	4.8	4.1
55Mn	0.010	0.033	43	26	18	26	18
57Fe	1.0	3.3	172	153	147	184	124
59Co	0.021	0.070	1.6	0.764	0.739	0.968	0.459
60Ni	0.067	0.223	6.1	6.2	6.5	9.5	6.7
63Cu	0.023	0.077	14	16	15	15	14
66Zn	0.276	0.920	154	164	203	178	151
75As	0.395	1.3	0.732	0.926	1.2	1.9	1.4
77Se	0.494	1.6	5.7	4.8	5.5	5.0	3.6
88Sr	0.001	0.003	2.6	4.4	4.1	5.4	3.6
95Mo	0.001	0.003	0.198	0.158	0.198	0.198	0.198
107Ag	0.001	0.003	0.050	0.059	0.050	0.059	0.050
111Cd	0.089	0.297	1.8	0.991	2.3	1.4	1.1
118Sn	0.023	0.077	0.287	0.286	0.116	0.201	0.098
121Sb	0.004	0.013	0.024	0.033	0.026	0.039	0.021
137Ba	0.001	0.003	24	22	15	29	14
202Hg	0.030	0.100	0.046	0.031	0.042	0.031	<0.030
205Tl	0.001	0.003	0.014	0.019	0.019	0.021	0.013
208Pb	0.003	0.010	0.157	0.157	0.115	0.192	0.099
238U	0.001	0.003	0.038	0.041	0.039	0.076	0.026

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FOU EW_INV- 01_2022-12_N	RG_FOU EW_INV- 02_2022-12_N	RG_FOU EW_INV- 03_2022-12_N	RG_FOU EW_INV- 04_2022-12_N	RG_FOU EW_INV- 05_2022-12_N
Client ID							
Lab ID			151	152	153	154	155
Wet Weight (g)			0.7134	1.1754	0.8851	0.8976	1.1088
Dry Weight (g)			0.1571	0.2981	0.2145	0.1886	0.2650
Moisture (%)			78.0	74.6	75.8	79.0	76.1
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	0.609	0.603	0.715	0.625	0.776
11B	0.110	0.367	0.736	0.552	1.3	0.798	0.920
23Na	10	33	2,858	2,970	3,930	2,698	2,861
24Mg	0.132	0.440	1,602	1,094	1,807	1,331	1,244
27Al	0.079	0.263	157	135	373	306	267
31P	75	250	10,994	9,877	15,260	11,259	10,830
39K	7.2	24	7,652	7,846	11,887	7,717	7,271
44Ca	49	163	2,197	1,498	4,660	2,964	2,541
49Ti	0.001	0.003	9.1	8.4	19	17	19
51V	0.036	0.120	0.360	0.332	0.872	0.643	0.774
52Cr	0.209	0.697	4.0	3.2	4.8	5.1	3.9
55Mn	0.010	0.033	50	123	60	87	125
57Fe	1.0	3.3	188	243	397	287	315
59Co	0.021	0.070	0.197	0.376	0.318	0.471	0.420
60Ni	0.067	0.223	2.8	2.9	4.2	4.2	3.6
63Cu	0.023	0.077	12	13	17	12	16
66Zn	0.276	0.920	183	162	169	169	145
75As	0.395	1.3	<0.395	<0.395	0.517	<0.395	<0.395
77Se	0.494	1.6	5.1	6.1	6.2	5.0	7.4
88Sr	0.001	0.003	2.5	2.0	4.8	3.1	3.0
95Mo	0.001	0.003	0.119	0.237	0.237	0.158	0.356
107Ag	0.001	0.003	0.084	0.063	0.109	0.076	0.084
111Cd	0.089	0.297	0.816	0.699	0.991	0.932	0.757
118Sn	0.023	0.077	0.311	0.133	0.399	0.291	0.201
121Sb	0.004	0.013	0.013	0.017	0.033	0.022	0.022
137Ba	0.001	0.003	17	20	30	19	31
202Hg	0.030	0.100	0.031	0.031	<0.030	<0.030	0.039
205Tl	0.001	0.003	0.008	0.008	0.020	0.012	0.011
208Pb	0.003	0.010	0.092	0.125	0.198	0.147	0.175
238U	0.001	0.003	0.022	0.026	0.053	0.034	0.039

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FRUPO_INV-01_2022-12_N	RG_FRUPO_INV-02_2022-12_N	RG_FRUPO_INV-03_2022-12_N	RG_FRUPO_INV-04_2022-12_N	RG_FRUPO_INV-05_2022-12_N
Client ID							
Lab ID			156	157	158	159	160
Wet Weight (g)			0.8010	1.7878	0.9548	0.9793	0.9953
Dry Weight (g)			0.2104	0.3919	0.2327	0.2349	0.2245
Moisture (%)			73.7	78.1	75.6	76.0	77.4
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	0.603	0.963	0.413	0.575	0.558
11B	0.110	0.367	1.4	2.6	0.951	1.1	0.429
23Na	10	33	2,807	4,003	2,290	3,454	3,129
24Mg	0.132	0.440	1,417	1,621	1,051	1,348	1,323
27Al	0.079	0.263	361	758	186	305	155
31P	75	250	10,542	9,745	8,403	11,352	10,731
39K	7.2	24	8,071	9,294	6,545	9,279	8,181
44Ca	49	163	3,194	4,195	2,257	2,588	2,371
49Ti	0.001	0.003	27	104	12	21	9.1
51V	0.036	0.120	0.796	2.5	0.420	0.665	0.349
52Cr	0.209	0.697	4.9	5.6	3.6	5.0	3.3
55Mn	0.010	0.033	28	29	15	19	31
57Fe	1.0	3.3	247	587	131	231	115
59Co	0.021	0.070	0.325	0.529	0.217	0.267	0.223
60Ni	0.067	0.223	3.8	6.2	2.7	3.9	2.7
63Cu	0.023	0.077	13	12	7.9	13	10
66Zn	0.276	0.920	178	101	102	141	182
75As	0.395	1.3	0.581	0.991	0.431	0.474	<0.395
77Se	0.494	1.6	5.7	4.8	3.7	5.5	4.3
88Sr	0.001	0.003	3.4	5.1	2.3	3.0	3.6
95Mo	0.001	0.003	0.198	0.257	0.119	0.119	0.119
107Ag	0.001	0.003	0.067	0.067	0.025	0.067	0.050
111Cd	0.089	0.297	1.3	1.4	0.466	0.991	0.991
118Sn	0.023	0.077	0.191	0.200	0.155	0.219	0.239
121Sb	0.004	0.013	0.037	0.082	0.021	0.033	0.021
137Ba	0.001	0.003	24	51	14	17	18
202Hg	0.030	0.100	0.031	0.031	<0.030	<0.030	0.031
205Tl	0.001	0.003	0.012	0.026	0.006	0.009	0.008
208Pb	0.003	0.010	0.198	0.434	0.077	0.135	0.107
238U	0.001	0.003	0.085	0.157	0.043	0.064	0.043

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FOUNGD_IN	RG_FOUNGD_IN	RG_FOUNGD_IN	RG_FOUNGD_IN	RG_FOUNGD_IN
Client ID			V-01_2022-12_N	V-02_2022-12_N	V-03_2022-12_N	V-04_2022-12_N	V-05_2022-12_N
Lab ID			161	162	163	164	165
Wet Weight (g)			0.3748	0.5703	0.3787	0.4706	0.4237
Dry Weight (g)			0.0762	0.1267	0.0989	0.0937	0.0948
Moisture (%)			79.7	77.8	73.9	80.1	77.6
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	2.2	2.6	1.2	1.8	3.3
11B	0.110	0.367	1.9	3.3	1.4	1.4	7.1
23Na	10	33	7,039	4,441	3,972	4,869	6,684
24Mg	0.132	0.440	1,999	1,629	1,396	1,776	1,783
27Al	0.079	0.263	678	1,094	505	477	777
31P	75	250	15,408	13,705	12,935	14,724	13,888
39K	7.2	24	11,242	11,366	11,884	12,367	12,545
44Ca	49	163	3,337	2,868	2,142	3,087	3,609
49Ti	0.001	0.003	58	87	39	34	76
51V	0.036	0.120	1.8	2.2	1.1	1.0	1.9
52Cr	0.209	0.697	16	12	6.9	8.4	10
55Mn	0.010	0.033	48	60	33	29	50
57Fe	1.0	3.3	585	566	264	301	455
59Co	0.021	0.070	1.9	2.0	2.3	1.4	2.0
60Ni	0.067	0.223	25	20	13	13	17
63Cu	0.023	0.077	19	17	16	21	19
66Zn	0.276	0.920	290	241	261	353	204
75As	0.395	1.3	0.750	0.908	1.2	1.2	1.3
77Se	0.494	1.6	7.9	7.0	5.2	7.2	6.7
88Sr	0.001	0.003	5.6	5.3	4.0	5.1	5.0
95Mo	0.001	0.003	0.335	0.368	0.234	0.335	0.402
107Ag	0.001	0.003	0.091	0.083	0.053	0.121	0.136
111Cd	0.089	0.297	3.5	2.1	3.0	2.3	6.9
118Sn	0.023	0.077	0.818	0.487	0.373	0.675	0.407
121Sb	0.004	0.013	0.051	0.064	0.041	0.059	0.062
137Ba	0.001	0.003	34	49	22	33	34
202Hg	0.030	0.100	0.071	<0.030	0.035	0.050	0.064
205Tl	0.001	0.003	0.050	0.036	0.026	0.032	0.044
208Pb	0.003	0.010	0.353	0.413	0.210	0.232	0.324
238U	0.001	0.003	0.073	0.080	0.053	0.067	0.080

Notes:

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Teck Coal Limited
Tissue Analysis Results

			RG_FOUSH_INV-01_2022-12_N	RG_FOUSH_INV-02_2022-12_N	RG_FOUSH_INV-03_2022-12_N	RG_FOUSH_INV-04_2022-12_N	RG_FOUSH_INV-05_2022-12_N
Client ID							
Lab ID			166	167	168	169	170
Wet Weight (g)			0.5357	0.4716	0.5937	0.3248	0.3346
Dry Weight (g)			0.1063	0.0954	0.1292	0.0670	0.0747
Moisture (%)			80.2	79.8	78.2	79.4	77.7
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	1.8	2.0	1.5	9.2	1.9
11B	0.110	0.367	1.1	0.883	1.2	1.6	0.828
23Na	10	33	2,799	4,172	3,377	7,698	3,191
24Mg	0.132	0.440	1,374	1,693	1,474	1,778	1,530
27Al	0.079	0.263	651	468	716	1,315	443
31P	75	250	11,407	14,018	12,753	12,021	11,578
39K	7.2	24	6,830	10,716	8,522	9,437	9,343
44Ca	49	163	2,987	3,222	3,252	3,810	2,346
49Ti	0.001	0.003	62	42	57	92	44
51V	0.036	0.120	2.6	2.3	4.3	3.9	3.3
52Cr	0.209	0.697	8.3	5.0	8.1	11	6.2
55Mn	0.010	0.033	146	45	132	63	31
57Fe	1.0	3.3	3,629	2,786	6,721	5,662	4,338
59Co	0.021	0.070	1.0	0.448	0.648	1.1	0.557
60Ni	0.067	0.223	14	10	17	20	11
63Cu	0.023	0.077	13	15	16	16	14
66Zn	0.276	0.920	218	184	196	204	223
75As	0.395	1.3	0.829	0.789	1.5	1.1	0.908
77Se	0.494	1.6	5.7	6.1	6.5	6.7	6.4
88Sr	0.001	0.003	5.5	5.4	6.9	11	6.6
95Mo	0.001	0.003	0.268	0.301	0.368	0.268	0.234
107Ag	0.001	0.003	0.060	0.064	0.091	0.113	0.076
111Cd	0.089	0.297	1.2	1.8	1.4	2.8	1.1
118Sn	0.023	0.077	0.360	0.484	0.371	0.350	0.284
121Sb	0.004	0.013	0.073	0.074	0.117	0.103	0.060
137Ba	0.001	0.003	71	51	100	109	77
202Hg	0.030	0.100	0.043	0.039	0.046	0.064	0.043
205Tl	0.001	0.003	0.029	0.028	0.035	0.066	0.025
208Pb	0.003	0.010	0.301	0.326	0.494	0.616	0.439
238U	0.001	0.003	0.079	0.068	0.089	0.111	0.085

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_MP1_INV-01_2022-12_N	RG_MP1_INV-02_2022-12_N	RG_MP1_INV-03_2022-12_N	RG_MP1_INV-04_2022-12_N	RG_MP1_INV-05_2022-12_N
			Lab ID	171	172	173	174	175
			Wet Weight (g)	0.3389	0.4096	0.1702	0.4412	0.4422
			Dry Weight (g)	0.0979	0.0840	0.0312	0.1022	0.0879
			Moisture (%)	71.1	79.5	81.7	76.8	80.1
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	0.729	1.2	1.3	0.714	2.7	
11B	0.110	0.367	0.718	0.718	1.7	0.828	2.0	
23Na	10	33	3,041	3,718	2,637	2,717	5,114	
24Mg	0.132	0.440	1,206	1,278	1,265	1,274	1,688	
27Al	0.079	0.263	269	327	1,135	440	1,459	
31P	75	250	12,246	10,990	10,286	8,995	9,085	
39K	7.2	24	9,553	7,990	6,989	6,642	6,653	
44Ca	49	163	1,936	2,091	2,072	1,736	1,850	
49Ti	0.001	0.003	19	24	121	44	111	
51V	0.036	0.120	0.572	0.813	3.0	1.2	4.8	
52Cr	0.209	0.697	3.6	4.0	25	12	19	
55Mn	0.010	0.033	15	23	28	30	34	
57Fe	1.0	3.3	268	244	806	389	757	
59Co	0.021	0.070	0.351	0.509	1.3	0.666	1.4	
60Ni	0.067	0.223	5.5	6.3	33	14	23	
63Cu	0.023	0.077	13	15	14	12	14	
66Zn	0.276	0.920	151	187	147	150	170	
75As	0.395	1.3	0.987	0.632	0.632	0.592	0.553	
77Se	0.494	1.6	3.6	5.4	5.4	5.1	5.1	
88Sr	0.001	0.003	2.5	3.5	5.2	4.1	7.3	
95Mo	0.001	0.003	0.268	0.167	0.402	0.134	0.201	
107Ag	0.001	0.003	0.091	0.068	0.068	0.053	0.068	
111Cd	0.089	0.297	1.2	0.940	0.877	0.752	1.6	
118Sn	0.023	0.077	0.233	0.187	0.619	0.161	0.292	
121Sb	0.004	0.013	0.030	0.036	0.094	0.036	0.116	
137Ba	0.001	0.003	16	26	53	27	50	
202Hg	0.030	0.100	<0.030	<0.030	0.035	<0.030	0.064	
205Tl	0.001	0.003	0.021	0.021	0.047	0.019	0.066	
208Pb	0.003	0.010	0.190	0.291	0.638	0.268	0.588	
238U	0.001	0.003	0.026	0.030	0.089	0.036	0.088	

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Tissue Analysis Results

			RG_FODNGD_IN	RG_FODNGD_IN	RG_FODNGD_IN	RG_FODNGD_IN	RG_FODNGD_IN
Client ID			V-01_2022-12_N	V-02_2022-12_N	V-03_2022-12_N	V-04_2022-12_N	V-05_2022-12_N
Lab ID			176	177	178	179	180
Wet Weight (g)			0.4318	0.6090	0.2693	0.3296	0.2288
Dry Weight (g)			0.0895	0.1447	0.0423	0.0624	0.0486
Moisture (%)			79.3	76.2	84.3	81.1	78.8
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.046	0.153	1.1	1.5	5.3	1.9	2.4
11B	0.110	0.367	1.0	1.6	2.2	2.1	2.7
23Na	10	33	3,543	3,794	11,448	4,522	4,185
24Mg	0.132	0.440	1,152	1,034	2,006	1,687	1,575
27Al	0.079	0.263	344	751	813	699	1,180
31P	75	250	11,119	11,127	14,747	14,487	12,259
39K	7.2	24	8,433	8,636	12,131	12,631	11,833
44Ca	49	163	2,430	1,684	4,271	3,722	3,446
49Ti	0.001	0.003	28	52	62	50	84
51V	0.036	0.120	0.892	1.6	2.3	1.8	3.4
52Cr	0.209	0.697	6.8	6.7	20	9.7	22
55Mn	0.010	0.033	19	50	45	33	40
57Fe	1.0	3.3	235	365	595	403	735
59Co	0.021	0.070	0.739	1.9	2.1	1.8	4.5
60Ni	0.067	0.223	10	12	37	19	40
63Cu	0.023	0.077	15	14	21	23	21
66Zn	0.276	0.920	137	179	242	309	293
75As	0.395	1.3	0.888	0.908	1.2	1.1	1.4
77Se	0.494	1.6	4.1	8.2	7.1	7.2	6.0
88Sr	0.001	0.003	3.2	2.9	5.9	5.5	5.9
95Mo	0.001	0.003	0.167	0.485	0.444	0.333	0.333
107Ag	0.001	0.003	0.060	0.060	0.227	0.151	0.113
111Cd	0.089	0.297	0.971	2.0	4.1	3.6	3.7
118Sn	0.023	0.077	0.352	0.253	0.436	0.579	0.567
121Sb	0.004	0.013	0.035	0.053	0.061	0.053	0.086
137Ba	0.001	0.003	21	33	34	41	42
202Hg	0.030	0.100	<0.030	0.043	0.070	0.059	0.056
205Tl	0.001	0.003	0.021	0.033	0.053	0.032	0.033
208Pb	0.003	0.010	0.157	0.409	0.320	0.296	0.380
238U	0.001	0.003	0.037	0.068	0.073	0.084	0.091

Notes:

- ppm = parts per million
- DL = detection limit
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- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_FOBKS_INV- 01_2022-11_N	RG_FOBKS_INV- 02_2022-11_N	RG_FOBKS_INV- 03_2022-11_N	RG_FOBKS_INV- 04_2022-11_N	RG_FOBKS_INV- 05_2022-11_N
Client ID							
Lab ID			022	023	024	025	026
Wet Weight (g)			0.8675	0.7267	1.0038	0.9528	0.6373
Dry Weight (g)			0.1589	0.1333	0.1684	0.2182	0.1041
Moisture (%)			81.7	81.7	83.2	77.1	83.7
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.020	0.067	1.7	1.7	5.3	1.2	1.3
11B	0.112	0.373	1.6	0.689	1.0	0.378	0.711
23Na	3.4	11	4,116	2,635	6,996	3,586	3,205
24Mg	0.085	0.283	1,607	778	1,655	1,198	1,374
27Al	0.084	0.280	794	268	433	152	315
31P	94	313	13,360	7,273	10,523	10,846	10,649
39K	1.7	5.7	9,731	4,454	9,876	6,915	6,795
44Ca	3.7	12	10,780	3,044	5,067	3,333	5,000
49Ti	0.001	0.003	48	19	28	8.0	25
51V	0.036	0.120	1.4	0.562	0.935	0.310	0.706
52Cr	0.041	0.137	9.8	4.2	4.4	2.9	5.1
55Mn	0.008	0.027	50	19	51	69	29
57Fe	0.569	1.9	563	221	360	163	264
59Co	0.018	0.060	0.800	0.351	0.773	0.395	0.501
60Ni	0.052	0.173	23	8.2	15	8.6	10
63Cu	0.020	0.067	27	12	19	16	22
66Zn	0.164	0.547	356	135	205	180	288
75As	0.298	0.993	1.0	0.347	0.710	0.347	0.379
77Se	0.373	1.2	5.5	3.0	5.2	4.3	7.3
88Sr	0.001	0.003	9.8	3.1	5.0	2.9	4.9
95Mo	0.001	0.003	0.542	0.339	0.429	0.203	0.339
107Ag	0.001	0.003	0.209	0.108	0.162	0.101	0.173
111Cd	0.079	0.263	1.8	1.4	1.5	0.420	0.979
118Sn	0.015	0.050	0.600	0.197	0.510	0.158	0.435
121Sb	0.003	0.010	0.066	0.026	0.040	0.026	0.033
137Ba	0.001	0.003	51	14	28	15	23
202Hg	0.021	0.070	0.028	0.028	0.031	0.028	0.034
205Tl	0.001	0.003	0.024	0.009	0.021	0.009	0.014
208Pb	0.001	0.003	0.276	0.077	0.154	0.059	0.114
238U	0.001	0.003	0.111	0.034	0.071	0.036	0.059

Notes:

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- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_SCOUTDS_IN	RG_SCOUTDS_IN	RG_SCOUTDS_IN	RG_SCOUTDS_IN	RG_SCOUTDS_IN
Client ID			V-1_2022-11_N	V-2_2022-11_N	V-3_2022-11_N	V-4_2022-11_N	V-5_2022-11_N
Lab ID			027	028	029	030	031
Wet Weight (g)			0.9720	1.4871	1.2021	1.5607	1.2298
Dry Weight (g)			0.2241	0.3189	0.2375	0.3623	0.2614
Moisture (%)			76.9	78.6	80.2	76.8	78.7
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.020	0.067	0.902	1.2	0.607	1.6	0.844
11B	0.112	0.373	0.845	0.934	0.400	0.435	0.490
23Na	3.4	11	2,942	4,139	2,533	6,327	4,288
24Mg	0.085	0.283	1,436	1,612	1,379	1,923	2,474
27Al	0.084	0.280	450	463	228	147	216
31P	94	313	11,668	12,243	10,171	14,490	16,153
39K	1.7	5.7	7,579	9,413	6,591	10,742	9,837
44Ca	3.7	12	2,980	3,546	2,607	3,348	4,030
49Ti	0.001	0.003	30	32	12	8.5	16
51V	0.036	0.120	0.843	0.758	0.425	0.298	0.398
52Cr	0.041	0.137	4.1	3.0	3.4	3.3	3.3
55Mn	0.008	0.027	97	122	25	43	38
57Fe	0.569	1.9	464	436	216	220	266
59Co	0.018	0.060	0.681	0.861	0.299	0.547	0.588
60Ni	0.052	0.173	9.9	10	6.6	6.5	6.4
63Cu	0.020	0.067	10	12	11	17	17
66Zn	0.164	0.547	166	240	169	260	370
75As	0.298	0.993	0.315	0.316	<0.298	<0.298	<0.298
77Se	0.373	1.2	6.2	6.2	5.7	8.9	6.3
88Sr	0.001	0.003	3.4	3.9	2.6	3.5	4.4
95Mo	0.001	0.003	0.294	0.271	0.249	0.348	0.261
107Ag	0.001	0.003	0.058	0.065	0.065	0.115	0.094
111Cd	0.079	0.263	1.0	0.979	1.4	1.5	1.1
118Sn	0.015	0.050	0.434	0.452	0.339	0.272	0.681
121Sb	0.003	0.010	0.025	0.029	0.015	0.030	0.026
137Ba	0.001	0.003	20	29	10	11	14
202Hg	0.021	0.070	0.022	<0.021	<0.021	0.043	0.022
205Tl	0.001	0.003	0.013	0.014	0.011	0.014	0.011
208Pb	0.001	0.003	0.129	0.129	0.059	0.064	0.070
238U	0.001	0.003	0.044	0.059	0.047	0.036	0.040

Notes:

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- LOQ = limit of quantitation
- < = less than detection limit
- g = grams
- % = percent

Teck Coal Limited
Tissue Analysis Results

			RG_FOBSC_INV- 1_2022-11_N	RG_FOBSC_INV- 2_2022-11_N	RG_FOBSC_INV- 3_2022-11_N	RG_FOBSC_INV- 4_2022-11_N	RG_FOBSC_INV- 5_2022-11_N
Client ID							
Lab ID			032	033	034	035	036
Wet Weight (g)			1.4774	1.3515	1.0890	1.8495	1.7863
Dry Weight (g)			0.3751	0.3164	0.2425	0.3584	0.3644
Moisture (%)			74.6	76.6	77.7	80.6	79.6
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.020	0.067	0.663	0.721	0.518	1.4	0.650
11B	0.112	0.373	0.381	0.381	0.299	0.544	0.272
23Na	3.4	11	3,189	2,936	2,292	6,148	3,378
24Mg	0.085	0.283	953	1,146	1,809	1,573	1,303
27Al	0.084	0.280	128	179	123	192	127
31P	94	313	8,835	9,372	14,114	14,866	12,291
39K	1.7	5.7	5,419	6,953	8,582	12,398	7,646
44Ca	3.7	12	1,290	1,589	2,046	2,422	2,329
49Ti	0.001	0.003	8.5	11	7.3	11	7.1
51V	0.036	0.120	0.272	0.321	0.252	0.275	0.237
52Cr	0.041	0.137	2.1	2.0	2.1	2.2	2.4
55Mn	0.008	0.027	87	67	49	52	25
57Fe	0.569	1.9	159	218	153	215	156
59Co	0.018	0.060	0.567	0.643	0.294	0.380	0.304
60Ni	0.052	0.173	6.0	9.0	4.3	9.0	6.8
63Cu	0.020	0.067	9.0	9.3	11	11	11
66Zn	0.164	0.547	129	131	158	156	185
75As	0.298	0.993	<0.298	<0.298	<0.298	<0.298	<0.298
77Se	0.373	1.2	5.9	6.8	4.6	6.8	6.1
88Sr	0.001	0.003	1.4	1.9	1.9	2.7	2.4
95Mo	0.001	0.003	0.261	0.290	0.319	0.392	0.246
107Ag	0.001	0.003	0.043	0.043	0.040	0.036	0.043
111Cd	0.079	0.263	0.470	0.840	0.939	0.692	0.643
118Sn	0.015	0.050	0.158	0.178	0.259	0.340	0.228
121Sb	0.003	0.010	0.018	0.026	0.014	0.026	0.015
137Ba	0.001	0.003	9.3	10	7.0	12	9.3
202Hg	0.021	0.070	<0.021	<0.021	0.022	<0.021	0.025
205Tl	0.001	0.003	0.011	0.012	0.009	0.016	0.009
208Pb	0.001	0.003	0.054	0.062	0.037	0.062	0.045
238U	0.001	0.003	0.017	0.034	0.026	0.048	0.034

Notes:

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Teck Coal Limited
Tissue Analysis Results

			Client ID	RG_FO22_INV- 1_2022-11_N	RG_FO22_INV- 2_2022-11_N	RG_FO22_INV- 3_2022-11_N	RG_FO22_INV- 4_2022-11_N	RG_FO22_INV- 5_2022-11_N
			Lab ID	037	038	039	040	041
			Wet Weight (g)	1.4099	1.6424	2.6222	1.5290	1.1200
			Dry Weight (g)	0.2657	0.3161	0.4930	0.3591	0.2455
			Moisture (%)	81.2	80.8	81.2	76.5	78.1
Parameter	DL (ppm)	LOQ (ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
7Li	0.020	0.067	1.0	0.976	1.6	0.545	0.307	
11B	0.112	0.373	1.3	1.2	1.4	0.871	0.490	
23Na	3.4	11	4,144	6,601	5,730	3,067	2,429	
24Mg	0.085	0.283	1,141	1,449	1,428	1,559	974	
27Al	0.084	0.280	929	296	609	246	149	
31P	94	313	9,478	11,303	10,414	12,955	7,364	
39K	1.7	5.7	7,883	11,797	11,167	8,688	6,796	
44Ca	3.7	12	1,708	1,560	2,173	2,426	1,471	
49Ti	0.001	0.003	75	21	52	20	9.6	
51V	0.036	0.120	1.6	0.777	1.3	0.543	0.386	
52Cr	0.041	0.137	4.4	3.5	3.0	3.2	2.8	
55Mn	0.008	0.027	46	56	55	38	41	
57Fe	0.569	1.9	787	459	529	385	342	
59Co	0.018	0.060	0.360	0.426	0.395	0.294	0.142	
60Ni	0.052	0.173	5.8	9.2	7.3	5.2	2.8	
63Cu	0.020	0.067	9.4	13	10	16	9.8	
66Zn	0.164	0.547	86	89	97	151	116	
75As	0.298	0.993	0.391	0.746	0.711	0.426	<0.298	
77Se	0.373	1.2	5.7	8.1	6.4	5.7	4.4	
88Sr	0.001	0.003	2.8	2.1	2.7	2.9	2.3	
95Mo	0.001	0.003	0.261	0.319	0.261	0.203	0.087	
107Ag	0.001	0.003	0.050	0.054	0.068	0.108	0.050	
111Cd	0.079	0.263	0.346	0.494	0.544	0.568	0.346	
118Sn	0.015	0.050	0.134	0.173	0.273	0.334	0.159	
121Sb	0.003	0.010	0.048	0.052	0.055	0.025	0.013	
137Ba	0.001	0.003	26	16	21	15	15	
202Hg	0.021	0.070	0.025	0.025	<0.021	<0.021	<0.021	
205Tl	0.001	0.003	0.016	0.015	0.016	0.009	0.007	
208Pb	0.001	0.003	0.292	0.241	0.310	0.135	0.106	
238U	0.001	0.003	0.052	0.038	0.058	0.036	0.022	

Notes:

- ppm = parts per million
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- < = less than detection limit
- g = grams
- % = percent

APPENDIX

APPENDED REPORTS



**Summary of Henretta Lake
Temperature-Oxygen Data and
Risk to Westslope Cutthroat Trout**

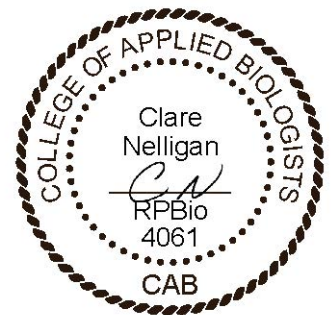
Prepared for:
Teck Coal Limited
Sparwood, British Columbia

Prepared by:
Minnow Environmental Inc.
Georgetown, Ontario

November 2022

Summary of Henretta Lake Temperature-Oxygen Data and Risk to Westslope Cutthroat Trout

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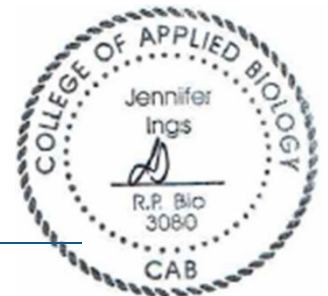


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APPENDIX A 2022 WATER CHEMISTRY DATA



1 INTRODUCTION

1.1 Background

In 2019 an assessment of the population of Westslope Cutthroat Trout (*Oncorhynchus clarkii lewisi*; WCT) within the Upper Fording River (UFR) indicated that a significant decline of sub-adult, adult, and juveniles occurred between 2017 and 2019 (Cope 2020). During this period, the juvenile and sub-adult/adult WCT are predicted to have been reduced by 74% and 93%, respectively (Cope 2020, EOC Team 2021). The limited availability of suitable overwintering habitat was identified as one of the stressors to the UFR WCT population that contributed to the population decline (EOC Team 2021). As long-term options are being developed through a Recovery Action Plan to address overwintering habitat and other issues affecting the population, there is concern that cold temperatures, decreased snowpack, or low flows during the winter could potentially result in further population losses by reducing the concentration of dissolved oxygen (DO) within overwintering habitat. Consequently, we have completed an evaluation of the risk to WCT in Henretta Lake and have identified what data is missing to help determine risk.

1.2 Henretta Lake and Overwintering Habitat

Henretta Lake is an online lentic habitat within Henretta Creek that was built as part of the lower Henretta Valley watershed reclamation during the mid-1990's (Pumphrey 2002) and has been identified as providing important overwintering habitat for WCT in the UFR (Cope et al. 2016). Since its construction, the feature has undergone significant morphological change, most notably the realignment of its inlet channel following the 2013 flood and a suspected reduction in average depth as a result of ongoing sediment deposition. Currently, the feature is an approximately 2.3-hectare lake with an average depth of 4.1 m and a maximum depth of 9.7 m (Teck 2021).

While Henretta Lake does provide good overwintering habitat for the WCT population in the UFR watershed (Cope et al. 2016), there is some risk associated with fish use of lakes in general. Concentrations of DO typically decrease over the winter as ice cover prevents gas exchange with the atmosphere and thus, the reoxygenation of the water column. In a lake system such as Henretta Lake, longer and earlier ice cover (e.g., Flaim et al. 2020, Zdorovenova et al. 2021), delayed ice off (Couture et al. 2015), incomplete overturn prior to ice formation (Wiltse et al. 2020), and/or enhanced biological or chemical oxygen demand (Wetzel 2001), can increase the risk of hypoxic or anoxic conditions at the bottom of the water column during the winter. Although the literature review conducted as part of the Evaluation of Cause found few cases of hypoxia-induced winterkill among trout populations and none to WCT (Ecofish 2021), prolonged hypoxia can result in other metabolic stresses to fish (e.g., reduced growth and food consumption; Rosenfeld 2022).



In addition to the risk posed by low DO concentrations, ice-covered lakes inversely stratify during the winter, with colder temperatures near the lake surface and approximately 4 °C water at the lake bottom. While temperatures below 2 °C are not unsuitable for overwintering adult WCT and are typical during the winter in the mainstem of the UFR, fry and small juveniles can be at risk if they have not grown enough to withstand metabolic deficits at low winter temperatures (Cunjak and Power 1987). The combined influences of low DO near the lake bottom and temperatures below 2 °C near the lake surface can reduce the availability of high-quality winter habitat and may pose additional indirect stressors to the WCT population (such as increased competition for resources; Ficke et al. 2007)

1.3 Objectives

This report provides a review of temperature and dissolved oxygen data collected in Henretta Lake between 2016 and 2022, with the specific focus of characterizing risk to Westslope Cutthroat Trout (WCT). The objectives of this review include:

1. Summarizing the oxythermal conditions in Henretta Lake using available *in situ* water quality data;
2. Identifying if current winter conditions present a risk to the Henretta Lake WCT population based on temperature-oxygen tolerances;
3. Outlining existing data gaps and providing recommendations to address these gaps.



2 FIELD DATA COLLECTION SUMMARY

2.1 Overview

Monitoring of Henretta Lake was conducted in the Winter of 2022 by Lotic Environmental to better characterize overwintering conditions. Continuous monitoring has also taken place within Henretta Lake during the Spring and Summer of 2022¹. Prior to 2022, monitoring of the physical and chemical characteristics of overwintering habitat (e.g., temperature, DO, conductivity) in Henretta Lake was infrequent, with winter field campaigns typically occurring as a snap-shot assessment involving multiple temperature-oxygen profiles collected on a single day.

2.2 Henretta Lake

Data collection varied in Henretta Lake between 2016 and 2022 with respect to the parameters collected, the temporal frequency of *in situ* measures, the depth interval at which data was collected, and the number of locations within Henretta lake that were assessed. The sampling completed in Henretta Lake included:

- 2016 – One temperature-oxygen profile was collected on February 22nd from nine locations within the lake. *In situ* measures of temperature, pressure, DO, conductivity, and pH were also collected at the lake inlet.
- 2020 – One temperature-oxygen profile was collected on February 27th from eight locations within the lake.
- 2021 – Temperature-oxygen profiles were collected on three dates in February. The profiles on February 12th (from three stations) and 14th (from four stations) were conducted to a maximum depth of 4 m. The final profiles were collected on February 17th (from nine station) to a maximum depth of 7 m. One profile was collected at each station, and supporting *in situ* measures of specific conductance, conductivity, pH and ORP were also collected.
- 2022 – *In situ* water quality profiles collected at 11 locations once a month in January, February, and March using a YSI PRODSS sonde (Brooks et al 2022). Measures were recorded at 0.5-m intervals under the ice with sampling areas ranging in depth from 1.0 to 8.5 m. Following ice out, a vertical chain of HOBO data loggers was installed to collect measures of temperature, oxygen, and conductivity at 6 depths in the water column (1.25 m, 2.5 m, 3.75 m, 5.0 m, 6.25 m, and 7.5 m). The loggers were deployed in May 2022 with the first data download occurring at the end of June 2022. Additional data

¹ The preliminary results of the summer sampling program have been incorporated as appropriate.



downloads occurred at end of August, September, and October 2022. On November 4, 2022, a sub-surface vertical chain of *in situ* loggers was deployed for the duration of the winter (i.e., the next time data will be retrieved from the deployment will be after ice-off in 2023). Water chemistry samples were also collected in February, March, June, and October² of 2022 for analysis of metals, nutrients, and major ions from three areas in Henretta Lake and at three depths (1.0 m, 3.5 m, and 7.5 m).

² Water chemistry data collected in October 2022 were not included in this report.



3 TEMPERATURE-OXYGEN DATA REVIEW

Temperature-oxygen profiles collected in February 2016 revealed that the water column was well oxygenated. Concentrations of DO in the top 7 m of the water column were above 7 mg/L in all sampling areas in 2016, and only one DO measure was below the recommended 5 mg/L DO criteria for the protection of aquatic life (recorded at a depth of 8.2 m). In 2020, all DO measures within Henretta Lake were greater than 10 mg/L. Interestingly, in both 2016 and 2020 the lake was not inversely stratified (i.e., warmer temperatures were observed at shallower depths).

During the winter of 2022, the water column of Henretta Lake was inversely stratified with the thermocline occurring at a depth of approximately 3 m in January and February. The top 3 m of the water column were well oxygenated during all sampling events (ranging between 8 and 10 mg/L); however, DO decreased abruptly below this depth to near anoxic conditions at the lake bottom. In January, DO concentrations decreased to below the critical threshold of 5 mg/L for the protection of aquatic life (BC MOE 1997) at depths below 3.5 m and decreased to < 2 mg/L at depth below than 5 m. In February and March, DO concentrations were typically < 1 mg/L below a depth of 5.5 m. The 2022 winter monitoring results are consistent with water quality profiles that were collected in February of 2021. Concentrations of DO from three site visits in 2021 documented near anoxic conditions typically below a depth of 4 m (Teck 2021). These data suggest there was a reduction in the amount of oxygenated WCT overwintering habitat in both 2021 and 2022 relative to 2016 and 2020; however, the amount (i.e., volume) of optimal WCT habitat within Henretta will be more accurately estimated following the detailed bathymetric survey that was conducted in November 2022.

The data-logger deployment in Henretta Lake in May 2022 presented unusual temporal and vertical trends in temperature and oxygen within the lake (Brooks et al. 2022), that were atypical of expected conditions following ice-out (Wetzel 2001). Specifically, the warmest temperatures, highest DO concentrations, and highest measures of conductivity were present at the bottom of Henretta Lake (at a depth of 7.5). In addition, measures of temperature and concentrations of DO increased over the month of May below a depth of 6.25 m, whereas the overlying water remained relatively well mixed. These unusual oxythermal dynamics may be indicative of a high-density water source, such as a groundwater intrusion, that would sink under the well-mixed epilimnion and result in isolated effects to hypolimnetic water quality. The atypical oxythermal regime was somewhat transient during early spring as an incomplete mixing effect occurred in the top 6 m of the water column between May 27th and 29th, 2022, and a full mixing event occurred between June 5th and 6th, 2022. The complete water column presented with uniform measures of temperature, oxygen, and conductivity following the June mixing event.



Large diel oscillations in oxygen concentrations were also recorded in Henretta Lake during May and June of 2022, which may be the result of diurnal fluctuations in photosynthesis and respiration, sediment oxygen demand, and/or variability in DO concentrations from groundwater sources. Throughout the logger deployment, DO concentrations only decreased to below 5 mg/L on 6 days out of the 55-day monitoring period, and only at a depth of 6.25 m. This suggests that hypoxia is not a concern for WCT populations following ice-out. In addition, the unique observation of warmer more oxygen-rich water near the lake bottom that occurred over the month of May had the potential to provide deep-water refuge for WCT in the spring immediately following ice off.

The temperature, oxygen, and conductivity data from July to October (summarized below) are presented in Brooks et al. 2022b, Brooks and Gordon 2022, and Brooks and Gordon 2022b. During July and August, temperatures at all logger depths warmed in Henretta Lake following the June mixing event (data presented in Brooks et al. 2022b). By early August, distinctly warmer temperatures were typically observed at a depth of 6.25 m relative to shallower loggers (temperatures logged at 1.25-m depth were only periodically above those observed at 6.25-m depth). Moving into September, temperatures at 6.25-m and 7.5-m depth were higher than rest of the water column above, with temperatures at 6.25-m depth slightly warmer than those measured at 7.5-m depth (data presented in Brooks and Gordon 2022). This phenomenon persisted until the last data download, at the end of October, despite cooling water temperatures measured at the lakes surface to a depth of 5 m (data presented in Brooks and Gordon 2022b).

The DO concentration data collected during July and August had increasingly large diel ranges which may have been the result of biofouling of the DO sensor. Following this result, copper cages were installed around the sensor to minimize algal growth and interference with the DO measures. Interestingly, September concentrations of DO were highest (and appear to be supersaturated) at a depth of 6.25 m. Warmer, more-oxygenated water at depth persisted into October, with DO concentrations eventually decreasing at a depth of 6.25-m to become more similar to the rest of the water column. During this period, the DO logger at a depth of 7.5 m was buried in the sediment and thus data associated with this logger was not interpreted.

Similar to conditions observed in early May, conductivity was highest at 6.25-m and 7.5-m depth. Conductivity progressively increased at the two bottom-most depth starting in mid-July and persisted until the final data download at the end of October. Collectively, warmer, more-oxygenated, and high-conductivity water observed in the bottom strata of Henretta Lake is suggestive of continued influence throughout the growing season. Logger data from the winter of 2023 will help to inform the dynamics of this water layer under ice.



Water chemistry samples were collected in Henretta Lake from three locations and at three depths (1 m, 3.5 m, and 7 m) in June 2022 (Appendix Table A.1). The average concentration of total phosphorus was 5.0 µg/L and the average concentration of nitrate was 1.86 mg/L with only subtle differences in concentrations observed between depths. These data suggest Henretta Lake is phosphorus limited and was well mixed during the June sampling event. Water chemistry was also collected during the winter of 2022 (four locations in February and 1 location in March) at the same three discrete depths in the water column. Total phosphorus concentrations were often below the 2 µg/L analytical detection limit during this period, and when detected, concentrations ranged from 2.2 to 26.8 µg/L. The highest total phosphorus concentration (26.8 µg/L) was detected in one sample at a depth of 7 m; however, concentrations in other areas of the lake at the same depth were much lower (ranging from below the analytical detection limit of 2 µg/L and 5.3 µg/L). Nitrate concentrations during the winter were elevated relative to summer conditions with an average surface concentration of 6.5 mg/L and an average bottom concentration of 26.6 mg/L in February.

In addition to nutrients, the concentrations of other water quality constituents also increased with depth in February 2022. Among constituents of interest (i.e., Order constituents and nickel), concentrations of nitrate, sulphate, total and dissolved cadmium, nickel, and selenium were highest in the water sample collected from 7-m depth (Appendix Figure A.1). Concentrations of sulphate and nickel also exceeded the Elk Valley Water Quality Plan (EVQWP) level 1 benchmark and level 1 interim screening value, respectively, at 7-m depth, and concentrations of nitrate exceeded the EVQWP level 1 benchmark at a depth of 4 m and the level 2 benchmark at a depth of 7 m. It is atypical to observe relatively higher concentrations of nitrate and sulphate under anoxic conditions (relative to the oxic surface waters) as nitrate should be reduced to ammonia and sulphate should be reduced to sulphide (Wetzel 2001). Concentrations of ammonia also increase with depth in February 2022 (Appendix Table A.1) and confirm anoxic conditions at depth in Henretta Lake. The water chemistry data, particularly nitrate and sulphate results, are further evidence of another input at depth in Henretta Lake.

The June water chemistry data had relatively consistent constituent concentrations with depth and were indicative of a well-mixed water column (Appendix Table A.2). These water chemistry data support the *in-situ* logger data which suggest a homogeneous water column following the early-June mixing event.



4 PRELIMINARY RISK ASSESSMENT

The preliminary data suggests that there is some risk to overwintering WCT in terms of the availability of suitable oxythermal habitat within Henretta Lake. Although concentrations of dissolved oxygen were lower at depth within Henretta Lake in 2021 and 2022 relative to observations in 2020 and 2016, there is still considerable area within the lake that has well oxygenated habitat at temperatures that are appropriate for overwintering WCT. Much of the appropriate habitat is found at the margins of the lake which is not of sufficient depth to stratify, and where fish can hold at the bed rather than being suspended in the upper water column.

Given the status of the population, there is value in continuing to sample in Henretta Lake to better understand risk to WCT as a result of potential seasonal decreases in well-oxygenated habitat. However, sampling should be tailored both in terms of the timing of surveys and the data that is collected to ensure that the highest risk to WCT is being characterized (i.e., sampling right before ice out), that the information is tailored to inform management decisions, and resources are being well allocated.



5 DATA GAPS AND RECOMMENDATIONS

5.1 Identified Data Gaps

Winter limnology is an area of emerging science that has traditionally been understudied as winter was often viewed as a “dormant” period of biological activity. As such, the complex interactions of abiotic and biotic factors that influence oxygen depletion during the winter are not well understood despite the known role under-ice processes play in shaping the physical and biological limnology during the ice-free season (Jansen et al. 2021).

In particular, primary production is poorly characterized in Henretta Lake, which prevents linkages being made between DO depletion and chemical/biological drivers. Algal growth is traditionally thought to be limited during winter months due to decreased light and external nutrient sources; however, anoxic conditions can enhance the release of bioavailable phosphorus (Nürnberg et al. 2019), which in turn, can promote growth of the under-ice phytoplankton community (Joung et al. 2017). High under-ice algal biomass has been documented even in areas where snow cover limits light penetration in the water column (Hampton et al. 2015). In a survey of temperate lakes, winter metrics of primary production were on average 43% of the values observed in summer (Hampton et al. 2017), suggesting that winter biomass may also drive hypolimnetic oxygen depletion under ice. Carry-over effects from the growing season may also have implications of winter DO depletion rates. Collectively, changes in primary production throughout the year may have profound consequences for lake oxygen dynamics and thus, habitat availability for fish (Ficke et al. 2007; Arend et al. 2011). Developing a better understanding of primary production in Henretta Lake also has broader implications for ecosystem health, and specifically the risk of selenium bioaccumulation for biota.

Understanding how temperature-oxygen dynamics is influenced by regional climate drivers is poorly understood in Henretta Lake. The concentration of DO in the hypolimnion at the onset of stratification is dependent on a variety of complex, and often interacting, physical and meteorological variables that include temperature, wind, fetch, and lake morphometry (Wetzel 2001, Smits et al. 2021). Regional air temperatures can indirectly influence hypolimnetic DO concentrations during the winter and summer when lakes are thermally stratified (Fang and Stefan 2009). Warmer air temperatures can result in reduced ice-cover (Preston et al. 2016, Sharma et al. 2021), promote earlier and longer stratification (Li et al. 2018, Richardson et al. 2017), and alter mixing regimes (Dugan et al. 2021), all of which can lead to longer or more severe periods of hypolimnetic DO depletion. Henretta Lake is typically well mixed during the summer; however, brief periods of stratification in shallow lakes can influence DO dynamics and result in temporary periods of anoxia or hypoxia (e.g., James 2017). Therefore, continued air



temperature increases and subsequent changes in ice phenology threaten to reduce the availability of optimal WCT habitat when the lake is stratified (particularly in the summer). Conducting an annual data review that pairs climate variables (i.e., air temperatures, wind speed, ice phenology) will aid in the interpretation of within lake temperature-oxygen profiles.

5.2 Recommendations

There are knowledge gaps identified through this temperature-oxygen data review that limit the development of strong conclusions with respect to WCT overwintering risk in Henretta Lake. While the goals of each specific data collection campaign may vary, it is important to determine if current monitoring can adequately detect change, identify potential stressors, and adapt to emerging issues. The following recommendations are provided to give direction on how to best improve routine monitoring and data analysis (with specific focus on risk to WCT):

1. There is uncertainty in the depth and spatial heterogeneity of DO and conductivity in Henretta Lake. We recommend continued use of the vertical data logger deployment within Henretta Lake to collect high-frequency *in situ* water quality data (for at least one calendar year upon which, sampling efforts should be reassessed). To improve understanding of the vertical and temporal extent of stratification conditions additional data loggers can be implemented (data loggers are currently at 1.25-m intervals throughout the water column). This would provide a high-frequency data set that could better characterize temperature-oxygen dynamics and vertical mixing patterns within the lake during both winter and summer. Henretta lake is ~8 m and thus it may be more susceptible to mid-summer mixing events; however, more summer data is needed to understand the mixing regime in this system. Due to the atypical hypolimnetic temperature-oxygen water mass observed in 2022, continued assessment of the data loggers from below 5 m depth would help to characterize the physical and chemical effects in Henretta Lake. To address any spatial variability in the lake we suggest continued collection of lake profiles using lowered probes consistent with data presented here-in. An evaluation of this spatial distributed data will help address any uncertainty.
2. To aid in identifying the drivers of oxygen demand in Henretta Lake (i.e., primary production, internal nutrient loading, etc.), we recommend sampling for nutrients and chlorophyll-a at key times throughout the year. Water samples should also be collected at multiple depths within the water column to evaluate the potential for internal nutrient loading during periods of anoxia. Understanding the influence of algal growth (in both the summer and winter) on oxygen depletion rates will help determine if biological factors may have contributed to the hypolimnetic winter anoxia observed in 2021



and 2022. In addition, characterizing aquatic primary production in Henretta Lake may provide further insights on the risk of selenium bioaccumulation in WCT.

3. To better characterize the influence of climate variables on temperature-oxygen dynamics in Henretta lake, we suggest conducting an annual climate data review. This would involve pairing air temperature and available ice records with the *in situ* temperature-oxygen data collected in Henretta Lake to better understand the influences of climate on WCT habitat quality. This would primarily be a desktop exercise but would enable a more complete interpretation of the data set (e.g., it would be possible to detect carry-over effects from year to year and identify if atypical results were correlated with climate anomalies). Further, we suggest continuing to log the ice-on and ice-off dates for the lake each year.
4. We recommend an annual assessment of WCT habitat quantity and quality. Potential metrics include oxythermal habitat volume, volume-weighted hypolimnetic oxygen concentrations, and/or anoxic factor (Nürnberg et al. 2019). Annually assessing these types of metrics integrates large amount of data into a single value, which can be tracked over time.
5. It is currently difficult to determine whether the stratification of Henretta Lake is a consequence of climatic and instream conditions, or if this process may be influenced by mining. If a lake could be identified that has similar characteristics (morphology, valley alignment, elevation, climate, biotic community, etc.), collecting data in this environment could inform our understanding of the mine's effect on Henretta Lake. Given the challenges associated with resource allocation and safety with collecting data at a reference site we would not suggest for it to be a frequent sampling location.



6 CONCLUSIONS

The recent monitoring of Henretta Lake in 2021 and 2022 suggests sub-optimal water temperature (near the lake surface) and DO conditions (near the lake bottom) are present during the winter, but the data does not suggest there is an acute risk to WCT. Conditions observed in 2021 and 2022 were inconsistent with previous winter monitoring conducted in 2020 and 2016, where the water column did not stratify and was well oxygenated. Key data gaps exist particularly with respect to what factors may have resulted in hypolimnetic anoxia observed in 2021 and 2022 (i.e., longer period of ice cover, incomplete fall mixing, enhanced primary production). To address this, we recommend expanding the sampling to include continuous *in situ* water quality data, the development of a sampling protocol to document primary production, the integration of climate variables in annual data review, the quantification of available oxythermal habitat, and the collection of data at a reference site.



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APPENDIX A
2022 WATER CHEMISTRY DATA

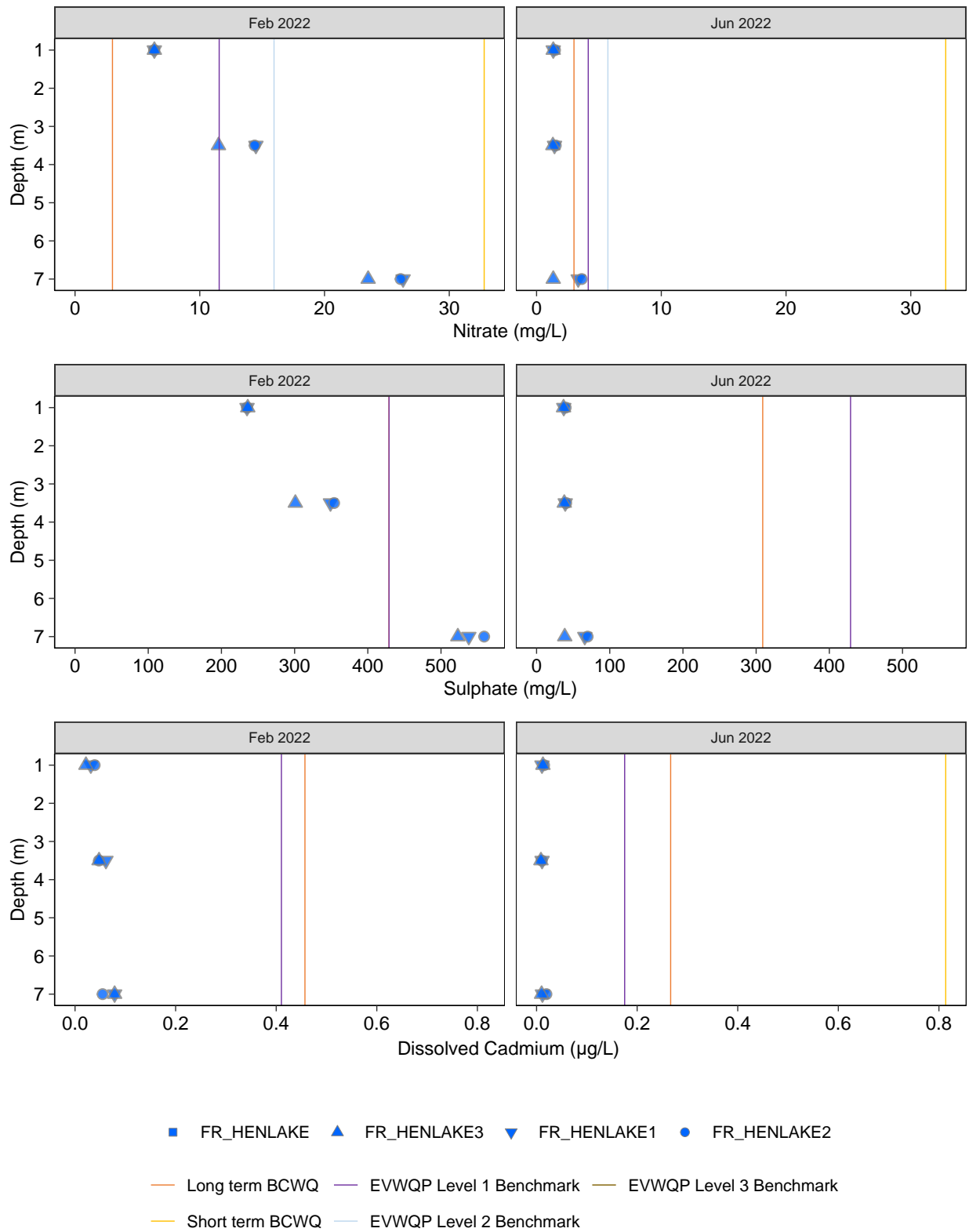


Figure A.1: Selected Water Quality Concentrations in Henretta Lake, 2021 to 2022

Note: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Selenium Speciation that had 100 % censored data were excluded from the analyses. Total Nickel benchmarks are interim screening values.

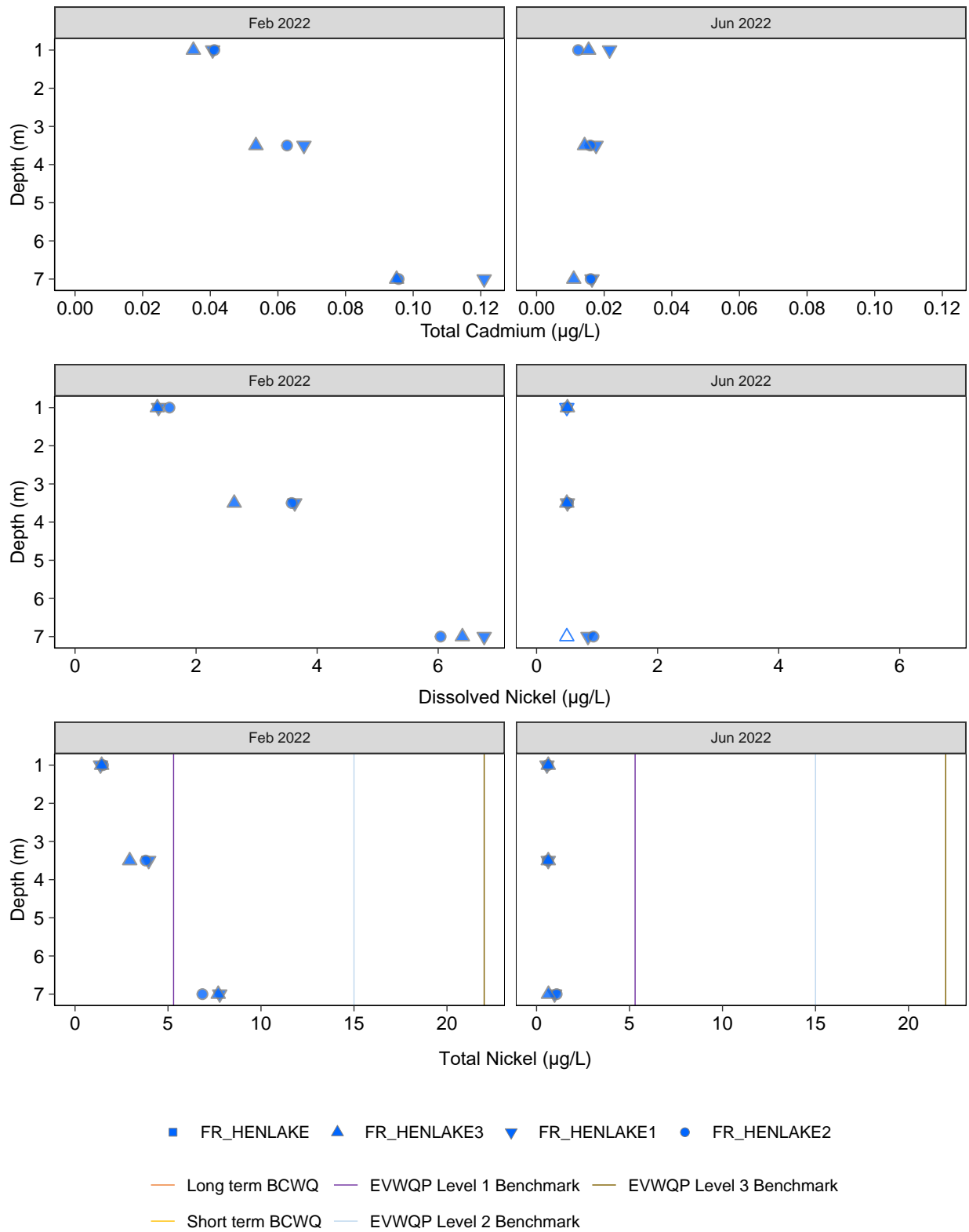


Figure A.1: Selected Water Quality Concentrations in Henretta Lake, 2021 to 2022

Note: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Selenium Speciation that had 100 % censored data were excluded from the analyses. Total Nickel benchmarks are interim screening values.

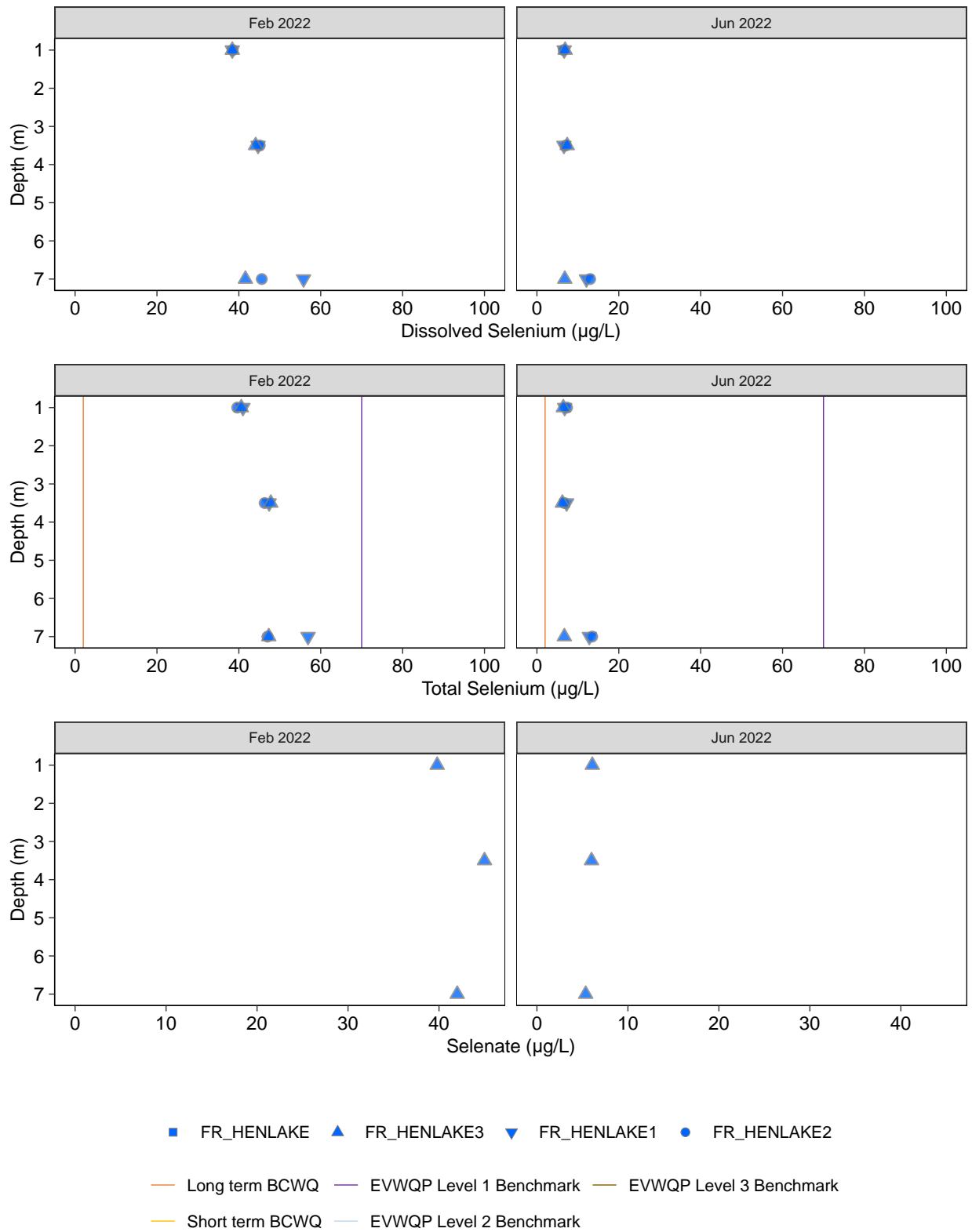


Figure A.1: Selected Water Quality Concentrations in Henretta Lake, 2021 to 2022

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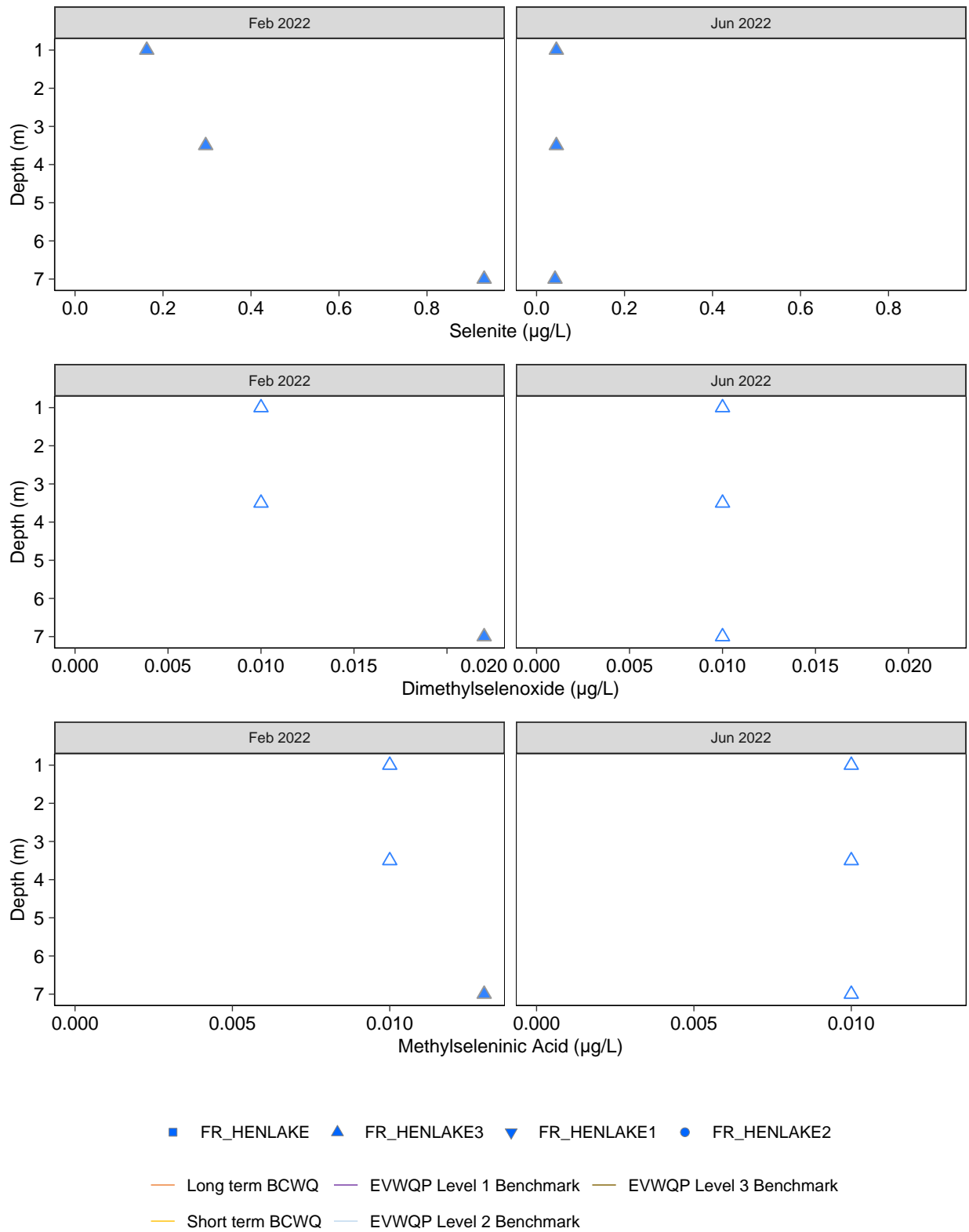


Figure A.1: Selected Water Quality Concentrations in Henretta Lake, 2021 to 2022

Note: Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL value. Selenium Speciation that had 100 % censored data were excluded from the analyses. Total Nickel benchmarks are interim screening values.

Table A.1: Henretta Lake Water Chemistry Data, Feb 2022

Parameter	Depth (m)/unit	FR_HENLAKE1			FR_HENLAKE2			FR_HENLAKE3		
		1	3.5	7	1	3.5	7	1	3.5	7
SeMe - Selenomethionine	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Se(VI) - Selenate	µg/L	-	-	-	-	-	-	39.8	45.0	42.0
Se(IV) - Selenite	µg/L	-	-	-	-	-	-	0.163	0.297	0.930
MeSe(IV) - Methylseleninic Acid	µg/L	-	-	-	-	-	-	<0.01	<0.01	0.0130
SeCN - Selenocyanate	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
DMSeO - Dimethylselenoxide	µg/L	-	-	-	-	-	-	<0.01	<0.01	0.0220
MeSe(VI) - Methaneselenonic Acid	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Hardness - Dissolved (as CaCO3)	mg/L	396	575	852	395	554	721	382	496	794
Selenium Unknown	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Selenosulfate	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Acidity (as CaCO3)	mg/L	3.40	6.90	8.90	2.90	4.80	10.2	3.20	5.10	9.50
Alkalinity, Bicarbonate (as CaCO3)	mg/L	156	195	249	161	190	259	159	183	262
Alkalinity, Carbonate (as CaCO3)	mg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity, Hydroxide (as CaCO3)	mg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity, Total (as CaCO3)	mg/L	156	195	249	161	190	259	159	183	262
Ammonia, Total (as N)	mg/L	0.0133	0.0710	0.169	0.0126	0.0641	0.264	0.0133	0.0428	0.330
Bromide (Br)	mg/L	<0.05	<0.25	<0.25	<0.05	<0.25	<0.25	<0.05	<0.05	<0.25
Chloride (Cl)	mg/L	0.360	0.570	0.760	0.380	0.600	0.830	0.370	0.430	0.870
Conductivity	us/cm	740	1,020	1,420	735	1,000	1,440	736	914	1,410
Dissolved Organic Carbon	mg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoride	mg/L	0.222	0.222	0.237	0.223	0.215	0.238	0.220	0.227	0.230
Nitrate (as N)	mg/L	6.36	14.5	26.3	6.35	14.4	26.1	6.36	11.5	23.5
Nitrite (as N)	mg/L	0.00390	0.0146	0.0268	0.00520	0.0136	0.0360	0.00460	0.00920	0.0312
ORP	mv	406	325	333	379	342	316	384	295	321
Orthophosphate	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
pH, Lab	ph units	8.01	7.82	7.68	8.02	7.87	7.66	8.02	7.90	7.66
Sulphate	mg/L	235	349	538	235	354	559	236	301	523
Total Dissolved Solids	mg/L	512	757	1,140	512	735	1,100	528	661	1,100
Total Kjeldahl Nitrogen	mg/L	0.318	0.467	0.517	0.463	0.197	<0.05	0.212	0.292	0.639
Total Organic Carbon	mg/L	<0.5	<0.5	0.540	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Suspended Solids	mg/L	<1	1.70	19.4	<1	<1	1.40	<1	<1	1.20
Turbidity, Lab	ntu	0.160	0.210	7.90	0.120	0.220	0.470	0.360	0.180	0.320
Aluminum (Al)-Total	mg/L	<0.003	<0.003	0.0978	<0.003	<0.003	0.0136	0.00430	<0.003	<0.003
Antimony (Sb)-Total	mg/L	0.000100	0.000150	0.000170	0.000100	0.000150	0.000150	0.000110	0.000140	0.000150
Arsenic (As)-Total	mg/L	0.000180	0.000230	0.000320	0.000200	0.000200	0.000260	0.000210	0.000210	0.000250
Barium (Ba)-Total	mg/L	0.0346	0.0300	0.0305	0.0329	0.0294	0.0348	0.0335	0.0322	0.0371
Beryllium (Be)-Total	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bismuth (Bi)-Total	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Boron (B)-Total	mg/L	0.0110	0.0170	0.0270	0.0100	0.0160	0.0220	<0.01	0.0150	0.0250
Cadmium (Cd)-Total	µg/L	0.0407	0.0677	0.121	0.0412	0.0627	0.0957	0.0350	0.0535	0.0951
Calcium (Ca)-Total	mg/L	102	132	190	95.0	129	169	101	125	194
Chromium (Cr)-Total	mg/L	0.000160	0.000280	0.000500	0.000140	0.000130	0.000260	0.000170	0.000140	0.000420
Cobalt (Co)-Total	µg/L	<0.1	0.180	0.560	<0.1	0.150	0.520	<0.1	0.120	0.450
Copper (Cu)-Total	mg/L	<0.0005	<0.0005	<0.0005	0.000600	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Iron (Fe)-Total	mg/L	<0.01	0.0320	0.266	<0.01	0.0290	0.0830	0.0120	0.0200	0.0510
Lead (Pb)-Total	mg/L	<0.00005	<0.00005	0.000132	0.0000590	<0.00005	<0.00005	<0.00005	<0.00005	0.0000620
Lithium (Li)-Total	mg/L	0.0173	0.0325	0.0535	0.0161	0.0303	0.0425	0.0169	0.0288	0.0482
Magnesium (Mg)-Total	mg/L	44.3	66.1	101	41.9	65.1	89.6	43.4	59.9	99.5
Manganese (Mn)-Total	mg/L	0.00989	0.0400	0.125	0.00908	0.0376	0.151	0.00943	0.0263	0.171
Mercury (Hg)-Total	mg/L	-	-	-	-	-	-	-	-	-
Mercury (Hg)-Total	µg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Molybdenum (Mo)-Total	mg/L	0.00107	0.00109	0.00115	0.000948	0.00109	0.00108	0.00103	0.00119	0.00118
Nickel (Ni)-Total	mg/L	0.00137	0.00396	0.00778	0.00150	0.00380	0.00685	0.00143	0.00294	0.00770
Phosphorus (P)-Total	mg/L	<0.002	0.00250	0.0268	<0.002	0.00220	0.00530	0.00270	<0.002	0.00400
Potassium (K)-Total	mg/L	1.26	2.15	3.23	1.20	2.09	2.79	1.23	1.89	3.04
Selenium (Se)-Total	µg/L	41.0	47.4	56.9	39.6	46.3	47.0	40.6	47.8	47.3
Silicon (Si)-Total	mg/L	1.59	1.75	2.32	1.56	1.71	2.26	1.59	1.74	2.51
Silver (Ag)-Total	mg/L	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Sodium (Na)-Total	mg/L	0.849	1.09	1.35	0.834	1.06	1.31	0.845	1.01	1.39
Strontium (Sr)-Total	mg/L	0.154	0.154	0.178	0.148	0.151	0.170	0.152	0.160	0.187
Thallium (Tl)-Total	mg/L	<0.00001	0.0000110	0.0000210	<0.00001	0.0000120	0.0000180	<0.00001	<0.00001	0.0000240
Tin (Sn)-Total	mg/L	<0.0001	<0.0001	<0.0001	0.000110	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Titanium (Ti)-Total	mg/L	<0.0003	<0.0003	<0.0024	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Uranium (U)-Total	mg/L	0.00186	0.00278	0.00431	0.00174	0.00265	0.00362	0.00185	0.00251	0.00432
Vanadium (V)-Total	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Zinc (Zn)-Total	mg/L	<0.003	0.00340	0.00780	0.00890	0.00530	0.00720	0.00320	0.00340	0.00810
Aluminum (Al)-Dissolved	mg/L	0.00100	<0.001	0.00100	0.00110	0.00110	<0.001	<0.001	0.00120	<0.001
Antimony (Sb)-Dissolved	mg/L	<0.0001	0.000140	0.000140	<0.0001	0.000140	0.000120	<0.0001	0.000110	0.000130
Arsenic (As)-Dissolved	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Barium (Ba)-Dissolved	mg/L	0.0338	0.0304	0.0306	0.0336	0.0299	0.0322	0.0331	0.0311	0.0345
Beryllium (Be)-Dissolved	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bismuth (Bi)-Dissolved	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Boron (B)-Dissolved	mg/L	<0.01	0.0170	0.0260	<0.01	0.0150	0.0200	<0.01	0.0140	0.0220
Cadmium (Cd)-Dissolved	µg/L	0.0314	0.0614	0.0787	0.0390	0.0475	0.0548	0.0217	0.0478	0.0787
Calcium (Ca)-Dissolved	mg/L	93.2	129	184	91.2	122	154	88.9	111	175
Chromium (Cr)-Dissolved	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	0.000150	<0.0001	<0.0001	<0.0001	<0.0001
Cobalt (Co)-Dissolved	mg/L	<0.0001	0.000150	0.000390	<0.0001	0.000140	0.000460	<0.0001	<0.0001	0.000370
Cobalt (Co)-Dissolved	µg/L	-	-	-	-	-	-	-	-	-
Copper (Cu)-Dissolved	mg/L	<0.0002	<0.0002	<0.0002	0.000600	0.000250	<0.0002	0.000220	0.000430	0.000210
Iron (Fe)-Dissolved	mg/L	<0.01	<0.01	0.0110	<0.01	0.0100	0.0250	<0.01	<0.01	0.0170
Lead (Pb)-Dissolved	mg/L	<0.00005	<0.00005	<0.00005	0.0000570	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Lithium (Li)-Dissolved	mg/L	0.0158	0.0334	0.0538	0.0161	0.0307	0.0410	0.0155	0.0264	0.0460
Magnesium (Mg)-Dissolved	mg/L	39.7	61.4	95.3	40.7	60.5	81.8	38.8	53.2	86.7
Manganese (Mn)-Dissolved	mg/L	0.00877	0.0376	0.112	0.00873	0.0353	0.138	0.00874	0.0228	0.155
Mercury (Hg)-Dissolved	mg/L	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005
Molybdenum (Mo)-Dissolved	mg/L	0.000961	0.00109	0.00108	0.000957	0.00106	0.00102	0.000921	0.00103	0.00103
Nickel (Ni)-Dissolved	mg/L	0.00138	0.00363	0.00676	0.00156	0.00358	0.00604	0.00136	0.00263	0.00640
Potassium (K)-Dissolved	mg/L	1.21	2.13	3.33	1.23	2.07	2.71	1.19	1.83	2.94
Selenium (Se)-Dissolved	µg/L	38.4	44.7	55.8	38.5	45.1	45.6	38.4	44.1	41.6
Silicon (Si)-Dissolved	mg/L	1.52	1.67	2.01	1.48	1.60	2.10	1.46	1.58	2.21
Silver (Ag)-Dissolved	mg/L	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Sodium (Na)-Dissolved	mg/L	0.838	1.11	1.40	0.858	1.08	1.25	0.823	0.977	1.34
Strontium (Sr)-Dissolved	mg/L	0.142	0.150	0.166	0.140	0.147	0.158	0.139	0.144	0.168
Thallium (Tl)-Dissolved	mg/L	<0.00001	0.0000140	0.0000190	<0.00001	<0.00001	0.0000150	<0.00001	<0.00001	0.0000190
Tin (Sn)-Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.000150	0.000120	<0.0001	<0.0001	<0.0001	<0.0001
Titanium (Ti)-Dissolved	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Uranium (U)-Dissolved	mg/L	0.00166	0.00252	0.00382	0.00164	0.00250	0.00316	0.00160	0.00218	0.00362
Vanadium (V)-Dissolved	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Zinc (Zn)-Dissolved	mg/L	0.00180	0.00410	0.00630	0.00970	0.00810	0.00610	0.00390	0.00430	0.00780

Table A.2: Henretta Lake Water Chemistry Data, June 2022

Parameter	Depth (m)/unit	FR_HENLAKE1			FR_HENLAKE2			FR_HENLAKE3		
		1	3.5	7	1	3.5	7	1	3.5	7
SeMe - Selenomethionine	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Se(VI) - Selenate	µg/L	-	-	-	-	-	-	6.09	6.00	5.36
Se(IV) - Selenite	µg/L	-	-	-	-	-	-	0.0450	0.0450	0.0420
MeSe(IV) - Methylseleninic Acid	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
SeCN - Selenocyanate	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
DMSeO - Dimethylselenoxide	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
MeSe(VI) - Methaneselenonic Acid	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Hardness - Dissolved (as CaCO3)	mg/L	139	143	185	146	147	186	137	138	140
Selenium Unknown	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Selenosulfate	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01
Acidity (as CaCO3)	mg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2
Alkalinity, Bicarbonate (as CaCO3)	mg/L	108	113	133	126	127	134	118	113	108
Alkalinity, Carbonate (as CaCO3)	mg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity, Hydroxide (as CaCO3)	mg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity, Total (as CaCO3)	mg/L	108	113	133	126	127	134	118	113	108
Ammonia, Total (as N)	mg/L	0.00640	0.00610	<0.005	<0.005	<0.005	0.00570	<0.005	<0.005	<0.005
Bromide (Br)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chloride (Cl)	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.100	<0.1	<0.1	<0.1
Conductivity	us/cm	267	270	344	270	272	356	261	264	267
Dissolved Organic Carbon	mg/L	1.63	1.79	1.85	2.00	1.64	1.12	1.22	1.18	1.25
Fluoride	mg/L	0.156	0.152	0.157	0.150	0.154	0.158	0.149	0.146	0.152
Nitrate (as N)	mg/L	1.34	1.44	3.34	1.48	1.54	3.62	1.34	1.31	1.34
Nitrite (as N)	mg/L	0.00140	0.00100	0.00160	<0.001	<0.001	<0.001	0.00460	0.0162	0.0181
ORP	mv	380	335	291	344	345	340	328	347	343
Orthophosphate	mg/L	0.00110	0.00110	<0.001	0.00170	<0.001	<0.001	0.00160	0.00210	0.00180
pH, Lab	ph units	7.63	7.66	7.75	7.65	7.70	7.74	7.70	6.91	7.80
Sulphate	mg/L	37.2	39.2	65.9	39.8	40.5	69.8	36.9	37.9	38.5
Total Dissolved Solids	mg/L	176	180	236	182	185	240	171	170	172
Total Kjeldahl Nitrogen	mg/L	0.101	0.139	0.361	0.319	0.230	0.322	0.171	0.146	0.131
Total Organic Carbon	mg/L	1.23	2.41	2.74	2.22	2.27	1.24	1.28	1.22	1.17
Total Suspended Solids	mg/L	3.40	2.90	2.30	3.20	3.30	5.50	3.60	3.40	2.90
Turbidity, Lab	ntu	2.64	2.76	2.80	2.94	3.32	3.19	2.89	3.03	2.72
Aluminum (Al)-Total	mg/L	0.0220	0.0231	0.0193	0.0239	0.0208	0.0258	0.0242	0.0226	0.0258
Antimony (Sb)-Total	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Arsenic (As)-Total	mg/L	0.000100	0.000110	0.000100	<0.0001	0.000120	0.000100	0.000120	0.000120	0.000120
Barium (Ba)-Total	mg/L	0.0178	0.0181	0.0176	0.0174	0.0175	0.0177	0.0170	0.0169	0.0174
Beryllium (Be)-Total	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bismuth (Bi)-Total	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Boron (B)-Total	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cadmium (Cd)-Total	µg/L	0.0216	0.0176	0.0164	0.0123	0.0159	0.0160	0.0154	0.0142	0.0110
Calcium (Ca)-Total	mg/L	39.1	39.1	46.0	39.3	40.0	48.8	38.7	38.5	39.6
Chromium (Cr)-Total	mg/L	0.000130	0.000160	0.000190	0.000140	0.000140	0.000170	0.000160	0.000110	0.000150
Cobalt (Co)-Total	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Copper (Cu)-Total	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Iron (Fe)-Total	mg/L	0.0200	0.0180	0.0190	0.0210	0.0190	0.0300	0.0200	0.0240	0.0220
Lead (Pb)-Total	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0000560	<0.00005
Lithium (Li)-Total	mg/L	0.00440	0.00460	0.00880	0.00450	0.00460	0.00930	0.00410	0.00420	0.00440
Magnesium (Mg)-Total	mg/L	12.1	12.3	17.7	12.4	12.2	18.8	12.0	11.6	12.7
Manganese (Mn)-Total	mg/L	0.00265	0.00266	0.00325	0.00284	0.00279	0.00450	0.00248	0.00274	0.00278
Mercury (Hg)-Total	mg/L	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005
Mercury (Hg)-Total	µg/L	-	-	-	-	-	-	-	-	-
Molybdenum (Mo)-Total	mg/L	0.000519	0.000616	0.000598	0.000538	0.000594	0.000588	0.000557	0.000516	0.000594
Nickel (Ni)-Total	mg/L	0.000560	0.000630	0.000970	0.000600	0.000600	0.00108	0.000630	0.000630	0.000640
Phosphorus (P)-Total	mg/L	0.00540	0.00480	0.00440	0.00500	0.00600	0.00560	0.00560	0.00580	0.00270
Potassium (K)-Total	mg/L	0.419	0.448	0.629	0.427	0.427	0.631	0.403	0.397	0.423
Selenium (Se)-Total	µg/L	6.78	7.26	12.8	7.36	6.73	13.5	6.45	6.22	6.70
Silicon (Si)-Total	mg/L	1.38	1.37	1.35	1.39	1.38	1.37	1.34	1.29	1.37
Silver (Ag)-Total	mg/L	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Sodium (Na)-Total	mg/L	0.365	0.369	0.416	0.369	0.362	0.418	0.357	0.347	0.366
Strontium (Sr)-Total	mg/L	0.0658	0.0681	0.0724	0.0671	0.0668	0.0730	0.0672	0.0647	0.0679
Thallium (Tl)-Total	mg/L	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Tin (Sn)-Total	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Titanium (Ti)-Total	mg/L	<0.0006	0.000430	<0.0003	<0.0006	<0.0003	<0.0006	<0.0006	<0.0003	0.000390
Uranium (U)-Total	mg/L	0.000589	0.000613	0.000824	0.000611	0.000621	0.000856	0.000577	0.000574	0.000602
Vanadium (V)-Total	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Zinc (Zn)-Total	mg/L	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Aluminum (Al)-Dissolved	mg/L	0.00330	0.00290	0.00360	0.00300	0.00330	0.00330	0.00390	0.00350	0.00350
Antimony (Sb)-Dissolved	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Arsenic (As)-Dissolved	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Barium (Ba)-Dissolved	mg/L	0.0164	0.0165	0.0170	0.0168	0.0166	0.0167	0.0164	0.0162	0.0163
Beryllium (Be)-Dissolved	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bismuth (Bi)-Dissolved	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Boron (B)-Dissolved	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cadmium (Cd)-Dissolved	µg/L	0.0108	0.0110	0.0117	0.0150	0.0105	0.0196	0.0127	0.00870	0.0100
Calcium (Ca)-Dissolved	mg/L	36.8	37.6	46.2	38.2	38.5	45.8	36.3	36.5	36.9
Chromium (Cr)-Dissolved	mg/L	<0.0001	<0.0001	0.000100	<0.0001	<0.0001	0.000110	<0.0001	<0.0001	<0.0001
Cobalt (Co)-Dissolved	mg/L	-	-	-	-	-	-	-	-	-
Cobalt (Co)-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Copper (Cu)-Dissolved	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.000440	<0.0002	<0.0002
Iron (Fe)-Dissolved	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Lead (Pb)-Dissolved	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Lithium (Li)-Dissolved	mg/L	0.00430	0.00460	0.00870	0.00470	0.00470	0.00910	0.00420	0.00430	0.00440
Magnesium (Mg)-Dissolved	mg/L	11.4	12.0	17.0	12.3	12.4	17.5	11.3	11.5	11.6
Manganese (Mn)-Dissolved	mg/L	0.00136	0.00152	0.00208	0.00158	0.00159	0.00303	0.00139	0.00145	0.00141
Mercury (Hg)-Dissolved	mg/L	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005
Molybdenum (Mo)-Dissolved	mg/L	0.000522	0.000562	0.000552	0.000538	0.000544	0.000578	0.000530	0.000547	0.000544
Nickel (Ni)-Dissolved	mg/L	<0.0005	0.000510	0.000850	0.000500	0.000520	0.000940	0.000510	0.000500	<0.0005
Potassium (K)-Dissolved	mg/L	0.440	0.468	0.683	0.492	0.476	0.699	0.443	0.448	0.451
Selenium (Se)-Dissolved	µg/L	6.66	6.60	12.1	6.53	7.06	13.0	6.89	7.40	6.81
Silicon (Si)-Dissolved	mg/L	1.26	1.21	1.26	1.21	1.26	1.26	1.24	1.40	1.25
Silver (Ag)-Dissolved	mg/L	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Sodium (Na)-Dissolved	mg/L	0.379	0.368	0.420	0.413	0.381	0.423	0.361	0.373	0.363
Strontium (Sr)-Dissolved	mg/L	0.0639	0.0676	0.0711	0.0679	0.0667	0.0717	0.0649	0.0654	0.0666
Thallium (Tl)-Dissolved	mg/L	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Tin (Sn)-Dissolved	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Titanium (Ti)-Dissolved	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Uranium (U)-Dissolved	mg/L	0.000591	0.000648	0.000855	0.000647	0.000652	0.000846	0.000614	0.000618	0.000629
Vanadium (V)-Dissolved	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Zinc (Zn)-Dissolved	mg/L	<0.001	0.00120	0.00110	0.00190	0.00130	0.00300	0.00250	0.00170	0.00130

Henretta Lake Profile Data



Summary and Interpretation

12 Aug 2022

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This report was prepared by Lotic Environmental Ltd. for the exclusive use of Teck Coal Ltd. The material in it reflects the best judgement of Lotic Environmental Ltd. considering the information available to it at the time of preparation. Any use that a third party may make of this report, or any reliance on or decisions made based on it, is the responsibility of the third parties. We disclaim responsibility for consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

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1 Introduction

Henretta Creek is a third order tributary to the Fording River. It was historically diverted into culverts to allow for mining of the Henretta Pit. Once mining was complete, new channels were constructed and water was allowed to flow into the pit creating Henretta Lake. A reclaimed channel flow-through lake system. Henretta Lake has a maximum depth of 9.4m, surface area of 23,300m² and a volume of approximately 95,300m³ as determined by a bathymetric survey (Figure 13) completed by Lotic Environmental Ltd. in 2018 (Roulston, B. and M.D. Robinson. 2018). Henretta Lake has been documented as popular overwintering and is important rearing habitat for Westslope Cutthroat Trout (*Oncorhynchus clarkii lewisi*; WCT) in the Upper Fording River (Cope et al. 2016). Lotic Environmental Ltd. was retained by Teck Coal to complete in-situ water quality profiles in Henretta Lake during the winter of 2020, 2021, and 2022 under ice cover conditions at several locations. Profiles in 2020 showed consistent dissolved oxygen throughout the water column above recommended guidelines and showed no concern for overwintering WCT. The results of the profiles collected in 2021 and 2022 showed Henretta Lake stratifying and the portion of the lake below the thermocline turning hypoxic during the winter months. In the spring of 2022 Lotic Environmental Ltd. deployed a vertical string of loggers through the water profile of Henretta Lake to improve the understanding of water quality before and after spring turnover. The objective of this report is to summarise and interpret the logger data, and to recommend further discussion and data requirements.

2 Overview of the methods

Hobo U24-001 Conductivity and a Hobo U26-001 Dissolved Oxygen loggers were deployed along a vertical chain at depths of 1.25 m, 2.5 m, 3.75 m, 5.0 m, 6.25 m, and 7.5 m beneath the surface of Henretta Lake at site FR_HENLAKE3 (11U 652534 5566398) on May 4, 2022. Location FR_HENLAKE3 was chosen as it is a central location on Henretta Lake with sufficient depth and coincides with previous water quality collection completed on Henretta Lake. The loggers were downloaded and reinstalled on June 29, 2022. A future site visit is planned for October 2022, when loggers will be downloaded, caps replaced on dissolved oxygen loggers and cleaning of any loggers with scour or algae buildup. Water temperature (°C), dissolved oxygen (DO; mg/L), and conductivity (µS/cm) were collected at 15-minute intervals. Additional water quality profiles were completed during installation and when the loggers were downloaded. These profiles were used to correct and check the loggers for accuracy. HOBOWare Software (version 3.7.23) was used to correct logger records and develop a specific conductance record (µS/cm). Discharge was collected at the inlet and outlet of Henretta Lake using a Hach EM950 velocity meter following the Manual of British Columbia Hydrometric Standards (RISC 2009) on a biweekly basis between March and April 2021, and monthly between January and May in 2022.

3 Results

The water quality data from the vertical chain of loggers showed interesting temporal and vertical trends in temperature, dissolved oxygen, and conductivity throughout the 55-day monitoring record. Water temperatures ranged between 1.36 °C and 8.62 °C, with a mean of 4.22 °C. Dissolved oxygen ranged between 3.78 mg/L and 21.18 mg/L, and averaged 10.15 mg/L and conductivity ranged between 241.6 and 2102.6 µS/cm.

Henretta Lake appeared to experience a small turnover event in the top 6 m of the water column between May 27- 29, 2022, and a full turnover event between June 5-6, 2022 (Figure 1). The deepest loggers at 6.25 m and 7.5 m recorded a steady increase in temperature over the first 3 weeks of deployment at a faster rate than the rest of the water column. The logger at 6.25 m documented a rapid decline on May 28, 2022, illustrating the smaller turnover event, and the deepest logger (7.5m) documented a rapid decline on June 5, 2022, illustrating the full turnover event. After the event on June 5, 2022, all loggers recorded similar water temperatures throughout the water column for the rest of the study period, indicating full mixing of the lake. Dissolved oxygen trends are complicated, as the deepest logger is detecting the highest values of DO (not typical of a dimictic lake). Dissolved oxygen below 5 m is observed to gradually increase from hypoxic levels before a turnover event takes place. Dissolved oxygen below 6.5 m shows declines consistent with the first small turnover event around May 27, 2022, and the full turnover on June 6, 2022 (Figure 2). A second drastic decrease in dissolved oxygen is observed after full turnover on June 11, 2022, below a depth of 5 m potentially caused by an increased turbidity event (Figure 8). After the small turnover event on May 27, 2022, conductivity in the upper 5 m of Henretta Lake were consistent. The 6.25 m logger rapidly decreased from ~1200 $\mu\text{S}/\text{cm}$ to ~400 $\mu\text{S}/\text{cm}$ and only a small gradual decrease in conductivity was observed at 7.5 m, indicating poor mixing at the bottom during the small turnover event. A second large drop in conductivity was seen between June 3-6, 2022, at 6.25 m and 7.5 m during the full turnover event, whereas afterwards Henretta Lakes conductivity was consistent throughout the profile (Figure 3). A detailed look at the water quality parameters around the full turnover event can be found in Figure 4, Figure 5, and Figure 6. Trail camera images of June 4th, 5th, and 6th illustrate a potential increase in turbidity as a result of the full turnover on June 6, 2022 (Figure 7).

Dissolved oxygen rarely dropped below 5 mg/L between May 4, 2022, and June 29, 2022, the recommended criteria for the protection of aquatic life (BC Provincial Guidelines, 1997). Compared to in-situ profiles collected in January to March, 2022 where dissolved oxygen dropped below 5mg/L below 4m in depth (Lotic, 2022). Only 6 out of 55 days had a mean DO value less than 5 mg/L, and at only one depth (6.25 m) (Table 1). Hypoxia does not appear to be a concern for Westslope Cutthroat Trout during the period recorded.

Diel oscillations in temperature and DO occur throughout the logger record, as expected in such a shallow system, however the daily range in DO values were of interest (Figure 10 and Figure 11). Due to the limited logger record at one location in Henretta Lake the cause of the Diel oscillations is currently unknown. Diel variability in DO can be due a variety of things, including biological activity, i.e., photosynthesis occurring during only daylight hours, and respiration occurring throughout the 24-hour period; wind-driven internal seiches of a stratified waterbody (Flood et al. 2021, Brooks et al. 2022); sediment oxygen demand, or diel variability in the inflow. Diel variability as a result of biological activity has been documented to fluctuate in streams by a range of 2- 3 mg/L (Null et al. 2017); in surface waters of a shallow (0.6 m) and densely vegetated lake during summer by a range of 12% to 235% saturation (Andersen et al. 2017); and around 7 mg/L in a dystrophic lake (Staeher et al. 2010). It is unlikely, however, that photosynthesis of vegetation or algae at 7.5 m deep in Henretta Lake in May would be able to change DO concentrations by such a large amount. Wind-driven internal seiches occur when a sustained wind blows over a stratified waterbody, surface water accumulates at the downwind area, depressing the thermocline, and allows upwelling of the hypolimnion up to the surface at the upwind region, and then when wind relaxes, the thermocline 'rocks' back and allows downwelling of surface waters, and can also influence how fish use the water column (Helveca et al. 2015; Brooks et al. 2022). Wind-driven seiche events are common in lentic environments, however without a second vertical chain of temperature and DO data, we don't know if this 'rocking' is

occurring in Henretta Lake. The oxygen regime of small eutrophic waters can be affected by respiration in the organic sediment (Baxa et al. 2021), in addition to the water column as discussed previously. Sediment oxygen demand can account for over 50% of total oxygen demand and is a major factor of DO deficits in aquatic ecosystems (Matlock et al. 2003). And finally, if there is extreme diel variability in the incoming water source(s), it will likely be reflected in the water column.

Discharge measurements were compared between the inflow and the outflow of Henretta Lake during late winter and early spring of 2021 and 2022. All but one sampling point showed a positive difference between the discharge rates, i.e., more flow leaving Henretta Lake than entering (Figure 12). One anomaly in April 2021 shows a negative difference and this may be because of measurement error or ice effects.

The increased water temperatures, high levels of conductivity and DO at 6.25 m and 7.5 m depth until turnover, and a positive difference between the outflow and inflow discharge rates could indicate a secondary water source at the bottom of the lake, potentially groundwater seepage. Water temperature at the deepest part of a lake tends to be the coolest and highest density (typically 4 °C), however data shows the logger at the bottom of the lake is measuring the highest temperature in the water column until turnover occurs on June 6, 2022. The bottom of the lake also experienced the highest daily fluctuations in DO (Figure 2) which is not typically the photic zone and therefore likely not as a result of photosynthesis, and perhaps indicative of other mechanisms involving either sediment demand or groundwater infusions.

4 Conclusions

The data show some interesting and complex trends, including the presence of two turnover events, some unexpected warmer temperatures and high DO values at the bottom of the lake not typical for spring post ice-off conditions, and some extreme daily fluctuations in DO. Further profile data collection is required in Henretta Lake to determine the cause of these trends. We recommend continuing the recording of temperature, dissolved oxygen, and conductivity over the winter of 2022/2023. This will allow for further analysis of thermal stratification during the summer and if the hypolimnion in Henretta Lake turns hypoxic during these times. As well as to closely monitor the stratification in Henretta Lake that occurs under ice over the winter months.

Future recommendations for Henretta Lake monitoring are to continue collecting water quality profiles and discharges at the inlet/outlet over the winter months to monitor the development and potential movement of the hypoxic zone and useable overwintering habitat in Henretta Lake. Continuous temperature, dissolved oxygen, conductivity logger records and daily photo points of Henretta Lake will assist with detailed monitoring and help identify potential influencing factors and environmental variability. We recommend investigating the source of these diel oscillations and the source of the warmer, oxygenated, and high conductivity water at the bottom of the lake. Finally, we recommend completing a literature review and conducting water quality profiles of other high elevation lakes for comparison of trends in stratification and turnover.

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6 Appendices



Figure 1. Water temperature obtained from six loggers at various depths in Henretta Lake in May and June 2022. First vertical line indicates a small turnover event, the second line illustrates a full turnover event, and the dashed line indicates a sudden drop in air temperature. (yyyy-mm-dd)

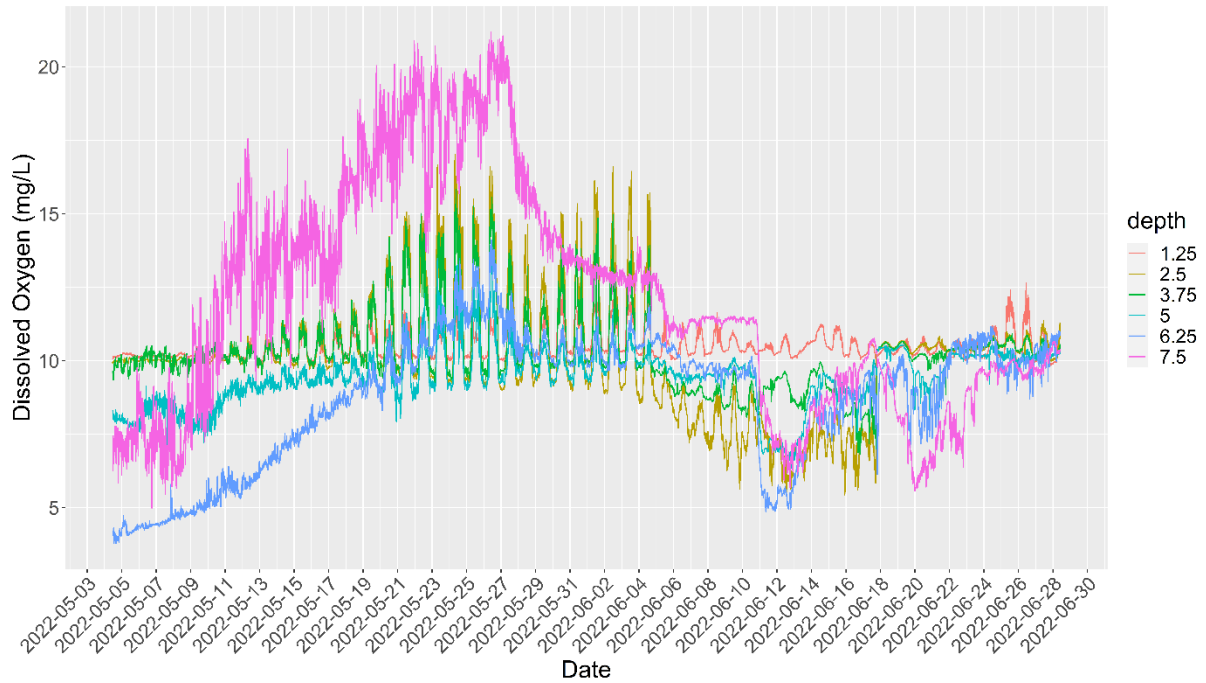


Figure 2. Dissolved Oxygen data obtained from six loggers at various depths in Henretta Lake in May and June 2022.

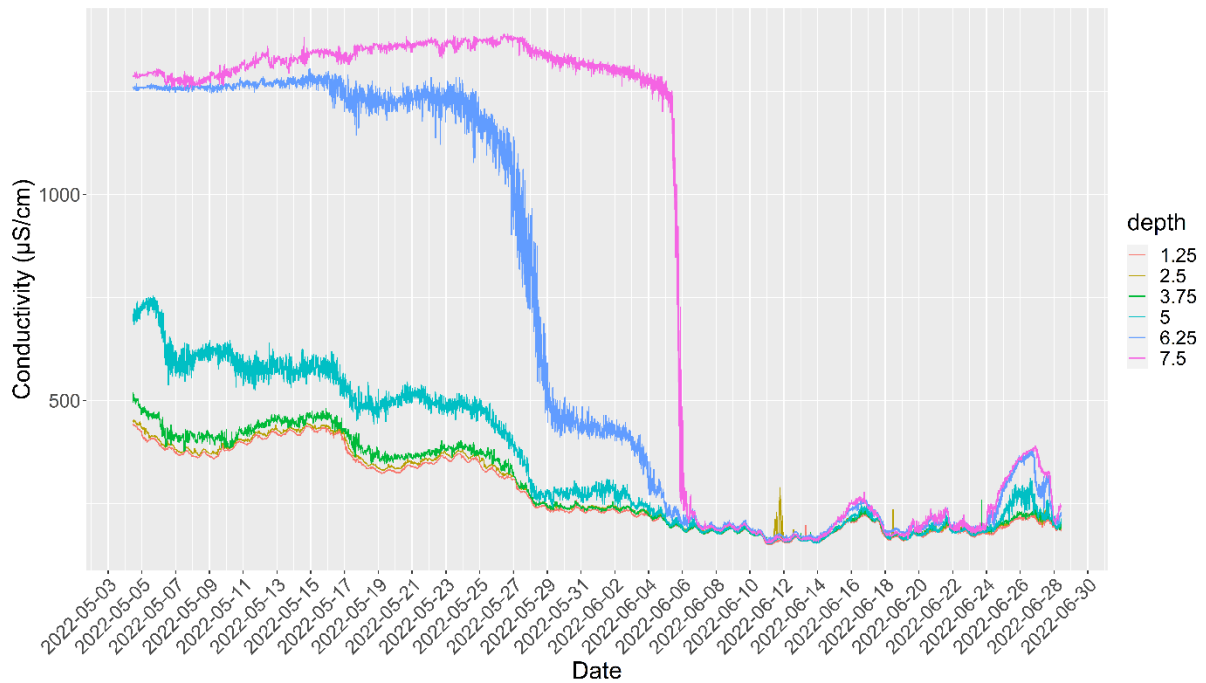


Figure 3. Conductivity data obtained from six loggers at various depths in Henretta Lake in May and June 2022.

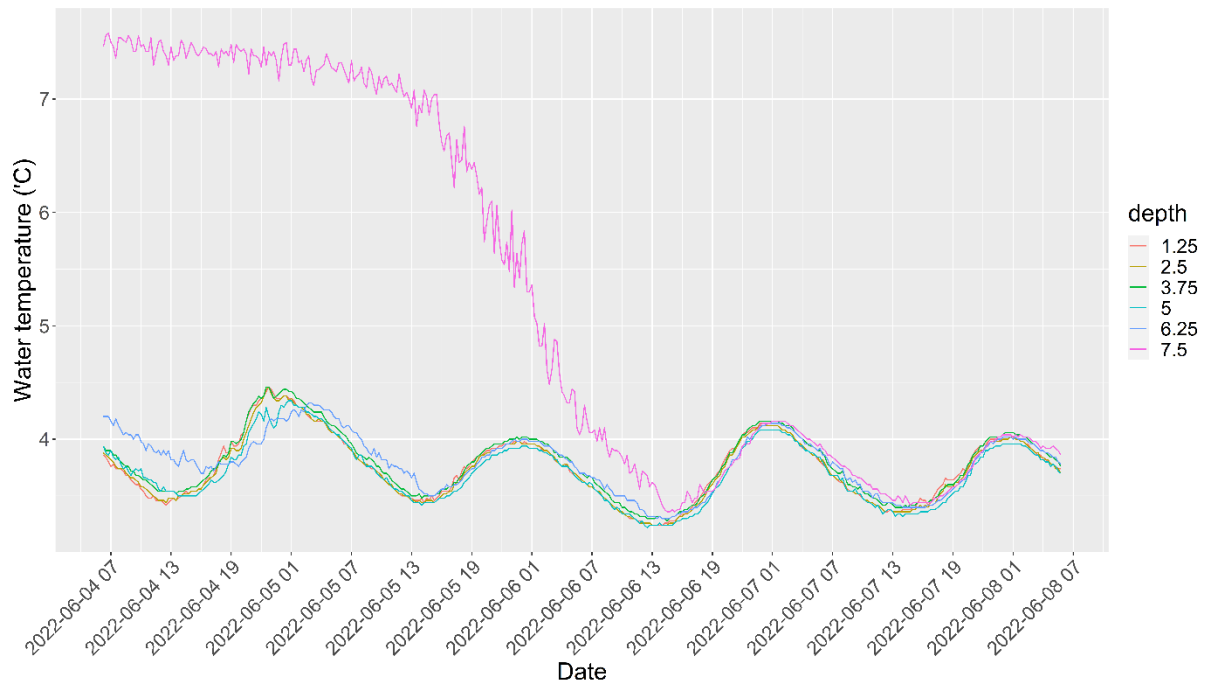


Figure 4. Water temperature for a 4-day period around the full turnover event, 6 June 2022. X axis represents (yyyy-mm-dd hh)

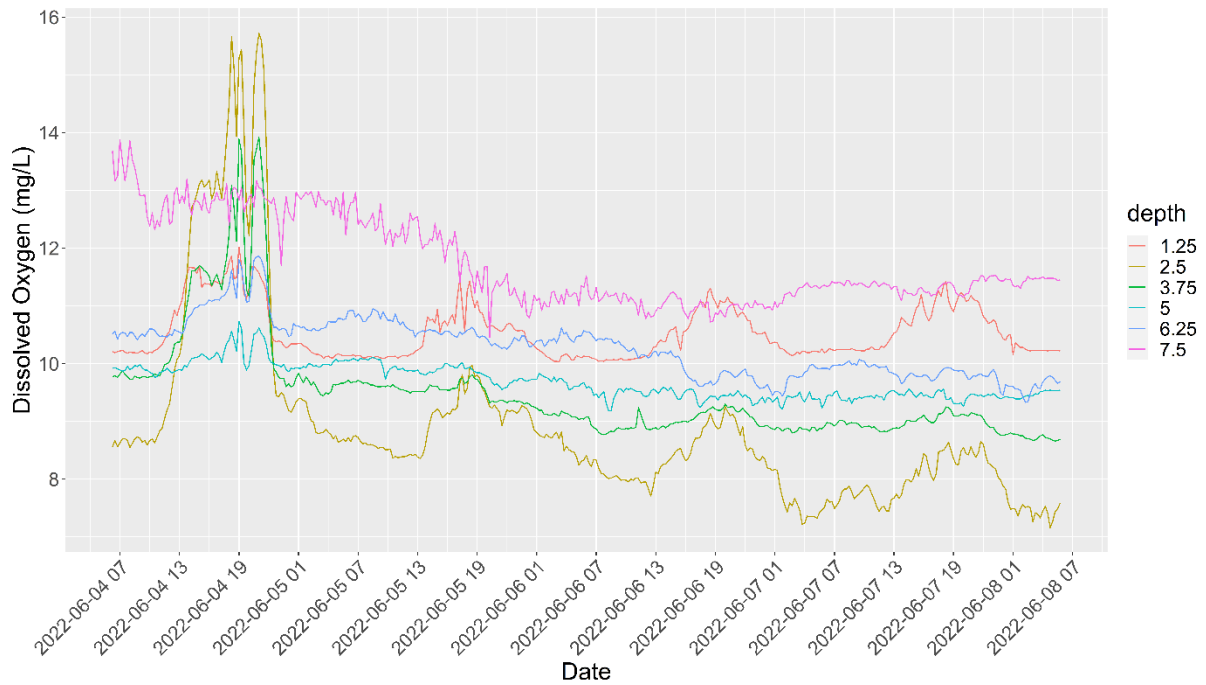


Figure 5. Dissolved oxygen measurements at each of the 6 depths over a 4-day period of the full turnover event on 6 June 2022. X axis represents (yyyy-mm-dd hh)

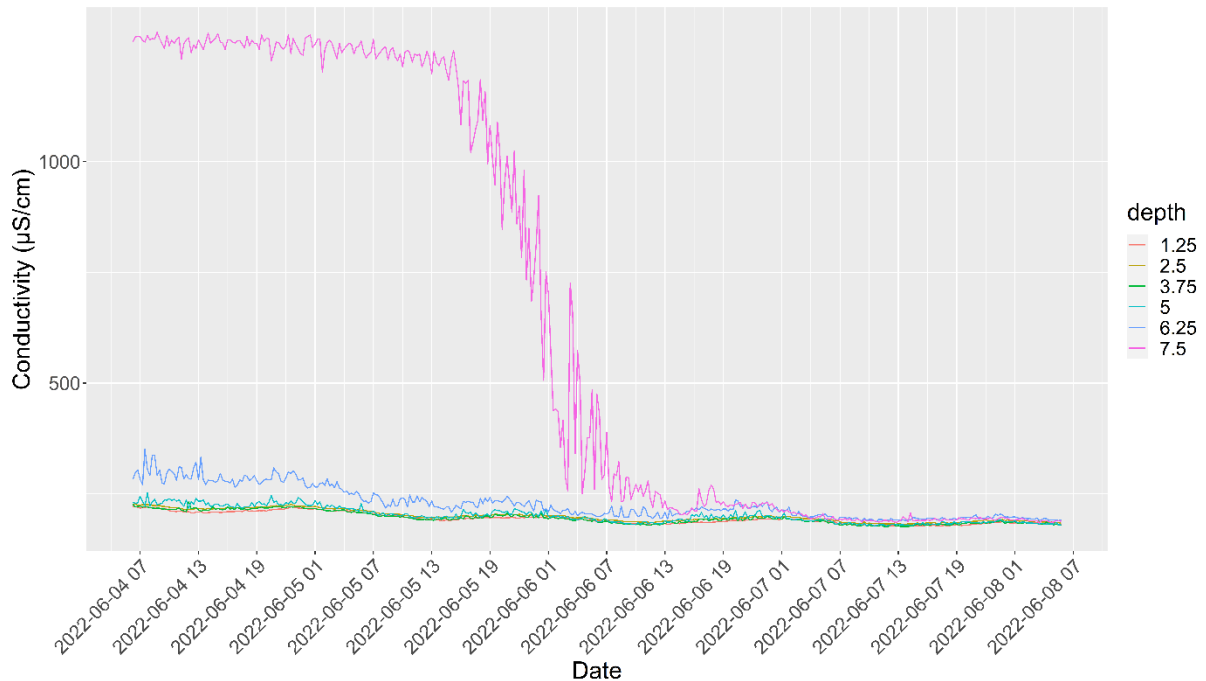


Figure 6. Conductivity measurements at each of the 6 depths over a 4-day period of the full turnover event on 6 June 2022. X axis represents (yyyy-mm-dd hh)



Figure 7. Trail camera photos obtained on the 4, 5, and 6 June 2022, prior, during and post full turnover.

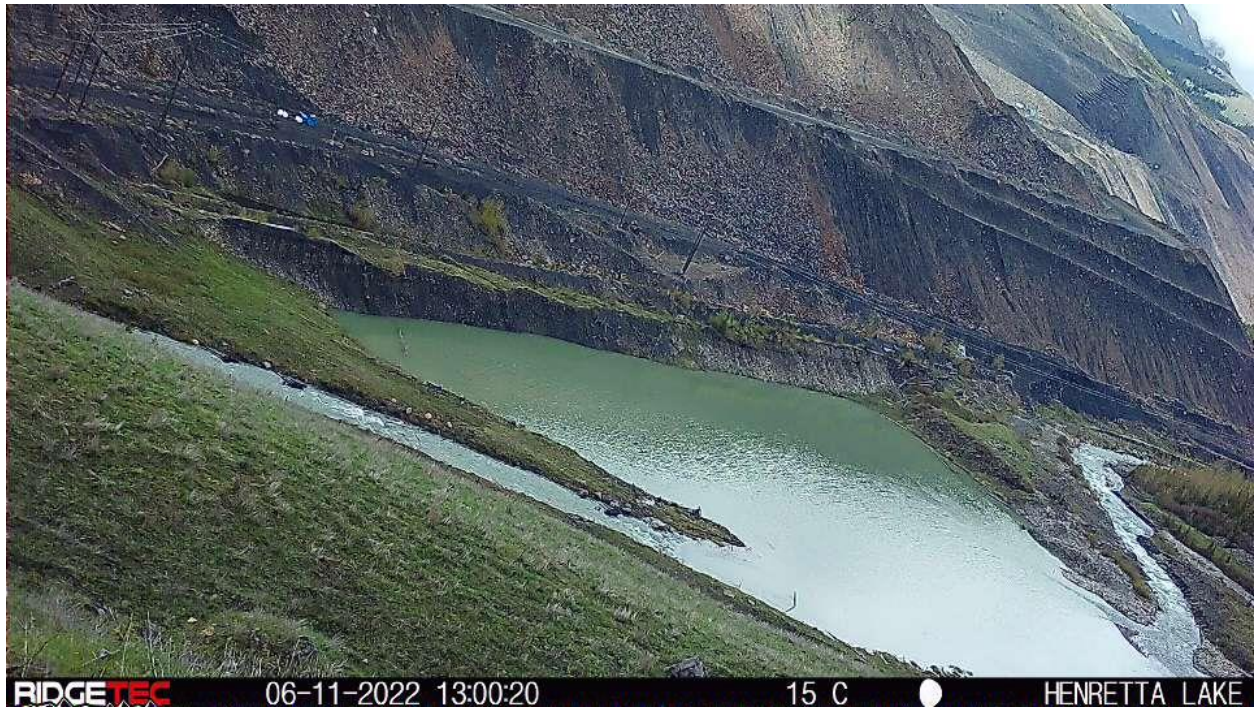


Figure 8. An apparent increase in turbidity observed on June 11, 2022 when there was a decrease in DO below 5m in depth.



Figure 9. Trail camera photos before, during, and after the sudden decrease in water temperature experienced throughout the whole water column on June 14, 2022.

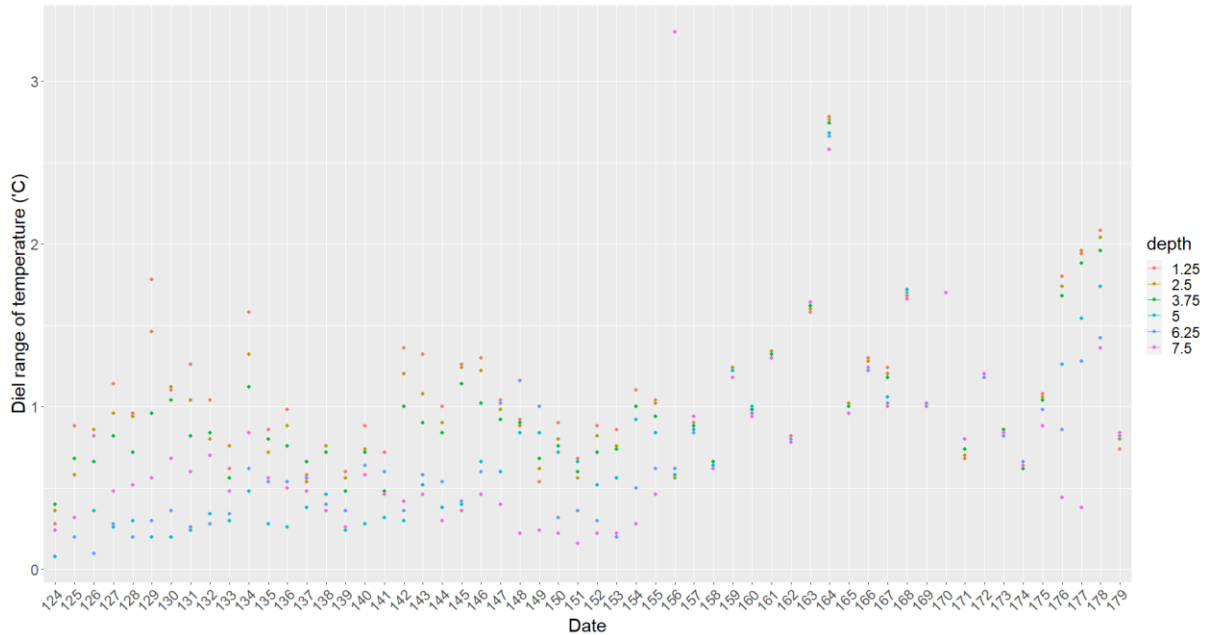


Figure 10. Diel range in temperatures experienced at each depth, per day of the study period between May 4, 2022, and June 29, 2022.

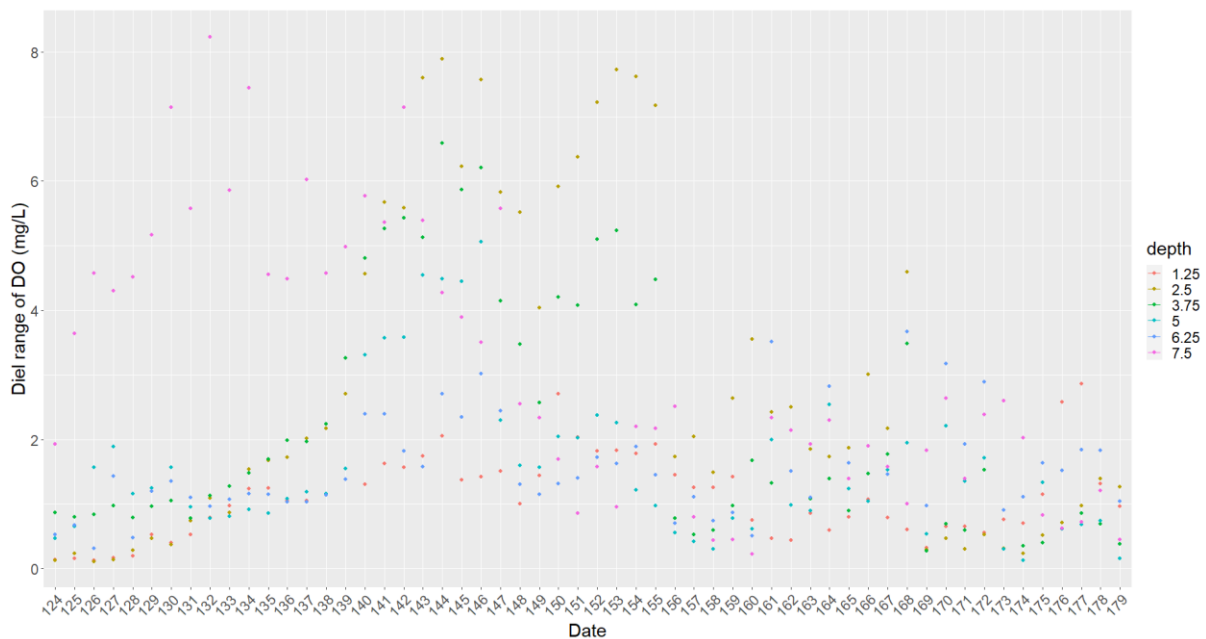


Figure 11. Diel range of dissolved oxygen experienced at each depth, per day of the study period between May 4, 2022, and June 29, 2022.

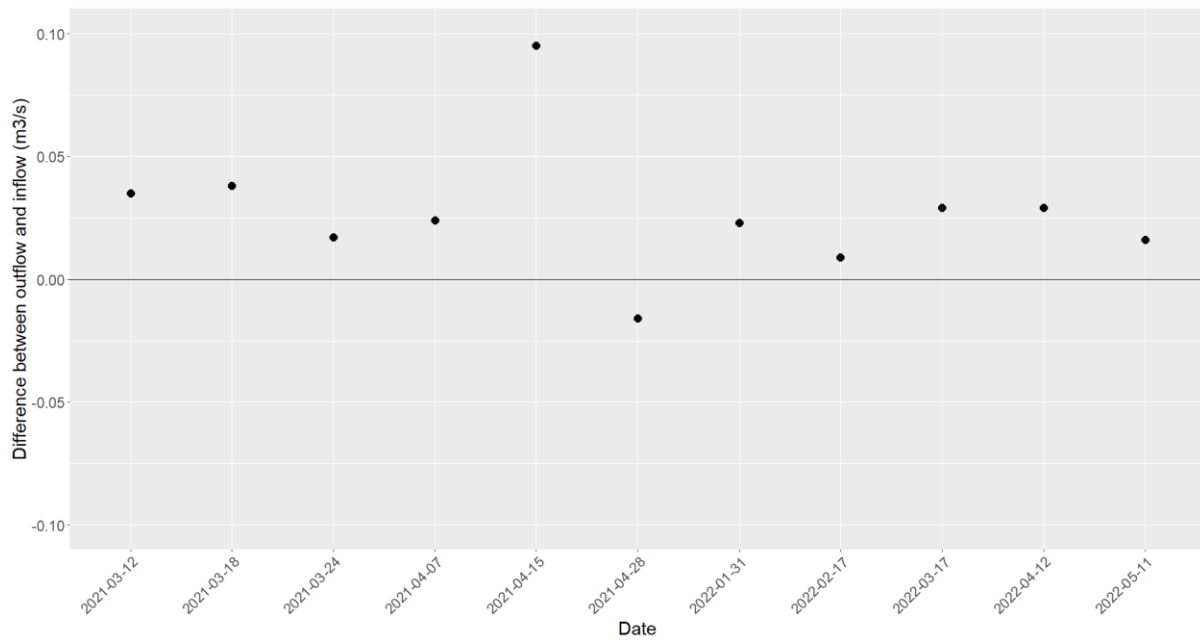
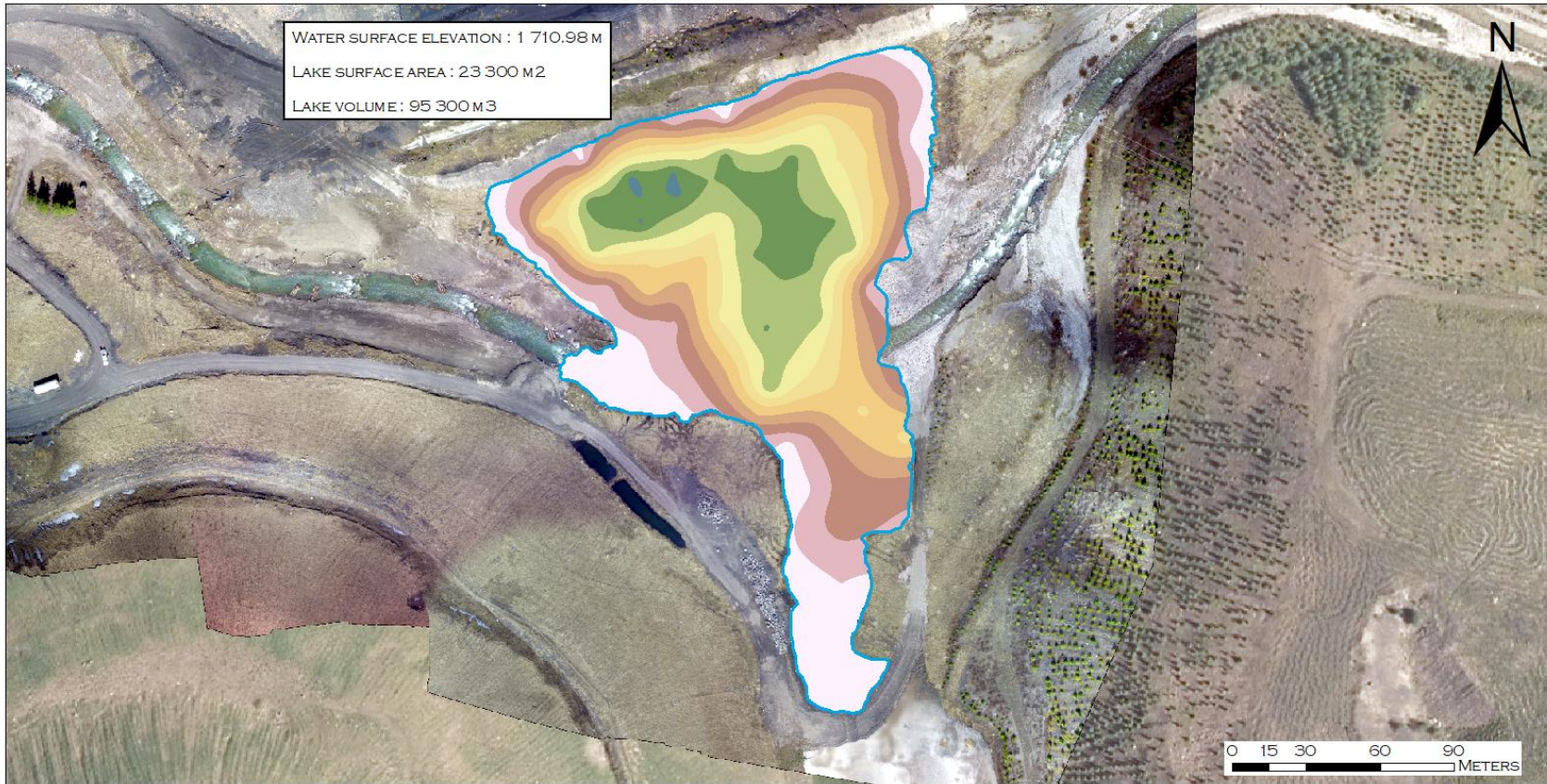


Figure 12. The difference between the discharge measurements of the outflow and inflow of Henretta Lake. Positive values indicate a secondary source of water into the lake.



<p>CLIENT: Teck</p> <p>DESIGN CONSULTANTS: LOTIC ENVIRONMENTAL SPECIALISTS IN FRESHWATER ECOSYSTEMS</p>	<p>IMAGERY: -DRONE PHOTO MAY 8 2018 (LOTIC ENVIRONMENTAL LTD.) -BACKGROUND IMAGERY (TECK 2017) UTM ZONE 11 NAD83 1:1,500</p>	<p>DRAWN BY: I.L. REVIEWED BY: M.R. DATE: 2019-01-28</p>	HENRETTA LAKE BATHYMETRY 2018			
			BATHYMETRY / LAKE DEPTH FROM WATER SURFACE (M)			
			0-1	3-4	6-7	9-9.4
			1-2	4-5	7-8	
			2-3	5-6	8-9	

Figure 13: Bathymetric map of Henretta Lake developed in 2018.

Table 1. Summary statistics of the temperature, DO, and conductivity data (minimum, maximum, mean, and variance) per depth for each day of the study.

Day of year	Depth (m)	Min temp	Mean temp	Max temp	Var temp	Min DO	Mean DO	Max DO	Var DO	Min cond	Mean cond	Max cond	Var cond
124	1.25	3.0	3.2	3.2	0.0	10.1	10.1	10.2	0.0	420.4	433.3	442.6	34.8
124	2.5	3.0	3.2	3.3	0.0	9.9	10.0	10.0	0.0	434.0	444.2	452.2	19.6
124	3.75	3.0	3.2	3.4	0.0	9.4	9.9	10.2	0.0	466.2	494.7	518.7	123.4
124	5	3.6	3.6	3.7	0.0	7.9	8.1	8.3	0.0	684.6	714.2	740.1	163.5
124	6.25	4.3	4.4	4.5	0.0	3.8	4.0	4.3	0.0	1252.4	1257.7	1268.9	10.6
124	7.5	5.2	5.3	5.4	0.0	5.9	7.1	7.8	0.2	1282.8	1288.4	1297.8	14.8
125	1.25	2.4	2.9	3.3	0.1	10.1	10.2	10.3	0.0	396.7	405.4	419.6	18.2
125	2.5	2.7	3.0	3.3	0.0	9.9	10.0	10.1	0.0	404.3	417.8	434.1	68.5
125	3.75	2.6	3.0	3.3	0.0	9.4	9.9	10.2	0.0	453.3	467.2	484.7	51.0
125	5	3.3	3.6	3.6	0.0	7.6	7.9	8.2	0.0	690.6	730.5	753.0	145.7
125	6.25	4.4	4.5	4.6	0.0	4.1	4.3	4.7	0.0	1253.5	1261.5	1268.8	5.8
125	7.5	5.3	5.4	5.6	0.0	6.1	7.4	9.8	0.4	1287.0	1294.3	1305.9	16.6
126	1.25	2.5	2.9	3.3	0.1	10.1	10.2	10.2	0.0	373.0	384.0	395.2	19.8
126	2.5	2.5	2.9	3.3	0.1	10.0	10.0	10.1	0.0	380.8	392.4	405.9	27.5
126	3.75	2.6	3.0	3.3	0.0	9.7	10.1	10.5	0.0	387.3	421.1	471.0	394.4
126	5	3.1	3.3	3.5	0.0	7.6	8.3	9.1	0.1	537.6	632.6	719.7	1923.9
126	6.25	4.5	4.5	4.6	0.0	4.2	4.4	4.6	0.0	1247.6	1258.3	1266.1	12.5
126	7.5	4.8	5.3	5.6	0.0	5.0	7.4	9.6	0.7	1259.4	1284.2	1304.5	134.4
127	1.25	2.5	2.9	3.6	0.1	10.1	10.2	10.3	0.0	364.3	371.2	379.3	14.7
127	2.5	2.5	3.0	3.5	0.1	9.9	10.0	10.1	0.0	371.5	378.3	387.1	17.1
127	3.75	2.6	3.1	3.4	0.0	9.5	10.1	10.5	0.1	377.5	408.6	429.4	155.0
127	5	3.1	3.2	3.4	0.0	7.1	8.5	9.0	0.1	546.3	591.5	639.6	442.0
127	6.25	4.5	4.6	4.8	0.0	4.4	4.5	5.8	0.0	1247.8	1259.5	1268.7	17.6
127	7.5	4.9	5.2	5.4	0.0	5.5	7.2	9.8	0.7	1253.9	1277.0	1299.4	55.5
128	1.25	2.4	2.8	3.3	0.1	10.1	10.2	10.3	0.0	360.9	367.1	375.5	21.8

Day of year	Depth (m)	Min temp	Mean temp	Max temp	Var temp	Min DO	Mean DO	Max DO	Var DO	Min cond	Mean cond	Max cond	Var cond
128	2.5	2.4	2.8	3.3	0.1	9.9	10.0	10.1	0.0	366.3	374.6	382.7	19.4
128	3.75	2.7	3.0	3.4	0.0	9.5	9.9	10.2	0.0	396.9	412.2	428.3	55.5
128	5	3.1	3.3	3.4	0.0	7.6	8.1	8.8	0.1	572.4	613.0	638.4	159.6
128	6.25	4.6	4.7	4.8	0.0	4.6	4.8	5.1	0.0	1250.5	1260.3	1266.8	11.0
128	7.5	4.9	5.2	5.4	0.0	5.7	7.1	10.2	0.9	1262.7	1275.7	1288.2	39.3
129	1.25	1.9	2.6	3.7	0.3	10.0	10.2	10.5	0.0	357.7	369.8	390.0	90.4
129	2.5	2.3	2.8	3.7	0.2	9.8	10.0	10.2	0.0	369.0	378.9	396.4	64.6
129	3.75	2.5	2.9	3.4	0.0	9.5	10.1	10.5	0.0	384.8	407.9	426.7	79.8
129	5	3.2	3.3	3.4	0.0	7.2	7.9	8.5	0.0	576.3	619.4	645.8	148.6
129	6.25	4.7	4.8	5.0	0.0	4.7	5.0	5.9	0.0	1246.9	1259.4	1270.8	31.0
129	7.5	5.3	5.5	5.9	0.0	7.0	9.5	12.1	1.8	1264.7	1290.0	1315.4	77.3
130	1.25	2.3	2.8	3.4	0.2	10.0	10.2	10.4	0.0	377.1	389.3	400.7	74.0
130	2.5	2.2	2.8	3.4	0.2	9.9	10.1	10.3	0.0	384.0	395.5	406.9	72.4
130	3.75	2.3	2.9	3.4	0.1	9.6	10.3	10.7	0.0	384.0	406.5	435.2	218.5
130	5	3.2	3.3	3.4	0.0	7.5	8.3	9.1	0.1	532.9	601.0	646.2	516.3
130	6.25	4.8	5.0	5.2	0.0	5.0	5.4	6.3	0.1	1252.5	1264.8	1284.7	33.3
130	7.5	5.4	5.8	6.1	0.0	7.6	10.8	14.7	2.9	1283.8	1302.6	1322.9	89.5
131	1.25	2.4	3.1	3.7	0.2	10.0	10.2	10.6	0.0	392.3	403.7	416.6	74.9
131	2.5	2.6	3.2	3.7	0.1	9.9	10.1	10.6	0.0	400.3	411.4	426.5	73.7
131	3.75	2.8	3.1	3.6	0.0	9.9	10.2	10.7	0.0	412.7	430.7	453.8	71.8
131	5	3.2	3.3	3.4	0.0	8.5	9.0	9.4	0.0	525.6	573.5	620.2	366.5
131	6.25	5.0	5.1	5.3	0.0	5.3	5.7	6.4	0.1	1249.2	1268.1	1277.5	28.3
131	7.5	5.8	6.1	6.4	0.0	10.7	13.3	16.2	1.0	1300.5	1318.0	1345.0	68.0
132	1.25	2.7	3.3	3.8	0.1	10.0	10.3	10.8	0.1	405.2	414.9	425.7	53.9
132	2.5	2.9	3.4	3.7	0.1	9.8	10.2	10.8	0.1	413.7	423.5	440.0	45.2
132	3.75	2.9	3.3	3.7	0.1	9.6	10.2	10.7	0.1	433.6	447.5	465.4	48.9
132	5	3.4	3.5	3.7	0.0	8.8	9.1	9.5	0.0	538.5	580.3	639.4	301.8
132	6.25	5.2	5.3	5.5	0.0	5.6	5.9	6.6	0.0	1260.6	1271.6	1285.9	28.8
132	7.5	6.0	6.4	6.7	0.0	9.3	13.7	17.6	4.9	1306.4	1329.1	1360.5	143.3

Day of year	Depth (m)	Min temp	Mean temp	Max temp	Var temp	Min DO	Mean DO	Max DO	Var DO	Min cond	Mean cond	Max cond	Var cond
133	1.25	2.8	3.1	3.4	0.0	9.9	10.3	10.9	0.1	413.2	420.9	430.1	25.9
133	2.5	2.7	3.2	3.5	0.0	9.9	10.2	10.8	0.1	419.5	427.8	434.7	19.9
133	3.75	3.0	3.2	3.5	0.0	9.5	10.2	10.8	0.1	433.6	450.3	465.1	54.3
133	5	3.4	3.6	3.7	0.0	8.9	9.2	9.7	0.0	530.9	577.3	614.3	285.3
133	6.25	5.3	5.5	5.7	0.0	6.2	6.5	7.2	0.0	1257.7	1272.8	1285.6	44.2
133	7.5	6.2	6.4	6.7	0.0	9.9	13.1	15.8	1.9	1294.3	1324.1	1341.4	78.0
134	1.25	2.5	3.3	4.1	0.3	10.0	10.3	11.2	0.1	414.1	426.1	438.7	69.5
134	2.5	2.7	3.4	4.1	0.2	9.8	10.3	11.3	0.2	421.5	433.6	444.8	52.5
134	3.75	2.9	3.4	4.0	0.1	9.9	10.4	11.4	0.1	434.4	451.8	470.6	93.9
134	5	3.3	3.5	3.8	0.0	9.0	9.4	9.9	0.1	540.1	574.6	624.3	268.4
134	6.25	5.5	5.7	6.1	0.0	6.5	7.1	7.7	0.1	1256.4	1276.4	1305.7	88.0
134	7.5	6.4	6.7	7.3	0.0	9.8	13.5	17.2	1.7	1312.8	1332.6	1381.2	112.0
135	1.25	3.1	3.6	4.0	0.1	9.9	10.4	11.2	0.2	421.8	428.9	434.2	14.1
135	2.5	3.2	3.6	4.0	0.0	9.7	10.4	11.4	0.3	429.8	436.2	440.6	8.8
135	3.75	3.2	3.6	4.0	0.0	9.8	10.4	11.5	0.2	444.7	460.9	479.7	38.5
135	5	3.7	3.8	3.9	0.0	9.0	9.4	9.9	0.0	546.9	581.8	612.2	207.6
135	6.25	5.7	5.9	6.3	0.0	7.1	7.6	8.2	0.1	1252.8	1277.9	1296.5	82.4
135	7.5	6.7	6.9	7.3	0.0	11.6	13.9	16.1	0.6	1330.8	1346.2	1354.9	22.7
136	1.25	3.2	3.8	4.2	0.1	9.9	10.3	10.9	0.1	402.1	418.7	430.0	41.0
136	2.5	3.3	3.8	4.2	0.1	9.7	10.4	11.4	0.3	414.4	426.5	438.4	21.9
136	3.75	3.4	3.8	4.2	0.1	9.7	10.5	11.7	0.2	421.6	445.0	469.6	163.0
136	5	3.7	3.9	4.0	0.0	9.1	9.4	10.2	0.1	504.2	560.1	619.1	672.2
136	6.25	5.7	5.9	6.2	0.0	7.6	8.1	8.6	0.1	1209.6	1262.6	1300.1	427.0
136	7.5	6.8	7.0	7.3	0.0	11.0	13.5	15.5	1.0	1316.7	1338.4	1360.3	82.9
137	1.25	3.3	3.6	3.9	0.0	9.9	10.4	11.0	0.1	347.6	364.1	402.5	168.9
137	2.5	3.4	3.6	3.9	0.0	9.7	10.5	11.8	0.4	358.4	376.5	414.4	249.5
137	3.75	3.4	3.7	4.1	0.0	9.9	10.6	11.8	0.3	363.7	403.6	431.7	294.5
137	5	3.6	3.8	4.0	0.0	9.1	9.5	10.3	0.1	451.9	504.6	564.0	598.6
137	6.25	5.7	5.9	6.2	0.0	8.0	8.5	9.0	0.1	1143.7	1232.2	1291.0	595.6

Day of year	Depth (m)	Min temp	Mean temp	Max temp	Var temp	Min DO	Mean DO	Max DO	Var DO	Min cond	Mean cond	Max cond	Var cond
137	7.5	6.9	7.1	7.4	0.0	11.6	14.0	17.6	2.2	1315.6	1342.4	1365.5	161.1
138	1.25	2.8	3.1	3.5	0.0	10.1	10.5	11.2	0.1	327.7	336.6	346.8	20.5
138	2.5	2.8	3.2	3.6	0.0	9.9	10.7	12.1	0.5	335.5	345.4	358.5	32.4
138	3.75	3.1	3.3	3.8	0.0	9.8	10.6	12.1	0.4	348.1	373.6	391.2	92.7
138	5	3.4	3.5	3.8	0.0	9.1	9.6	10.3	0.1	443.7	484.5	543.5	270.3
138	6.25	5.8	6.0	6.2	0.0	8.4	8.9	9.5	0.1	1190.4	1233.1	1275.4	308.7
138	7.5	7.2	7.3	7.5	0.0	14.3	16.4	18.9	0.9	1341.5	1357.4	1367.6	29.2
139	1.25	2.5	2.8	3.1	0.0	10.1	10.6	11.5	0.2	322.8	327.5	331.7	7.0
139	2.5	2.5	2.9	3.1	0.0	9.9	11.0	12.6	0.9	330.2	335.6	345.5	11.3
139	3.75	2.8	3.0	3.2	0.0	9.5	10.9	12.7	0.9	346.3	360.4	377.8	41.8
139	5	3.3	3.4	3.5	0.0	8.9	9.5	10.5	0.2	448.3	491.8	526.6	204.2
139	6.25	5.9	6.0	6.3	0.0	8.7	9.2	10.1	0.1	1179.9	1225.5	1261.2	207.9
139	7.5	7.3	7.4	7.6	0.0	15.1	16.9	20.0	0.9	1341.9	1358.8	1371.1	29.9
140	1.25	2.6	3.0	3.4	0.1	10.1	10.5	11.4	0.1	324.6	333.4	343.4	51.7
140	2.5	2.7	3.1	3.5	0.1	9.7	11.4	14.2	2.2	333.6	343.0	357.0	55.2
140	3.75	2.8	3.0	3.5	0.0	9.4	11.1	14.2	1.9	355.9	363.5	372.4	17.7
140	5	3.2	3.4	3.5	0.0	7.9	9.6	11.2	0.5	481.9	509.5	544.8	176.0
140	6.25	5.8	6.2	6.4	0.0	8.3	9.6	10.7	0.3	1197.3	1231.3	1270.2	228.5
140	7.5	7.2	7.5	7.8	0.0	14.3	17.5	20.1	1.2	1346.1	1363.3	1384.3	28.1
141	1.25	2.7	3.0	3.4	0.0	10.1	10.7	11.7	0.3	334.9	342.6	349.5	24.4
141	2.5	2.8	3.1	3.4	0.0	9.4	11.9	15.1	4.3	342.5	351.5	360.1	26.1
141	3.75	2.9	3.1	3.4	0.0	9.5	11.6	14.7	3.3	357.8	368.0	380.5	26.5
141	5	3.2	3.4	3.5	0.0	8.0	9.6	11.6	0.8	477.3	512.0	536.7	164.3
141	6.25	6.1	6.3	6.7	0.0	9.2	10.1	11.6	0.4	1177.8	1238.0	1275.0	273.9
141	7.5	7.4	7.6	7.8	0.0	15.5	18.3	20.9	1.0	1345.7	1366.4	1378.2	26.9
142	1.25	2.6	3.3	4.0	0.2	10.0	10.6	11.6	0.2	344.9	354.5	366.4	54.1
142	2.5	2.8	3.3	4.0	0.2	9.4	11.6	15.0	3.5	353.3	363.3	378.9	59.3
142	3.75	2.9	3.3	3.9	0.1	9.6	11.6	15.0	3.1	361.4	376.6	402.1	55.6
142	5	3.2	3.4	3.5	0.0	8.7	10.0	12.3	0.8	466.2	492.0	521.0	138.7

Day of year	Depth (m)	Min temp	Mean temp	Max temp	Var temp	Min DO	Mean DO	Max DO	Var DO	Min cond	Mean cond	Max cond	Var cond
142	6.25	6.2	6.4	6.6	0.0	9.6	10.4	11.4	0.2	1122.5	1232.5	1284.4	622.8
142	7.5	7.5	7.7	7.9	0.0	13.7	17.9	20.8	3.9	1332.1	1362.8	1381.1	151.0
143	1.25	3.0	3.7	4.3	0.2	10.0	10.6	11.8	0.2	352.0	361.5	370.9	41.8
143	2.5	3.2	3.8	4.3	0.1	9.1	12.0	16.7	5.4	361.0	370.6	380.7	32.0
143	3.75	3.2	3.6	4.1	0.1	9.2	11.6	14.4	3.2	362.0	385.2	401.5	49.7
143	5	3.5	3.7	4.0	0.0	9.0	10.4	13.5	1.5	453.9	488.3	517.3	139.5
143	6.25	6.3	6.6	6.9	0.0	10.3	11.2	11.9	0.1	1172.5	1234.3	1284.7	591.8
143	7.5	7.7	7.9	8.1	0.0	15.3	17.7	20.7	2.3	1343.3	1365.6	1385.5	70.1
144	1.25	3.2	3.7	4.2	0.1	10.0	10.6	12.1	0.2	347.9	355.4	363.9	16.6
144	2.5	3.3	3.8	4.2	0.1	9.1	12.2	17.0	6.9	358.6	365.8	376.9	17.6
144	3.75	3.3	3.8	4.2	0.1	9.3	11.7	15.8	4.4	363.6	380.6	398.5	63.3
144	5	3.9	4.0	4.2	0.0	9.0	10.6	13.5	2.0	449.4	482.2	513.3	178.9
144	6.25	6.5	6.7	7.0	0.0	10.7	11.8	13.4	0.4	1077.8	1203.0	1256.8	1217.8
144	7.5	7.9	8.1	8.2	0.0	15.7	18.2	20.0	1.2	1348.6	1370.4	1383.7	57.2
145	1.25	3.3	3.9	4.6	0.2	10.1	10.5	11.4	0.1	324.5	332.2	347.1	23.2
145	2.5	3.4	4.0	4.6	0.2	9.3	11.7	15.5	5.0	333.2	344.8	359.9	54.5
145	3.75	3.5	4.0	4.6	0.1	9.4	11.5	15.3	3.3	345.6	368.0	385.4	88.4
145	5	3.8	4.1	4.2	0.0	9.0	10.4	13.4	1.4	420.8	462.9	504.4	349.4
145	6.25	6.5	6.6	6.9	0.0	11.1	12.1	13.5	0.4	1063.3	1159.0	1207.8	844.3
145	7.5	8.0	8.2	8.4	0.0	16.5	18.8	20.4	0.5	1356.4	1372.9	1384.9	32.1
146	1.25	3.6	4.3	4.9	0.2	10.0	10.5	11.5	0.2	306.6	313.5	322.7	12.3
146	2.5	3.7	4.3	4.9	0.2	9.0	11.9	16.6	6.9	314.5	322.6	335.9	29.0
146	3.75	3.7	4.2	4.7	0.1	9.4	11.7	15.6	4.5	319.5	341.1	360.4	115.4
146	5	3.8	4.1	4.4	0.0	9.0	10.5	14.1	2.2	382.0	417.3	451.0	221.6
146	6.25	6.2	6.6	6.8	0.0	11.1	12.4	14.1	0.7	901.7	1097.0	1171.0	2090.1
146	7.5	8.2	8.4	8.6	0.0	17.7	19.7	21.2	0.8	1358.3	1378.1	1389.8	48.7
147	1.25	3.7	4.2	4.8	0.1	10.0	10.5	11.5	0.2	261.6	281.6	309.2	166.3
147	2.5	3.8	4.3	4.8	0.1	9.0	11.0	14.8	4.0	270.4	289.8	316.4	159.1
147	3.75	3.8	4.3	4.8	0.1	9.6	10.9	13.8	1.7	268.9	293.0	317.6	146.7

Day of year	Depth (m)	Min temp	Mean temp	Max temp	Var temp	Min DO	Mean DO	Max DO	Var DO	Min cond	Mean cond	Max cond	Var cond
147	5	4.0	4.2	4.6	0.0	9.2	10.0	11.5	0.4	301.0	357.3	400.2	647.7
147	6.25	5.6	6.1	6.6	0.0	10.0	11.2	12.4	0.3	721.4	920.5	1139.8	9787.8
147	7.5	8.2	8.5	8.6	0.0	15.5	18.8	21.1	2.1	1334.6	1369.9	1383.0	151.9
148	1.25	3.5	4.0	4.5	0.1	10.1	10.5	11.1	0.1	235.2	244.3	261.6	29.5
148	2.5	3.6	4.0	4.4	0.1	9.1	10.8	14.6	2.5	242.6	251.9	269.7	30.5
148	3.75	3.6	4.1	4.5	0.1	9.7	10.6	13.2	0.7	243.5	251.6	267.8	31.9
148	5	3.6	4.0	4.4	0.1	9.4	10.0	11.0	0.1	251.1	272.7	308.6	121.2
148	6.25	4.8	5.3	5.9	0.1	10.0	10.5	11.3	0.1	469.6	677.4	966.5	13798.5
148	7.5	8.1	8.2	8.3	0.0	14.8	16.0	17.4	0.3	1326.6	1344.7	1363.5	49.2
149	1.25	3.3	3.6	3.9	0.0	10.1	10.7	11.6	0.3	228.9	234.4	243.5	7.8
149	2.5	3.3	3.6	3.9	0.0	9.2	10.9	13.2	1.9	234.7	241.3	249.3	9.1
149	3.75	3.3	3.6	4.0	0.0	9.7	10.7	12.3	0.7	234.4	242.3	253.8	18.1
149	5	3.3	3.6	4.1	0.0	9.1	9.9	10.7	0.2	240.3	271.5	290.7	132.7
149	6.25	4.1	4.4	5.1	0.1	9.9	10.4	11.1	0.1	411.7	470.7	591.4	1030.3
149	7.5	7.9	8.0	8.1	0.0	13.3	14.5	15.7	0.3	1299.4	1327.2	1349.1	96.8
150	1.25	3.2	3.6	4.1	0.1	10.1	10.9	12.8	0.5	225.9	234.6	257.1	36.5
150	2.5	3.2	3.6	4.0	0.1	9.1	11.2	15.1	3.5	234.3	241.8	252.7	23.4
150	3.75	3.3	3.6	4.1	0.1	9.7	11.0	13.9	1.5	234.8	242.5	256.0	26.0
150	5	3.3	3.6	4.0	0.0	9.2	9.9	11.2	0.3	258.3	277.7	305.0	100.3
150	6.25	4.0	4.2	4.3	0.0	9.8	10.3	11.1	0.1	406.0	447.6	507.3	318.3
150	7.5	7.8	7.9	8.0	0.0	12.9	13.8	14.6	0.2	1290.9	1321.2	1342.2	86.9
151	1.25	3.1	3.5	3.7	0.0	10.2	11.0	12.2	0.3	226.3	232.7	237.2	7.4
151	2.5	3.2	3.5	3.7	0.0	9.0	11.2	15.3	3.8	234.3	240.6	245.4	6.6
151	3.75	3.2	3.6	3.8	0.0	9.9	11.2	14.0	1.6	230.6	238.8	243.1	6.8
151	5	3.2	3.6	3.9	0.0	9.1	9.9	11.1	0.2	251.2	274.4	303.5	118.7
151	6.25	3.9	4.1	4.3	0.0	9.8	10.2	11.2	0.1	406.1	435.3	485.0	226.6
151	7.5	7.8	7.9	7.9	0.0	13.0	13.4	13.8	0.0	1285.8	1314.4	1329.9	52.4
152	1.25	3.0	3.5	3.9	0.1	10.2	11.0	12.0	0.3	226.0	232.0	237.1	11.5
152	2.5	3.0	3.5	3.9	0.1	8.9	11.5	16.1	5.7	233.5	239.7	245.0	10.4

Day of year	Depth (m)	Min temp	Mean temp	Max temp	Var temp	Min DO	Mean DO	Max DO	Var DO	Min cond	Mean cond	Max cond	Var cond
152	3.75	3.1	3.5	3.9	0.1	9.8	11.2	14.9	2.2	229.8	238.2	254.9	16.2
152	5	3.2	3.5	3.7	0.0	9.3	10.0	11.6	0.4	247.9	284.4	308.9	171.4
152	6.25	3.8	4.0	4.1	0.0	9.8	10.3	11.5	0.2	407.0	429.0	463.8	147.0
152	7.5	7.6	7.8	7.9	0.0	12.0	13.0	13.6	0.0	1285.3	1308.2	1322.2	53.2
153	1.25	3.2	3.6	4.0	0.1	10.3	11.0	12.1	0.4	225.5	230.8	238.3	7.4
153	2.5	3.2	3.6	4.0	0.1	8.9	11.3	16.6	4.9	232.0	238.8	245.4	6.4
153	3.75	3.3	3.7	4.0	0.1	9.7	11.2	15.0	1.8	228.7	237.6	243.4	10.5
153	5	3.4	3.6	3.9	0.0	9.5	10.2	11.8	0.2	241.1	268.7	296.7	152.1
153	6.25	3.9	4.0	4.1	0.0	9.7	10.1	11.3	0.1	391.7	418.8	452.9	146.9
153	7.5	7.6	7.7	7.8	0.0	12.3	12.9	13.2	0.0	1263.5	1298.4	1313.8	80.0
154	1.25	3.2	3.7	4.3	0.1	10.2	11.0	12.0	0.4	216.1	221.6	226.4	6.3
154	2.5	3.2	3.7	4.2	0.1	8.8	11.6	16.4	6.2	224.6	230.1	236.0	8.2
154	3.75	3.3	3.8	4.3	0.1	9.7	11.1	13.8	1.7	221.2	229.6	236.9	14.6
154	5	3.2	3.7	4.1	0.1	9.7	10.2	11.0	0.1	232.3	246.1	264.0	34.6
154	6.25	3.8	4.1	4.3	0.0	9.7	10.5	11.6	0.3	297.5	370.9	416.0	612.1
154	7.5	7.4	7.6	7.7	0.0	12.0	12.8	14.2	0.1	1257.8	1284.1	1313.1	113.3
155	1.25	3.4	3.9	4.5	0.1	10.1	10.7	12.0	0.4	206.2	213.0	223.1	15.7
155	2.5	3.4	3.9	4.5	0.1	8.6	10.7	15.7	5.5	212.8	219.3	228.3	13.2
155	3.75	3.5	4.0	4.5	0.1	9.4	10.6	13.9	1.5	207.9	216.3	232.4	16.7
155	5	3.5	3.9	4.3	0.1	9.8	10.0	10.7	0.0	211.3	227.2	252.2	57.3
155	6.25	3.7	4.0	4.3	0.0	10.4	10.8	11.9	0.1	237.9	283.3	350.6	380.7
155	7.5	7.1	7.4	7.6	0.0	11.7	12.9	13.9	0.1	1202.2	1266.4	1292.0	222.7
156	1.25	3.4	3.7	4.0	0.0	10.0	10.4	11.5	0.1	188.5	195.8	207.3	15.4
156	2.5	3.4	3.7	4.0	0.0	8.2	8.9	10.0	0.2	193.4	200.7	211.6	14.2
156	3.75	3.5	3.8	4.1	0.0	9.0	9.5	9.8	0.0	187.8	196.6	207.9	20.4
156	5	3.4	3.7	4.0	0.0	9.6	9.8	10.1	0.0	191.1	202.0	216.2	38.4
156	6.25	3.5	3.8	4.1	0.0	10.3	10.5	11.0	0.0	200.3	225.1	251.6	152.7
156	7.5	4.0	6.2	7.3	1.0	10.5	11.8	13.0	0.4	250.5	962.5	1276.0	103889.0

Day of year	Depth (m)	Min temp	Mean temp	Max temp	Var temp	Min DO	Mean DO	Max DO	Var DO	Min cond	Mean cond	Max cond	Var cond
157	1.25	3.2	3.7	4.1	0.1	10.0	10.4	11.3	0.1	181.4	187.3	197.4	15.4
157	2.5	3.2	3.6	4.1	0.1	7.2	8.2	9.3	0.3	185.0	192.6	200.0	17.1
157	3.75	3.3	3.7	4.2	0.1	8.8	9.0	9.3	0.0	179.1	188.4	202.9	26.8
157	5	3.2	3.6	4.1	0.1	9.2	9.4	9.6	0.0	181.1	192.9	212.8	56.4
157	6.25	3.3	3.7	4.1	0.1	9.4	10.0	10.6	0.1	192.7	209.7	236.2	98.2
157	7.5	3.4	3.8	4.3	0.1	10.7	11.1	11.5	0.0	192.6	235.8	474.9	1994.1
158	1.25	3.4	3.7	4.0	0.1	10.2	10.6	11.4	0.1	175.8	181.0	186.5	8.3
158	2.5	3.4	3.7	4.0	0.1	7.2	7.9	8.7	0.2	181.1	185.9	192.3	8.1
158	3.75	3.4	3.7	4.1	0.1	8.7	8.9	9.3	0.0	176.0	181.3	191.1	10.3
158	5	3.3	3.6	4.0	0.0	9.3	9.4	9.6	0.0	177.3	183.2	192.2	9.4
158	6.25	3.4	3.7	4.0	0.0	9.3	9.8	10.1	0.0	186.3	194.1	204.5	11.8
158	7.5	3.4	3.7	4.0	0.0	11.1	11.4	11.5	0.0	184.4	191.2	206.7	11.1
159	1.25	3.2	3.7	4.4	0.2	10.2	10.6	11.6	0.1	175.8	182.7	191.7	25.9
159	2.5	3.1	3.7	4.4	0.2	6.7	7.8	9.3	0.5	179.2	186.9	195.3	28.4
159	3.75	3.2	3.8	4.4	0.2	8.3	8.8	9.3	0.1	174.9	182.5	192.7	27.5
159	5	3.1	3.7	4.3	0.2	8.8	9.4	9.6	0.0	175.9	184.5	193.8	29.1
159	6.25	3.2	3.7	4.4	0.2	9.1	9.7	10.0	0.0	183.7	194.9	209.2	36.4
159	7.5	3.2	3.8	4.4	0.2	11.1	11.4	11.5	0.0	181.8	191.2	205.0	36.2
160	1.25	3.5	4.0	4.5	0.1	10.3	10.6	11.0	0.1	178.0	183.4	189.9	12.1
160	2.5	3.5	4.0	4.5	0.1	5.6	7.4	9.2	0.8	182.2	188.0	193.7	13.1
160	3.75	3.5	4.0	4.5	0.1	8.2	8.8	9.9	0.2	176.4	183.8	196.0	17.2
160	5	3.4	3.9	4.4	0.1	9.5	9.8	10.1	0.0	178.5	186.0	198.1	21.3
160	6.25	3.5	4.0	4.5	0.1	9.3	9.6	9.8	0.0	187.5	196.6	209.6	25.3
160	7.5	3.6	4.0	4.5	0.1	11.3	11.4	11.5	0.0	182.9	191.9	201.5	25.3
161	1.25	3.8	4.4	5.2	0.2	10.2	10.4	10.7	0.0	151.6	171.3	180.1	54.8
161	2.5	3.8	4.4	5.2	0.2	6.8	7.8	9.2	0.5	155.3	175.1	183.3	45.2
161	3.75	3.9	4.4	5.2	0.2	8.0	8.6	9.3	0.1	153.9	171.0	177.8	30.2
161	5	3.8	4.4	5.1	0.2	7.9	9.4	9.9	0.3	153.3	171.5	179.4	40.9
161	6.25	3.9	4.4	5.2	0.2	6.7	9.3	10.2	0.8	160.1	180.2	189.6	47.8

Day of year	Depth (m)	Min temp	Mean temp	Max temp	Var temp	Min DO	Mean DO	Max DO	Var DO	Min cond	Mean cond	Max cond	Var cond
161	7.5	3.9	4.4	5.2	0.2	9.2	11.2	11.5	0.2	153.5	174.9	185.5	58.8
162	1.25	3.8	4.1	4.6	0.1	10.2	10.4	10.6	0.0	149.4	155.2	164.3	16.1
162	2.5	3.8	4.1	4.6	0.1	5.8	7.3	8.3	0.3	152.6	177.5	288.2	983.4
162	3.75	3.8	4.2	4.6	0.1	8.5	9.0	9.4	0.1	151.6	159.3	174.0	23.5
162	5	3.7	4.1	4.5	0.1	6.8	7.1	7.8	0.0	151.1	158.6	166.4	22.6
162	6.25	3.8	4.1	4.6	0.1	4.9	5.3	6.4	0.1	159.3	168.1	178.0	24.2
162	7.5	3.8	4.2	4.6	0.1	6.8	7.9	9.0	0.4	153.2	161.7	172.7	26.4
163	1.25	3.6	4.3	5.1	0.3	10.1	10.4	10.9	0.1	153.5	160.0	169.8	27.4
163	2.5	3.6	4.3	5.2	0.3	5.5	6.4	7.4	0.3	158.1	164.9	185.9	32.0
163	3.75	3.6	4.3	5.2	0.3	8.6	9.3	9.7	0.1	157.0	163.2	172.3	26.0
163	5	3.5	4.2	5.1	0.3	6.4	6.9	7.3	0.0	156.0	162.2	171.4	25.1
163	6.25	3.6	4.3	5.2	0.3	5.0	5.5	6.1	0.1	164.9	171.8	181.7	29.2
163	7.5	3.6	4.3	5.2	0.3	5.7	6.8	7.6	0.2	158.7	166.1	176.6	28.7
164	1.25	1.7	3.3	4.4	0.7	10.1	10.4	10.7	0.0	153.9	160.4	196.7	36.4
164	2.5	1.7	3.3	4.5	0.7	5.9	6.8	7.7	0.1	155.3	160.7	165.1	7.0
164	3.75	1.8	3.4	4.5	0.7	8.3	8.8	9.7	0.1	154.7	159.9	179.8	14.1
164	5	1.7	3.3	4.4	0.7	6.6	7.8	9.1	0.6	153.3	158.4	162.7	6.0
164	6.25	1.8	3.4	4.5	0.6	5.8	7.0	8.6	0.6	162.2	168.3	174.4	7.4
164	7.5	1.9	3.4	4.5	0.6	6.2	7.2	8.5	0.3	158.2	163.4	169.2	5.0
165	1.25	1.4	1.8	2.4	0.1	10.5	10.8	11.3	0.1	154.6	167.6	185.4	72.4
165	2.5	1.4	1.8	2.4	0.1	6.6	7.5	8.5	0.2	156.5	169.5	183.6	72.0
165	3.75	1.4	1.9	2.4	0.1	9.1	9.6	10.0	0.1	155.8	169.3	186.9	73.5
165	5	1.4	1.8	2.4	0.1	8.3	9.2	9.6	0.1	154.9	169.2	189.1	68.6
165	6.25	1.5	1.9	2.4	0.1	7.4	8.3	9.0	0.2	162.7	181.4	201.4	94.5
165	7.5	1.5	1.9	2.5	0.1	7.6	8.4	9.0	0.1	157.1	177.0	198.4	100.1
166	1.25	2.4	3.0	3.7	0.3	10.1	10.7	11.2	0.1	180.1	195.2	211.5	94.4
166	2.5	2.4	2.9	3.7	0.3	5.4	7.3	8.5	0.5	182.8	198.0	214.0	92.6
166	3.75	2.4	3.0	3.7	0.3	8.1	8.9	9.6	0.2	181.9	197.7	218.3	82.7
166	5	2.4	2.9	3.6	0.2	8.4	9.1	9.5	0.1	184.3	199.8	218.5	86.2

Day of year	Depth (m)	Min temp	Mean temp	Max temp	Var temp	Min DO	Mean DO	Max DO	Var DO	Min cond	Mean cond	Max cond	Var cond
166	6.25	2.4	2.9	3.6	0.2	7.3	8.3	9.2	0.2	198.9	216.7	236.7	125.4
166	7.5	2.5	2.9	3.7	0.2	7.9	9.1	9.8	0.2	197.6	221.6	251.4	238.0
167	1.25	3.1	3.7	4.3	0.2	10.0	10.4	10.8	0.1	203.2	214.4	230.2	53.6
167	2.5	3.1	3.7	4.3	0.2	5.6	7.1	7.8	0.4	206.7	218.1	230.6	52.4
167	3.75	3.2	3.7	4.4	0.2	6.8	8.0	8.6	0.2	207.3	219.7	236.1	60.9
167	5	3.2	3.6	4.2	0.1	7.6	8.7	9.1	0.1	212.2	228.6	247.0	64.1
167	6.25	3.2	3.7	4.3	0.1	7.7	8.8	9.2	0.1	231.6	246.4	261.0	54.6
167	7.5	3.3	3.7	4.3	0.1	8.4	9.5	10.0	0.1	237.3	255.2	276.9	55.8
168	1.25	3.5	4.2	5.1	0.3	10.1	10.3	10.7	0.0	169.2	200.2	217.8	178.1
168	2.5	3.4	4.2	5.1	0.3	5.9	7.9	10.4	2.0	174.7	204.5	220.2	159.7
168	3.75	3.5	4.2	5.2	0.4	7.0	8.6	10.5	1.0	174.7	204.0	223.1	152.2
168	5	3.4	4.1	5.1	0.4	8.5	9.5	10.5	0.3	172.7	207.0	239.5	218.7
168	6.25	3.5	4.2	5.2	0.3	6.1	9.0	9.8	0.6	183.1	220.9	247.7	286.0
168	7.5	3.5	4.2	5.2	0.3	9.8	10.3	10.8	0.1	176.9	217.3	245.1	362.1
169	1.25	3.5	4.0	4.5	0.1	10.2	10.3	10.5	0.0	159.6	167.1	176.7	13.6
169	2.5	3.5	4.0	4.5	0.1	10.4	10.5	10.7	0.0	162.8	171.8	234.9	62.3
169	3.75	3.5	4.1	4.6	0.1	10.4	10.5	10.7	0.0	162.7	171.5	182.7	20.4
169	5	3.5	4.0	4.5	0.1	10.0	10.4	10.5	0.0	163.1	171.3	181.3	17.5
169	6.25	3.5	4.0	4.5	0.1	9.0	9.6	10.0	0.1	174.2	183.1	190.8	13.8
169	7.5	3.6	4.0	4.6	0.1	8.1	9.2	9.9	0.3	170.1	175.2	182.8	8.4
170	1.25	3.3	4.0	5.0	0.4	10.1	10.4	10.8	0.0	158.5	169.0	180.0	41.6
170	2.5	3.3	4.0	5.0	0.4	10.2	10.5	10.7	0.0	161.3	172.2	183.2	44.4
170	3.75	3.3	4.1	5.0	0.4	10.0	10.4	10.7	0.1	160.1	171.9	184.9	41.2
170	5	3.3	4.0	5.0	0.4	8.3	10.1	10.5	0.3	161.3	170.5	183.1	32.2
170	6.25	3.3	4.0	5.0	0.4	7.1	9.1	10.2	0.7	172.2	185.8	205.7	58.0
170	7.5	3.3	4.0	5.0	0.4	5.6	7.4	8.2	0.7	164.6	184.8	212.3	146.8
171	1.25	3.7	4.1	4.4	0.1	10.2	10.4	10.8	0.0	167.4	177.2	190.2	27.6
171	2.5	3.7	4.1	4.4	0.1	10.3	10.5	10.6	0.0	172.5	182.6	212.4	66.2
171	3.75	3.8	4.1	4.5	0.1	9.7	10.1	10.3	0.0	172.5	183.3	199.4	46.4

Day of year	Depth (m)	Min temp	Mean temp	Max temp	Var temp	Min DO	Mean DO	Max DO	Var DO	Min cond	Mean cond	Max cond	Var cond
171	5	3.7	4.1	4.5	0.1	8.3	9.2	9.7	0.1	170.2	182.9	202.6	78.8
171	6.25	3.7	4.1	4.5	0.1	7.2	8.3	9.1	0.3	181.5	200.5	224.9	108.2
171	7.5	3.7	4.1	4.5	0.1	5.6	6.2	7.0	0.1	179.7	206.9	237.2	130.5
172	1.25	3.7	4.3	4.9	0.2	10.1	10.4	10.7	0.0	179.5	187.3	206.3	37.4
172	2.5	3.7	4.3	4.9	0.2	10.3	10.5	10.8	0.0	182.0	190.7	207.6	41.7
172	3.75	3.8	4.3	5.0	0.2	8.9	10.2	10.4	0.0	181.5	192.8	210.8	73.7
172	5	3.7	4.2	4.9	0.2	8.4	9.6	10.1	0.1	178.2	193.7	221.0	129.7
172	6.25	3.8	4.3	4.9	0.2	7.4	9.1	10.3	0.5	191.6	210.8	240.8	173.2
172	7.5	3.8	4.3	5.0	0.2	6.3	7.5	8.6	0.5	187.0	213.9	241.5	211.7
173	1.25	4.2	4.6	5.1	0.1	10.0	10.3	10.8	0.0	174.0	182.4	191.6	10.2
173	2.5	4.2	4.6	5.1	0.1	10.2	10.4	10.5	0.0	178.5	186.9	195.5	11.0
173	3.75	4.3	4.7	5.1	0.1	10.3	10.4	10.6	0.0	178.1	185.9	196.7	12.0
173	5	4.2	4.6	5.1	0.1	10.0	10.2	10.3	0.0	175.6	183.2	194.6	15.4
173	6.25	4.3	4.6	5.1	0.1	9.9	10.5	10.8	0.0	186.9	197.3	222.8	38.4
173	7.5	4.3	4.6	5.1	0.1	6.4	7.7	9.0	0.4	182.7	195.3	221.6	80.8
174	1.25	4.0	4.3	4.7	0.0	10.1	10.4	10.8	0.1	168.1	174.0	182.4	9.4
174	2.5	4.0	4.3	4.7	0.0	10.3	10.4	10.5	0.0	171.6	179.5	187.5	13.8
174	3.75	4.1	4.4	4.7	0.0	10.2	10.4	10.5	0.0	171.0	180.1	258.1	78.2
174	5	4.0	4.3	4.7	0.0	10.1	10.2	10.2	0.0	170.5	177.4	183.5	10.4
174	6.25	4.1	4.4	4.7	0.0	9.9	10.6	11.0	0.1	181.5	190.3	198.0	13.4
174	7.5	4.1	4.4	4.8	0.0	7.8	9.2	9.8	0.3	175.8	188.1	202.6	32.4
175	1.25	3.0	3.6	4.1	0.1	10.0	10.6	11.2	0.2	173.5	183.0	196.0	44.7
175	2.5	3.0	3.6	4.1	0.1	10.4	10.6	10.9	0.0	178.3	190.2	207.0	52.8
175	3.75	3.1	3.7	4.1	0.1	10.4	10.6	10.8	0.0	178.7	192.4	209.0	55.9
175	5	3.1	3.6	4.1	0.1	9.2	10.3	10.5	0.0	180.2	196.3	223.3	117.4
175	6.25	3.2	3.7	4.1	0.1	9.5	10.6	11.2	0.2	195.7	231.0	289.0	616.8
175	7.5	3.3	3.7	4.2	0.1	9.2	9.7	10.0	0.0	199.2	252.1	300.6	651.1
176	1.25	3.5	4.3	5.3	0.4	9.8	11.0	12.4	0.6	189.6	203.9	218.0	71.7
176	2.5	3.5	4.3	5.2	0.4	10.3	10.6	11.0	0.0	196.6	210.0	226.1	77.1

Day of year	Depth (m)	Min temp	Mean temp	Max temp	Var temp	Min DO	Mean DO	Max DO	Var DO	Min cond	Mean cond	Max cond	Var cond
176	3.75	3.6	4.3	5.2	0.3	10.3	10.6	10.9	0.0	196.9	212.2	230.9	64.0
176	5	3.7	4.1	4.9	0.2	9.8	10.1	10.4	0.0	204.2	252.5	295.8	429.0
176	6.25	3.8	4.0	4.6	0.0	8.9	9.7	10.4	0.1	279.5	321.7	366.4	549.5
176	7.5	3.8	4.0	4.3	0.0	9.5	9.8	10.1	0.0	290.9	330.7	361.6	377.9
177	1.25	4.3	5.2	6.2	0.5	9.8	10.8	12.6	0.6	206.6	215.1	224.9	10.1
177	2.5	4.2	5.1	6.2	0.4	10.1	10.5	11.1	0.1	212.5	221.9	233.6	12.6
177	3.75	4.3	5.2	6.2	0.4	10.0	10.5	10.9	0.1	211.7	224.5	240.6	25.6
177	5	4.3	4.9	5.9	0.3	9.7	10.1	10.4	0.0	223.6	266.0	311.1	400.1
177	6.25	4.3	4.7	5.6	0.1	8.7	9.9	10.5	0.1	282.1	355.9	379.4	544.5
177	7.5	4.3	4.5	4.7	0.0	9.3	9.6	10.1	0.0	355.1	374.8	389.4	52.7
178	1.25	4.4	5.4	6.4	0.5	9.8	10.4	11.2	0.2	192.2	203.7	214.1	28.0
178	2.5	4.4	5.4	6.4	0.5	10.0	10.5	11.4	0.2	196.9	212.0	233.5	36.6
178	3.75	4.5	5.5	6.5	0.4	10.1	10.3	10.8	0.0	196.5	213.8	230.5	41.8
178	5	4.6	5.3	6.3	0.3	9.9	10.2	10.6	0.0	197.1	222.8	258.2	174.8
178	6.25	4.7	5.3	6.2	0.2	9.1	10.3	10.9	0.2	211.0	276.2	320.5	827.5
178	7.5	4.6	5.0	6.0	0.1	9.4	9.9	10.6	0.1	207.0	315.9	380.5	1498.7
179	1.25	4.9	5.2	5.7	0.0	9.9	10.3	10.9	0.1	183.0	188.7	196.4	10.6
179	2.5	4.9	5.1	5.7	0.1	10.0	10.3	11.3	0.1	187.0	193.8	204.3	14.5
179	3.75	4.9	5.2	5.7	0.1	10.2	10.3	10.6	0.0	186.0	193.6	204.1	17.0
179	5	4.8	5.1	5.7	0.1	10.2	10.2	10.3	0.0	186.7	197.1	220.3	46.2
179	6.25	4.9	5.2	5.7	0.1	10.0	10.7	11.0	0.0	198.3	211.4	229.1	73.9
179	7.5	4.9	5.2	5.7	0.1	10.2	10.4	10.7	0.0	199.3	222.3	249.1	258.2

Henretta Lake Profile Data



Brief summary

12 Sep 2022

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DRAFT

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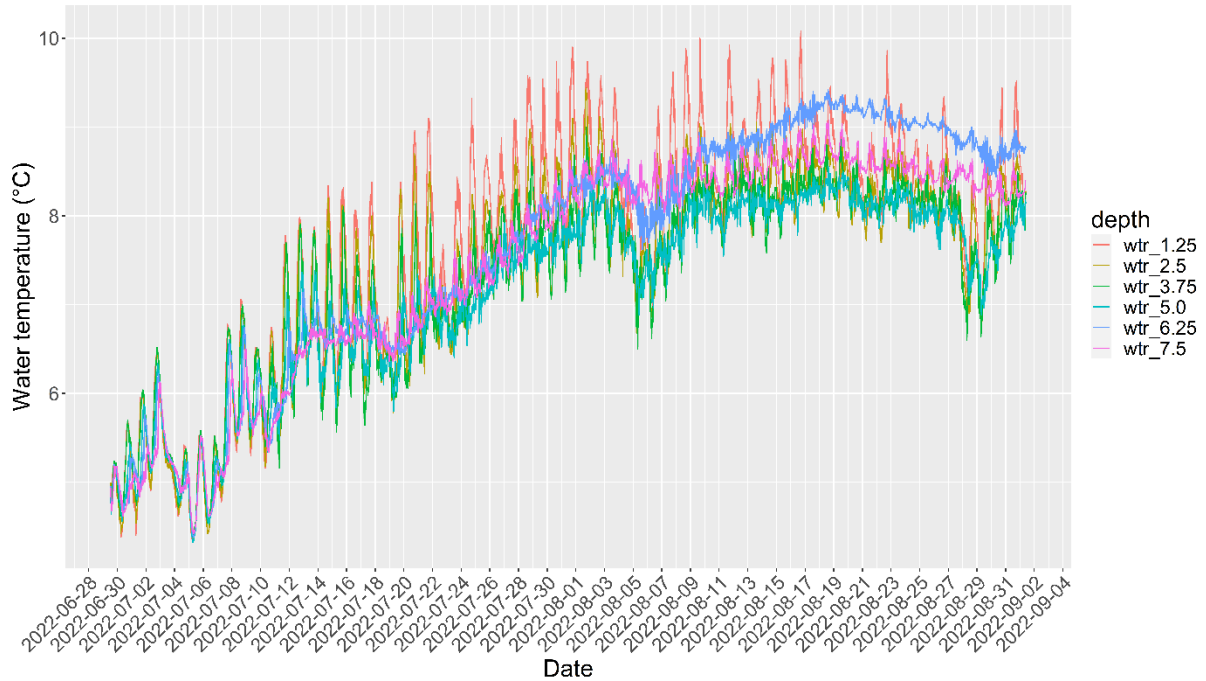


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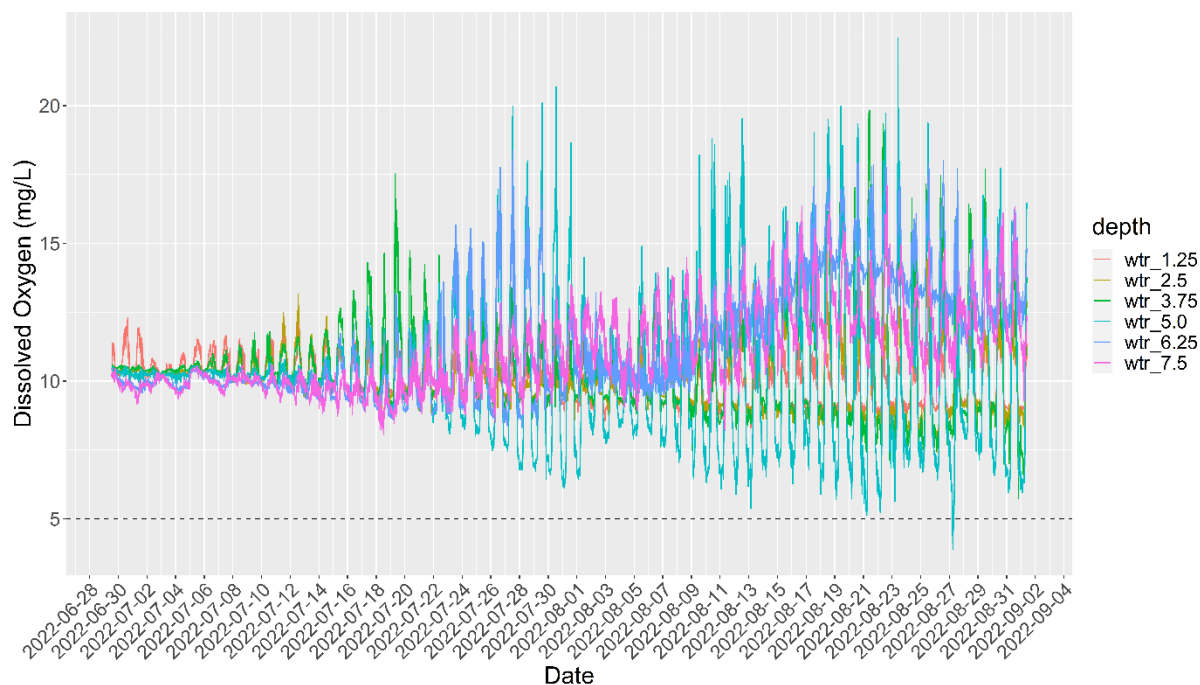


Figure 2. Dissolved Oxygen data obtained from six loggers at various depths in Henretta Lake (site 3) between June 29 and September 01, 2022. Dates along the x-axis in yyyy-mm-dd format. Of particular interest is the increasing diel ranges, potentially a signature of increasing algae growth, either in the water column or in the sensor cavity. Copper cages around the sensor have now been installed to minimize growth. The DO level only drops below 5 mg/L (the dashed horizontal line) once on August 27.

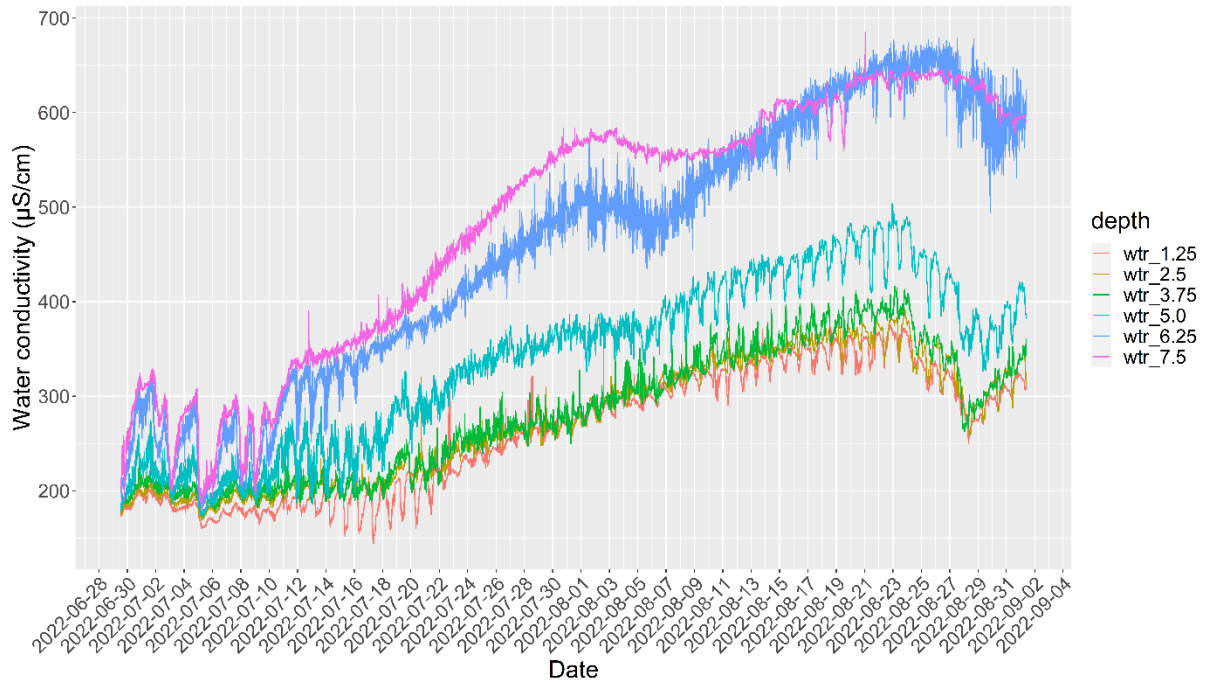


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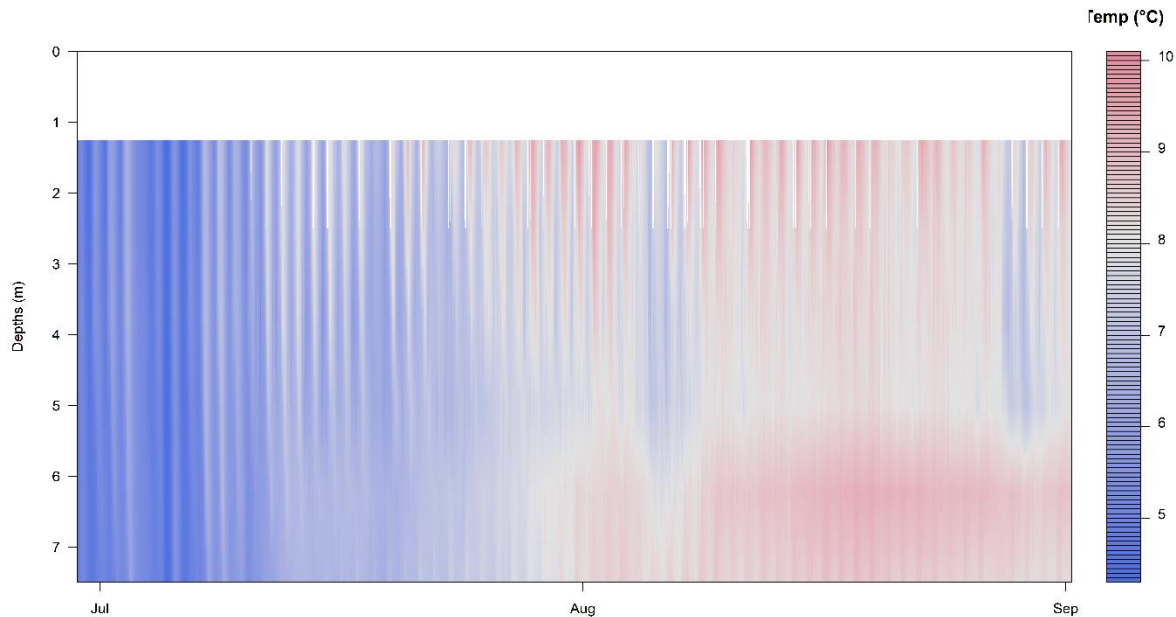


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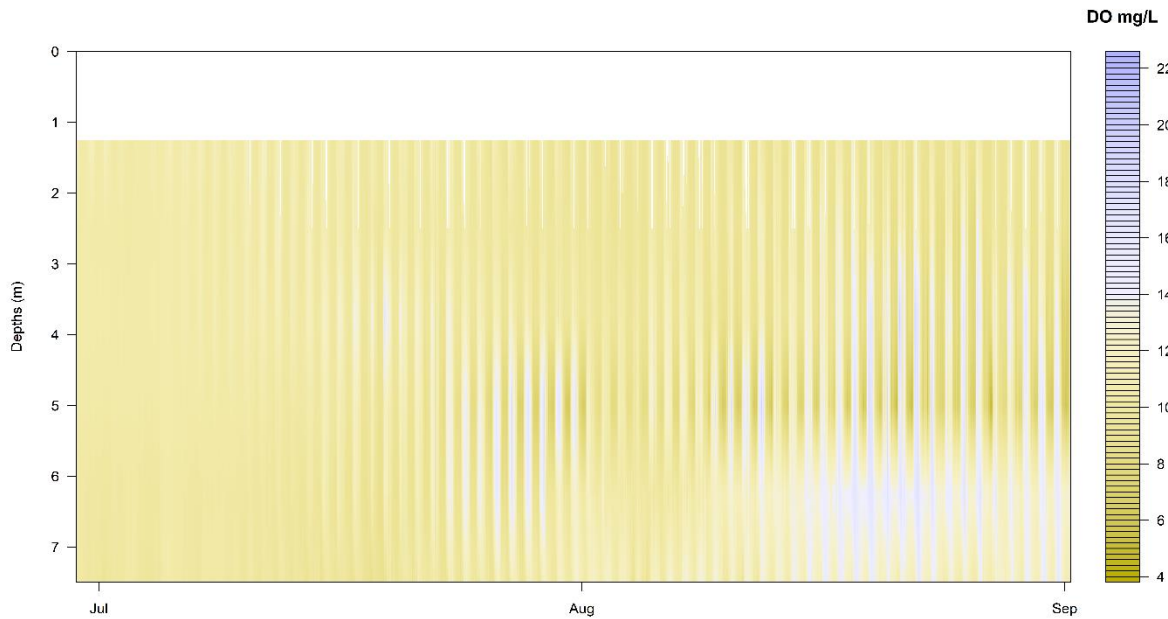


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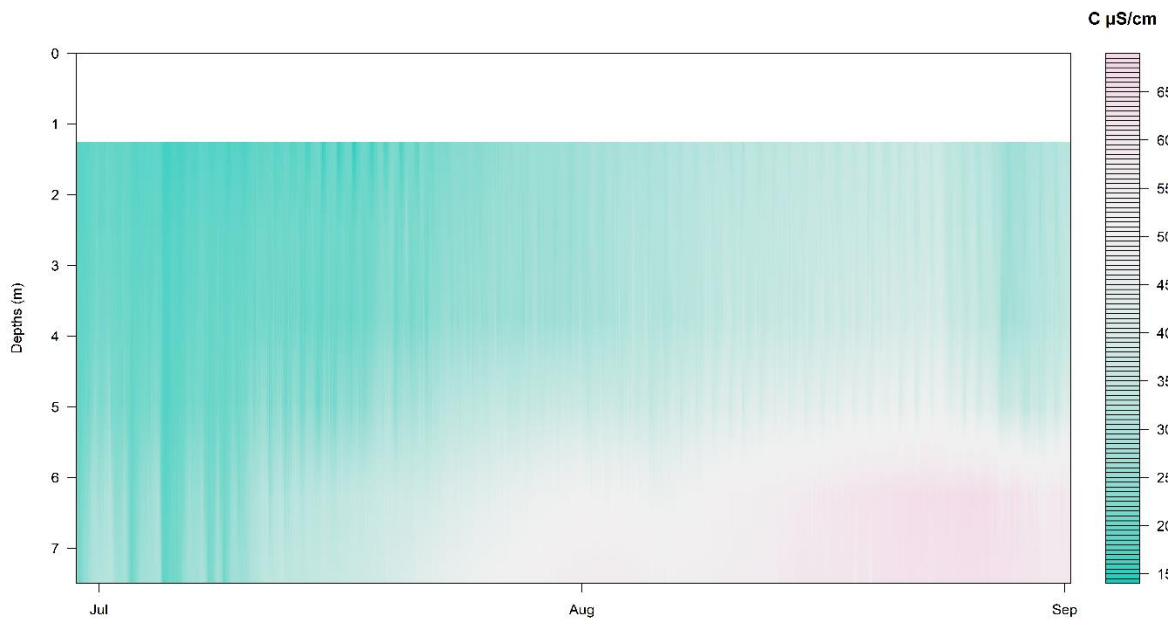


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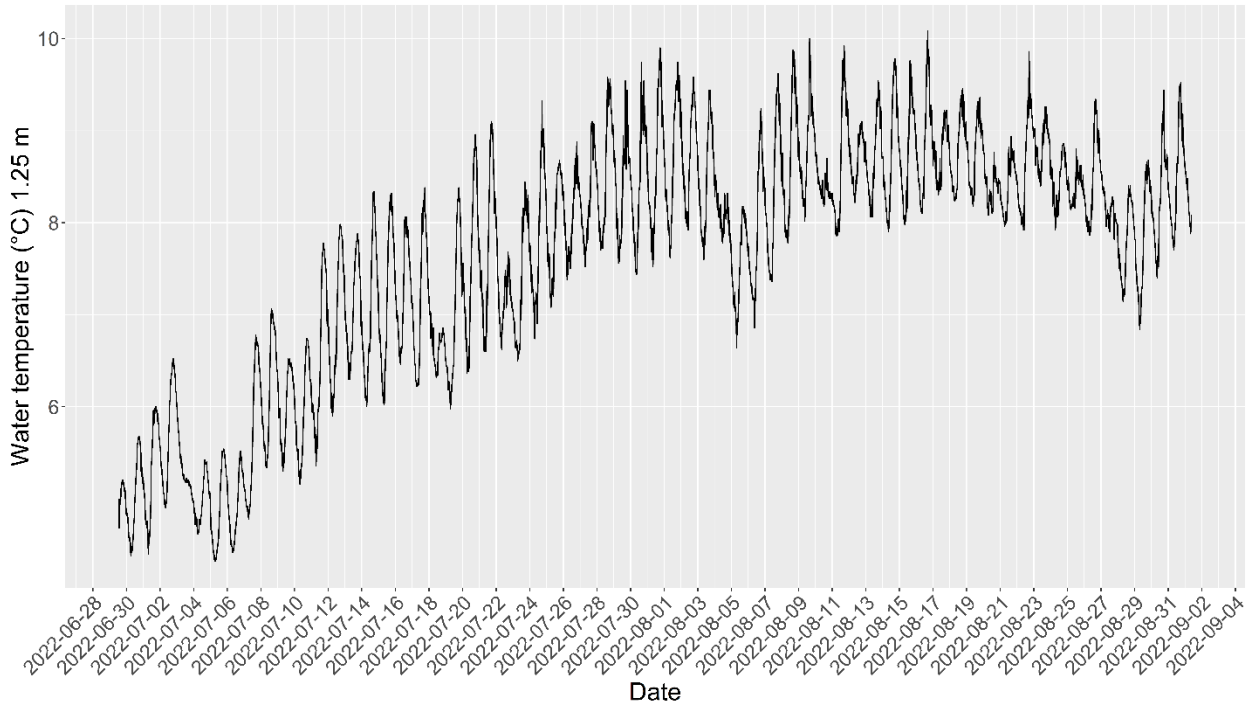


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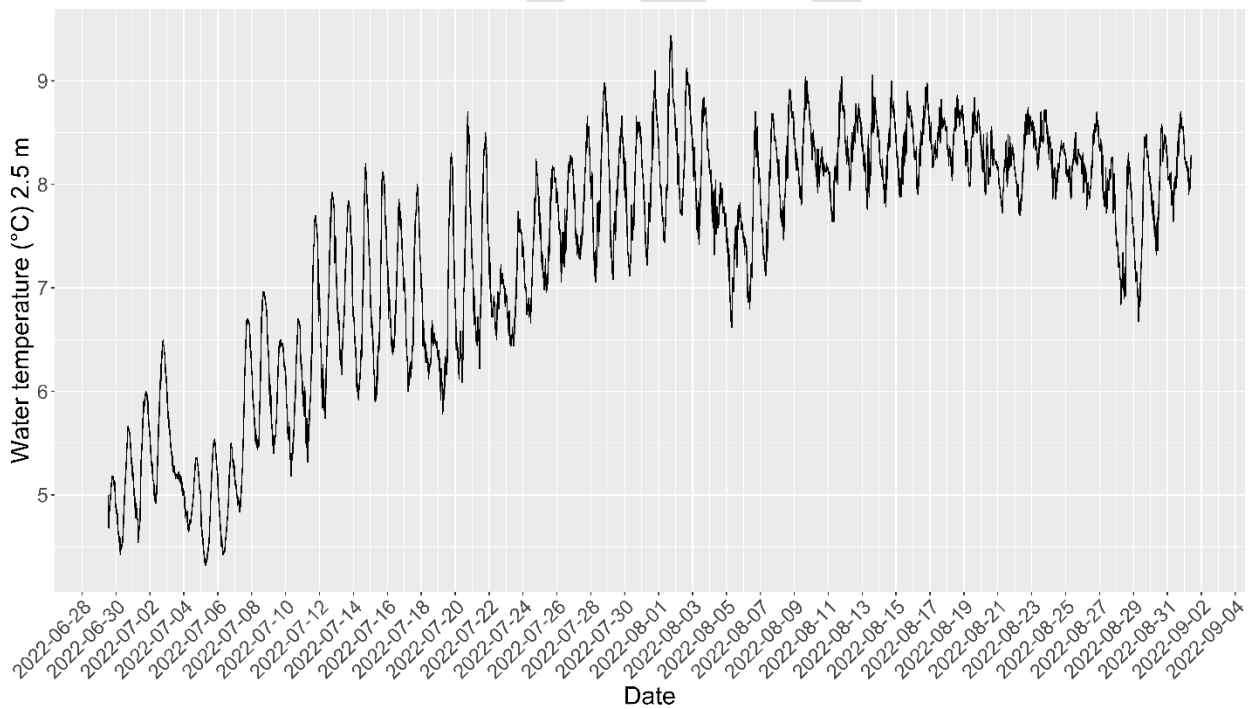


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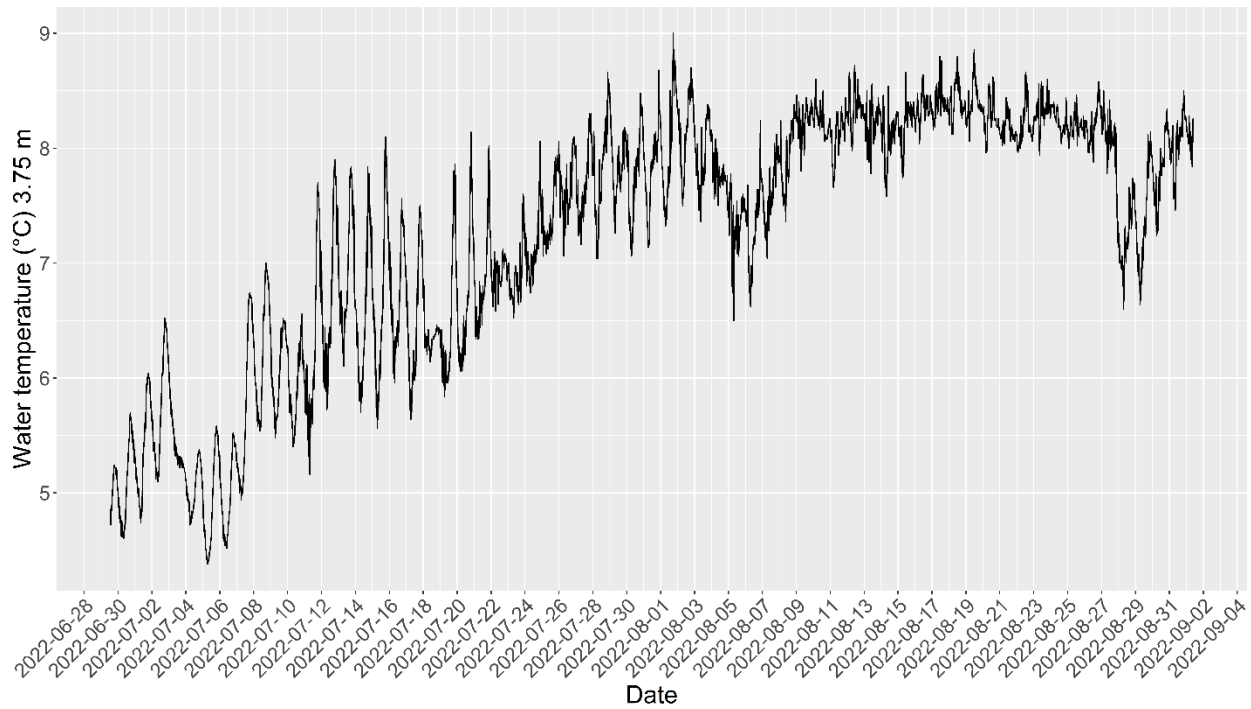


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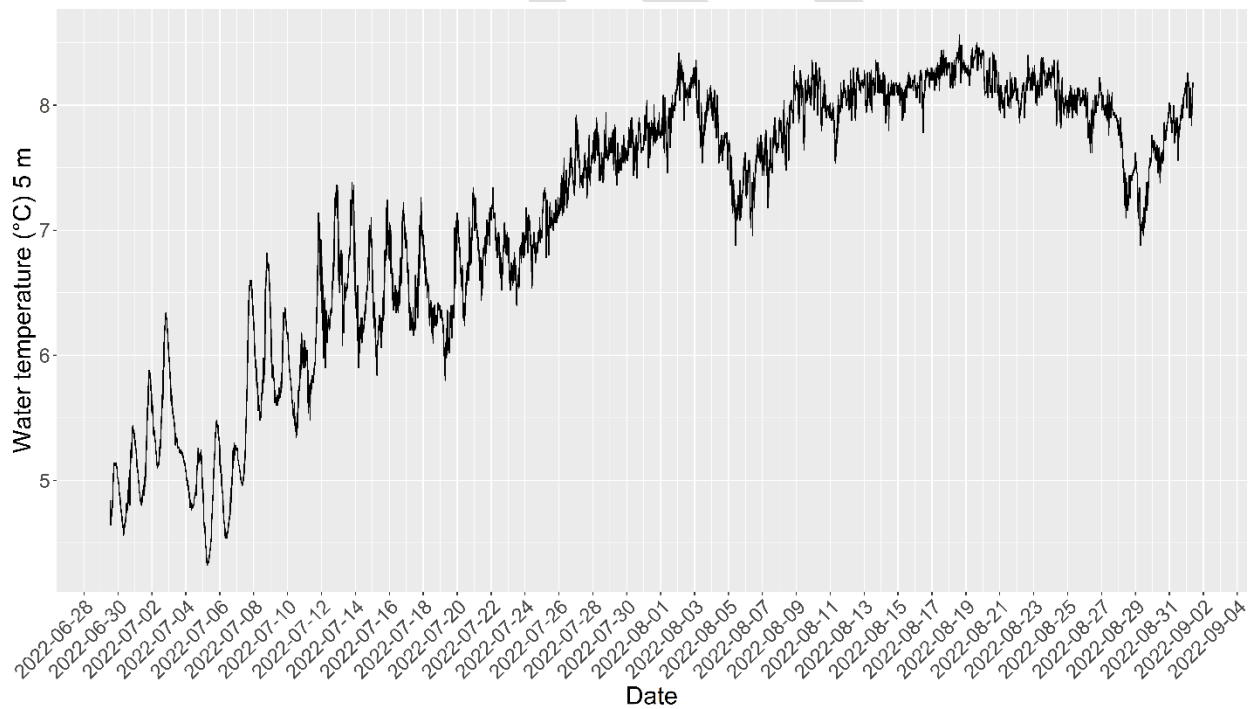


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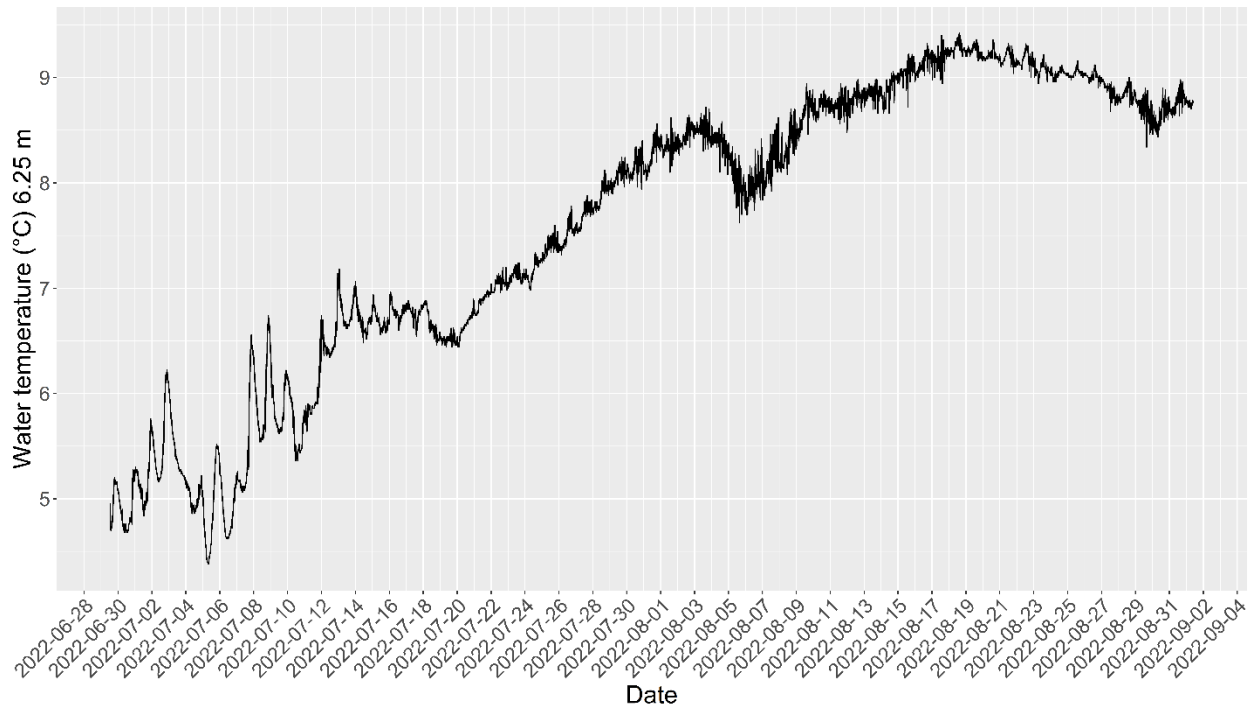


Figure 11. Water temperature at 6.25 m depth at site 3, Henretta Lake.

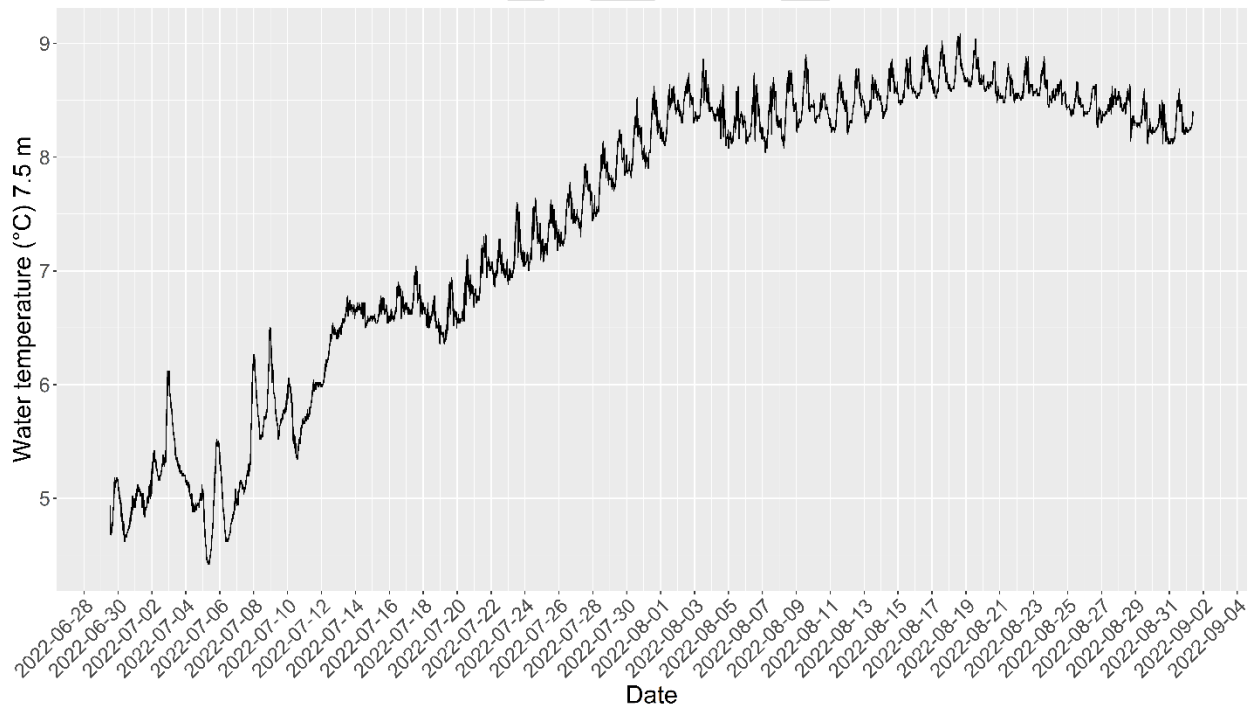


Figure 12. Water temperature at 7.5 m depth at site 3, Henretta Lake.

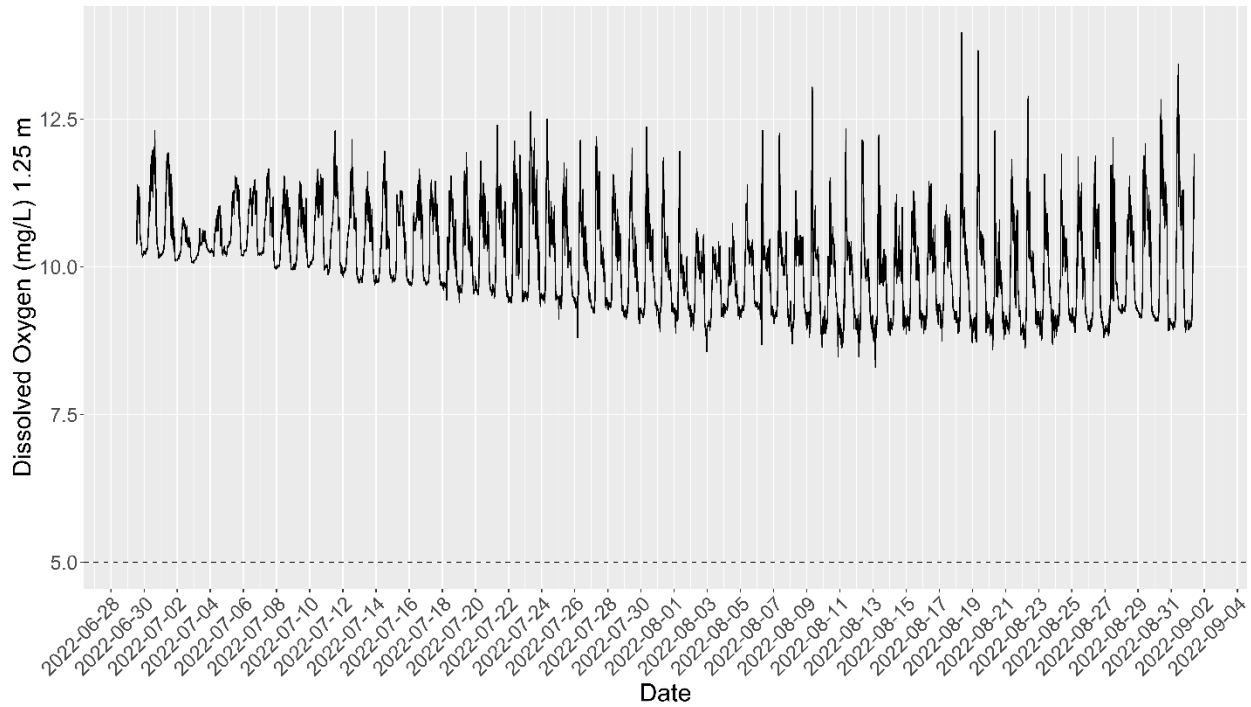


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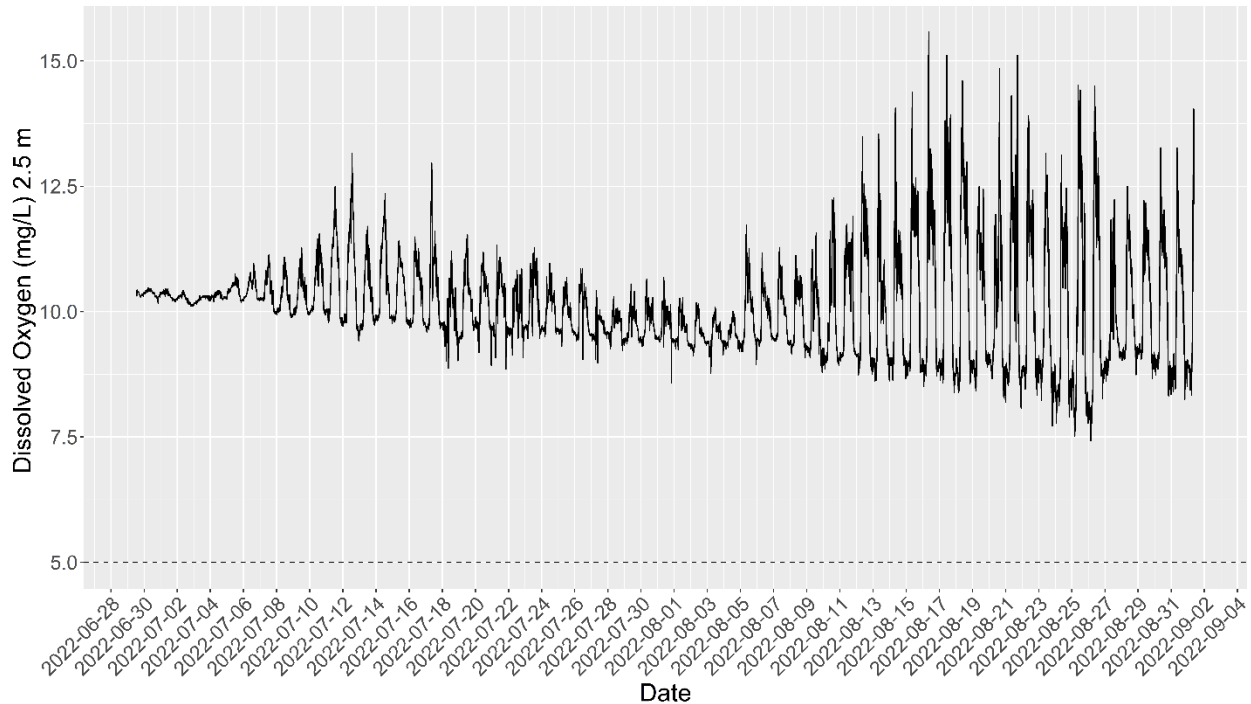


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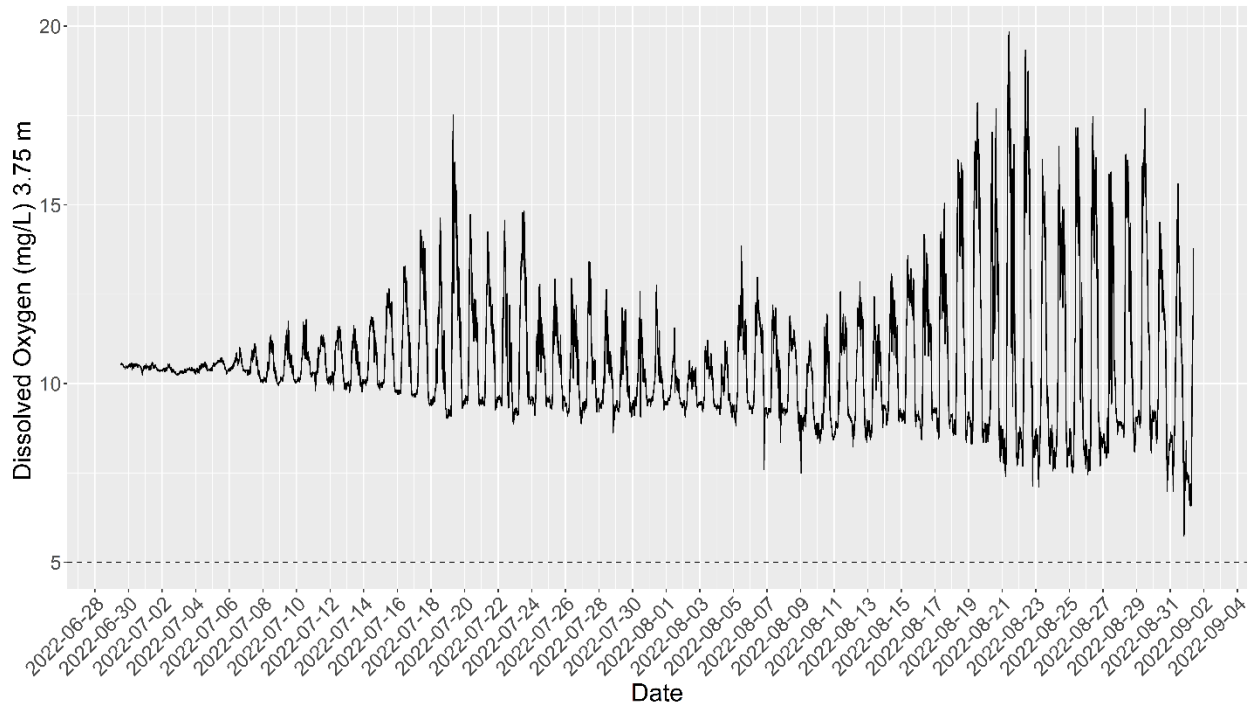


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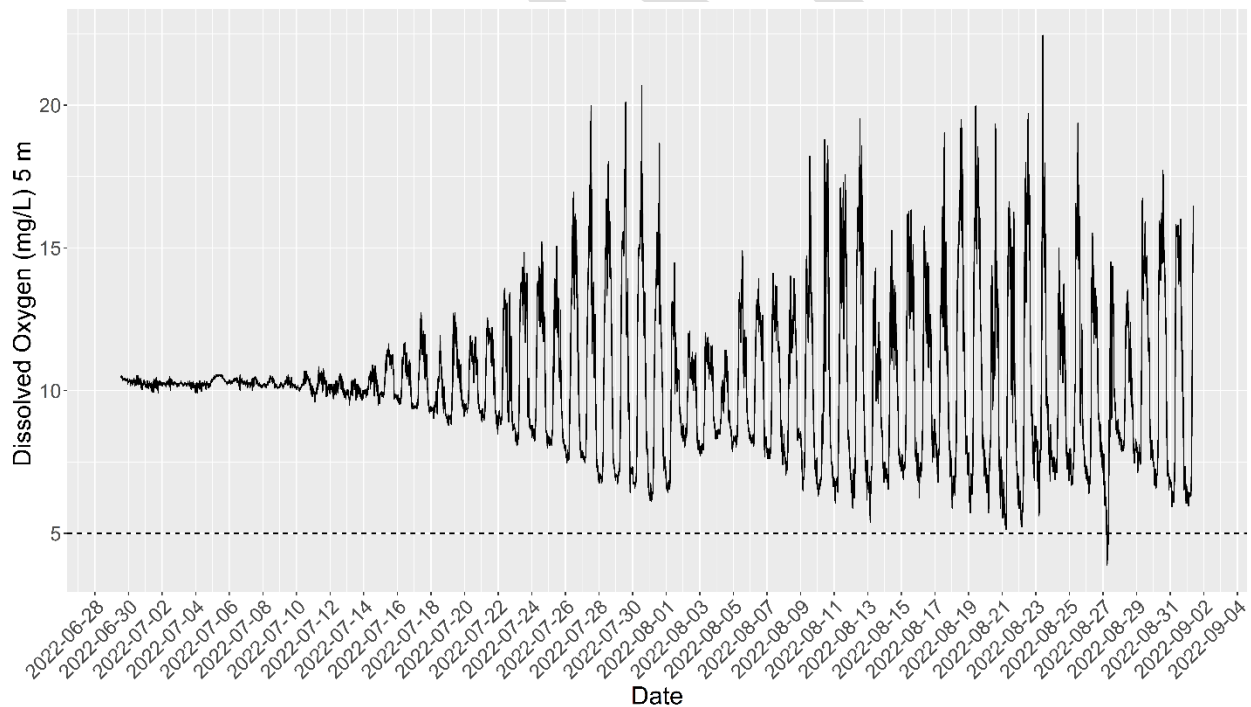


Figure 16. Dissolved Oxygen at 5 m depth at site 3, Henretta Lake.

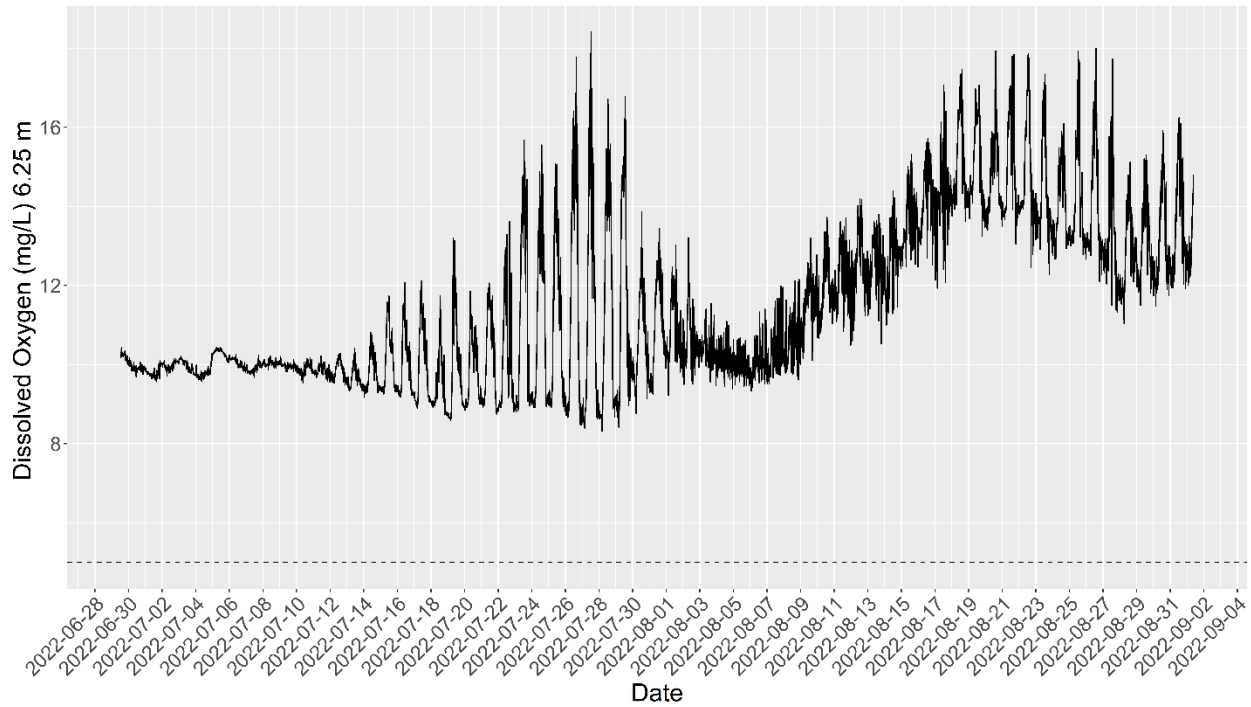


Figure 17. Dissolved Oxygen at 6.25 m depth at site 3, Henretta Lake.

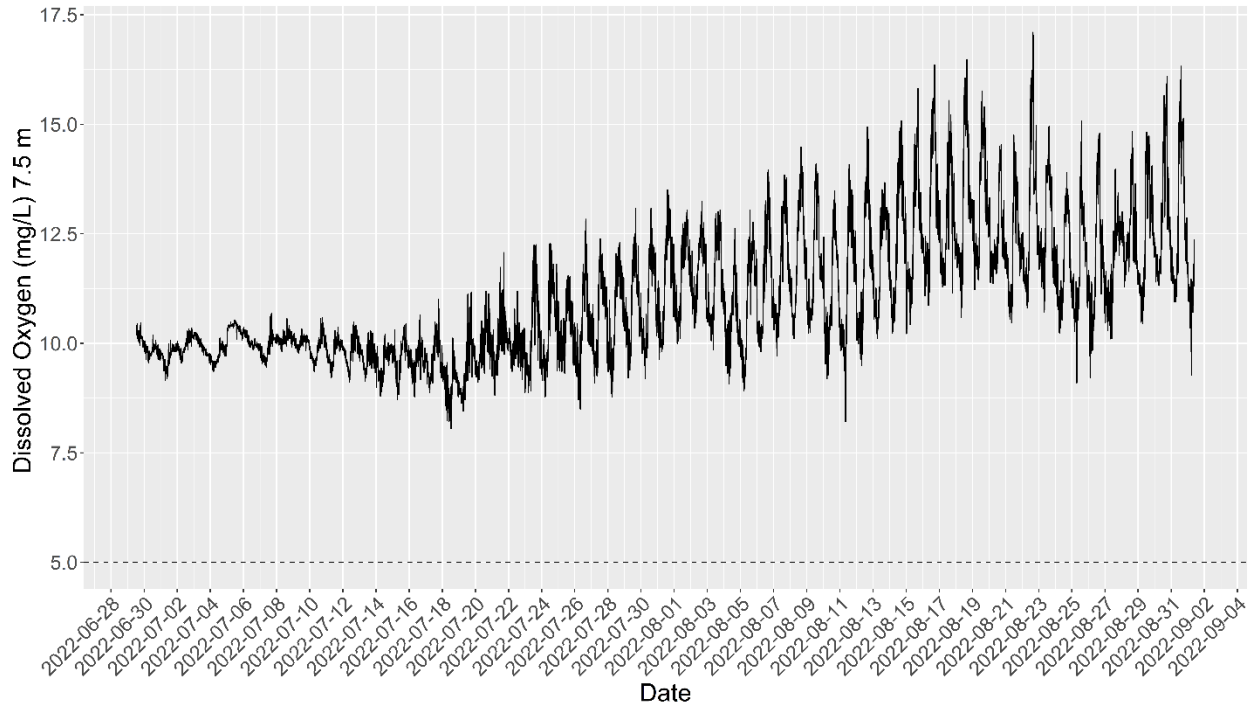


Figure 18. Dissolved Oxygen at 7.5 m depth at site 3, Henretta Lake.

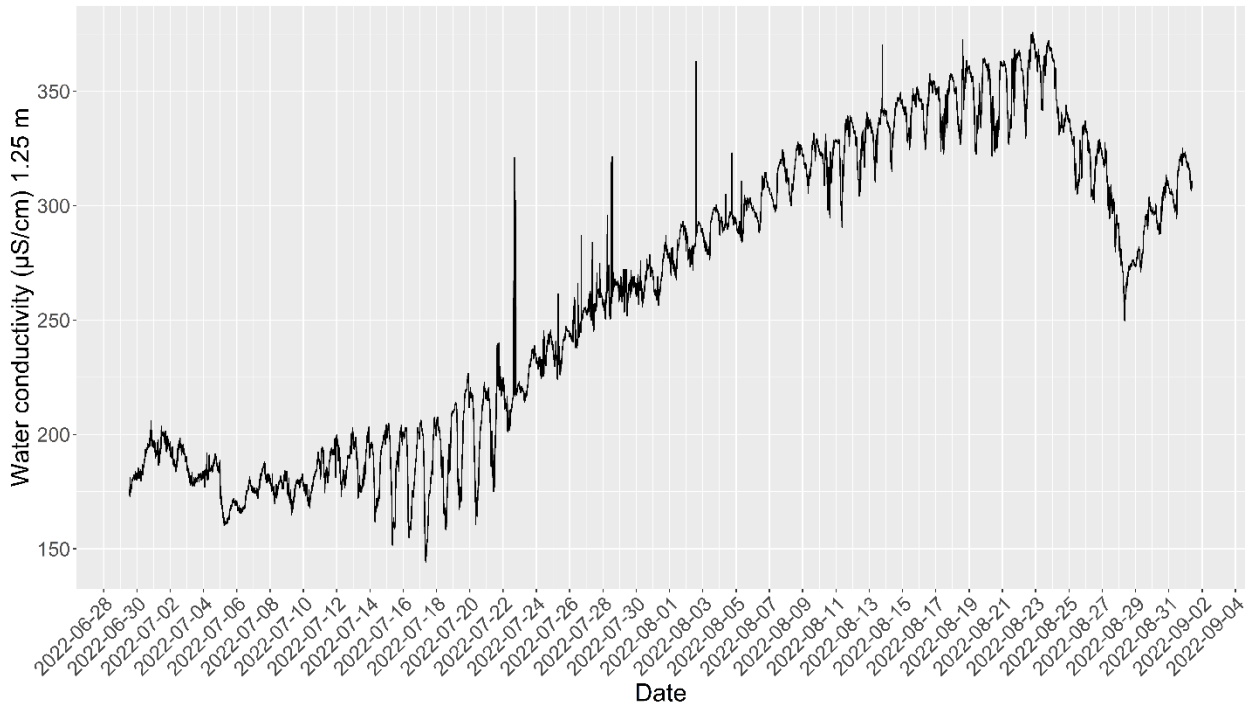


Figure 19. Conductivity at 1.25 m depth at site 3, Henretta Lake.

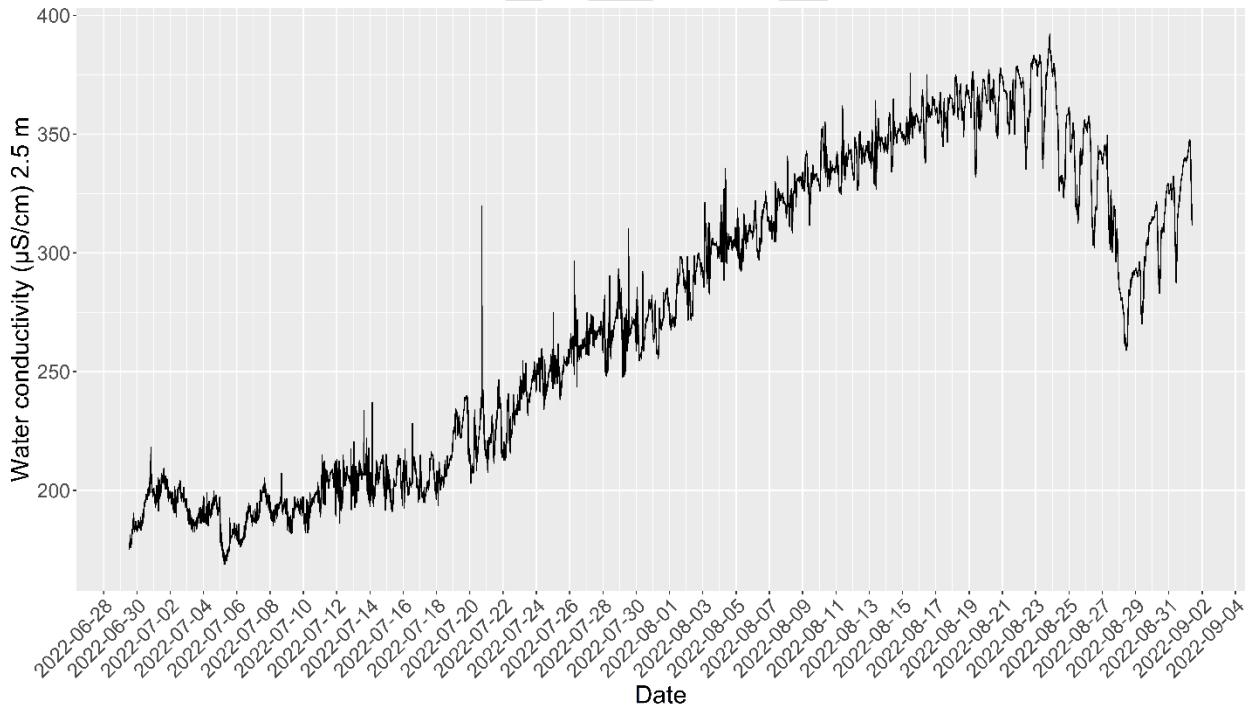


Figure 20. Conductivity at 2.5 m depth at site 3, Henretta Lake.

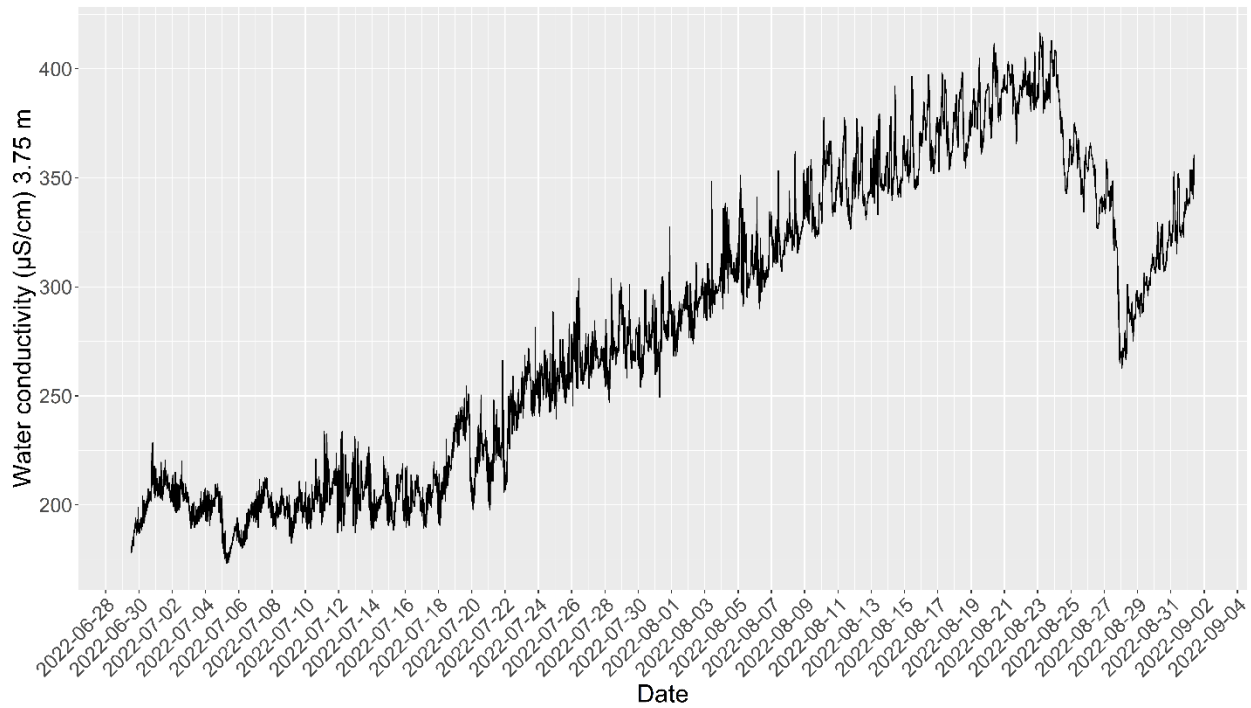


Figure 21. Conductivity at 3.75 m depth at site 3, Henretta Lake.

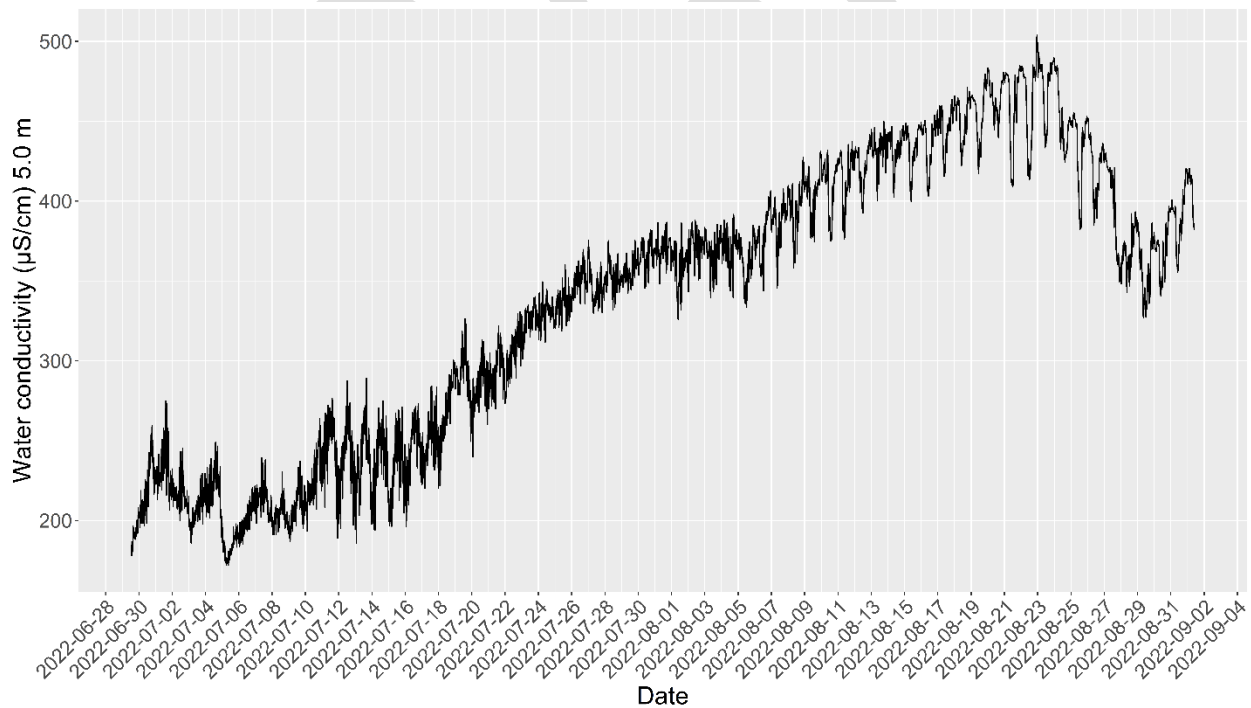


Figure 22. Conductivity at 5 m depth at site 3, Henretta Lake.

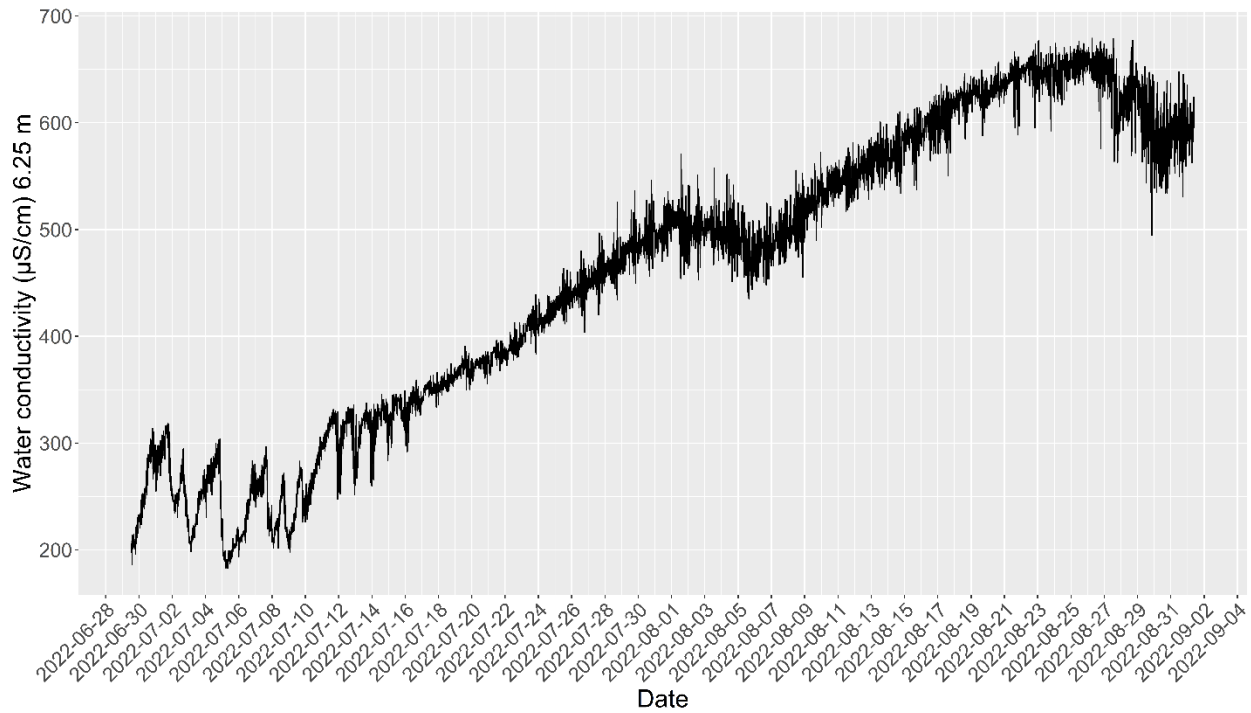


Figure 23. Conductivity at 6.25 m depth at site 3, Henretta Lake.

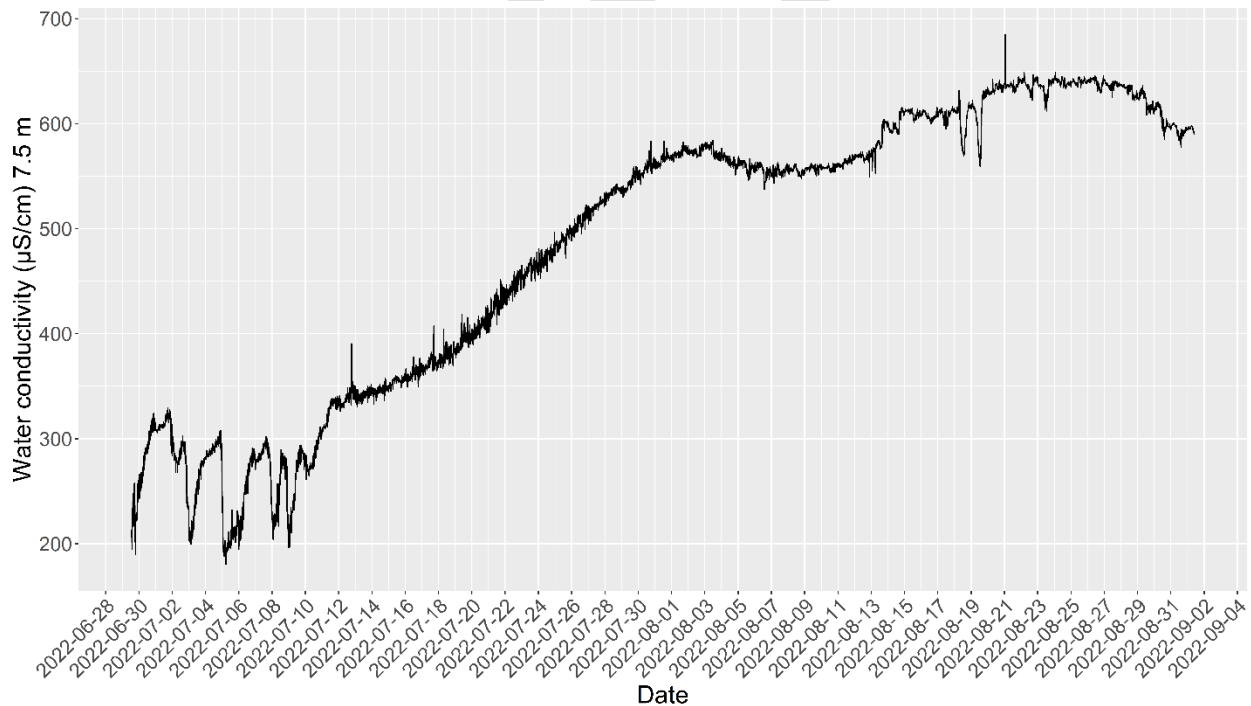


Figure 24. Conductivity at 7.5 m depth at site 3, Henretta Lake.

Table 1. Summary statistics of the temperature, DO, and conductivity data (minimum, maximum, mean, and variance) per depth for each day of the study.

day	dept h	min_t emp	mean_temp	max_t emp	var_t emp	temp_range	min_DO	mean_DO	max_DO	var_DO	DO_range	min_CO	mean_CO	max_CO	var_CO	CO_range
180	wtr_1.25	4.68	5.053023	5.2	0.017179	0.52	10.17	10.63558	11.39	0.185606	1.22	172.9	179.5163	183.7	7.509014	10.8
180	wtr_2.5	4.68	5.028372	5.18	0.018766	0.5	10.29	10.34767	10.43	0.001275	0.14	175	182.5209	190.4	14.12931	15.4
180	wtr_3.75	4.72	5.071628	5.24	0.0257	0.52	10.41	10.49	10.57	0.001667	0.16	177.7	187.5349	198.9	20.7209	21.2
180	wtr_5.0	4.64	4.975814	5.14	0.029611	0.5	10.23	10.39698	10.52	0.004222	0.29	177.9	192.1186	208	52.47393	30.1
180	wtr_6.25	4.7	4.996744	5.2	0.033389	0.5	10	10.20907	10.43	0.010504	0.43	186.5	211.8209	232.9	113.3012	46.4
180	wtr_7.5	4.68	4.973488	5.18	0.03388	0.5	9.92	10.14884	10.46	0.017239	0.54	190	230.3302	260.3	277.2512	70.3
181	wtr_1.25	4.38	5.017292	5.68	0.191172	1.3	10.15	10.86365	12.3	0.433183	2.15	179.7	189.8469	205.8	44.43262	26.1
181	wtr_2.5	4.42	5.0175	5.66	0.171446	1.24	10.17	10.36208	10.47	0.003981	0.3	182.7	194.1583	218.2	65.20309	35.5
181	wtr_3.75	4.6	5.090417	5.7	0.135436	1.1	10.24	10.48354	10.57	0.003903	0.33	186.8	201.4094	228.5	89.59938	41.7

1 8 1	wtr_ 5.0	4.56	4.9308 33	5.44	0.067 78	0.88	10.0 3	10.29 156	10.5 3	0.007 655	0.5	195. 4	220.8 635	259. 4	259.9 36	64
1 8 1	wtr_ 6.25	4.68	4.8675	5.28	0.030 225	0.6	9.69	9.914 792	10.1 6	0.007 05	0.47	220. 5	266.3 833	313. 7	679.6 18	93.2
1 8 1	wtr_ 7.5	4.62	4.8391 67	5.12	0.018 947	0.5	9.56	9.830 625	10.1 8	0.011 501	0.62	243. 2	289.4 958	324. 2	455.5 05	81
1 8 2	wtr_ 1.25	4.4	5.3267 37	6	0.292 065	1.6	10.1	10.75 032	11.9 3	0.355 378	1.83	186. 5	195.3 354	203. 5	13.07 6	17
1 8 2	wtr_ 2.5	4.54	5.3360 42	6	0.244 426	1.46	10.2	10.32 25	10.4 6	0.004 823	0.26	191. 3	200.6 323	209. 3	14.26 495	18
1 8 2	wtr_ 3.75	4.74	5.4052 08	6.04	0.186 848	1.3	10.3 4	10.44 208	10.5 9	0.003 884	0.25	201. 4	208.8 99	220. 5	16.43 758	19.1
1 8 2	wtr_ 5.0	4.8	5.2227 08	5.88	0.128 089	1.08	9.92	10.20 406	10.4 6	0.011 433	0.54	206. 7	233.1 583	274. 8	218.0 435	68.1
1 8 2	wtr_ 6.25	4.84	5.1781 25	5.76	0.055 765	0.92	9.57	9.795 313	10.1 1	0.012 958	0.54	250. 3	290.4 052	318. 3	329.5 594	68
1 8 2	wtr_ 7.5	4.84	5.0072 92	5.18	0.005 07	0.34	9.16	9.692 604	10.0 7	0.038 668	0.91	286. 2	314.1 792	329. 3	45.21 388	43.1
1 8 3	wtr_ 1.25	4.9	5.705	6.52	0.334 931	1.62	10.0 7	10.38 323	10.8 3	0.055 803	0.76	183. 7	190.9 958	198. 5	11.31 661	14.8
1 8 3	wtr_ 2.5	4.92	5.6893 75	6.5	0.297 061	1.58	10.1 1	10.24 573	10.4 2	0.007 109	0.31	188. 9	197.0 281	204. 2	11.43 973	15.3

1 8 3	wtr_ 3.75	5.1	5.7575	6.52	0.238 731	1.42	10.2 4	10.37 198	10.5 4	0.005 456	0.3	196. 6	204.9 844	220	18.10 828	23.4
1 8 3	wtr_ 5.0	5.1	5.6154 17	6.34	0.176 711	1.24	10.0 2	10.24 708	10.4 8	0.003 943	0.46	199. 8	217.2 875	245. 4	83.04 026	45.6
1 8 3	wtr_ 6.25	5.16	5.5510 42	6.22	0.129 607	1.06	9.71	9.974 271	10.1 5	0.009 027	0.44	216. 9	251.8 729	294. 6	230.7 138	77.7
1 8 3	wtr_ 7.5	5.16	5.3854 17	6.12	0.068 13	0.96	9.55	9.955 313	10.3 5	0.036 737	0.8	232. 9	279.1 583	302. 8	330.9 601	69.9
1 8 4	wtr_ 1.25	4.96	5.3066 67	6.02	0.065 513	1.06	10.0 7	10.33 083	10.6 5	0.023 37	0.58	177. 3	181.1 375	189. 9	5.314 789	12.6
1 8 4	wtr_ 2.5	5	5.3179 17	6.04	0.063 979	1.04	10.1 2	10.25 313	10.3 2	0.002 893	0.2	182. 7	188.2 49	197. 4	7.287 999	14.7
1 8 4	wtr_ 3.75	5.12	5.4268 75	6.08	0.056 858	0.96	10.2 7	10.36 219	10.4 5	0.002 228	0.18	189. 3	196.6 323	207. 6	16.02 179	18.3
1 8 4	wtr_ 5.0	5.08	5.3891 67	6	0.058 105	0.92	9.94	10.22 135	10.3 3	0.004 184	0.39	185. 9	206.4 563	229. 4	72.98 207	43.5
1 8 4	wtr_ 6.25	5.16	5.4495 83	6.08	0.063 082	0.92	9.72	9.967 5	10.2 1	0.020 931	0.49	198. 2	233.0 688	274. 9	389.8 327	76.7
1 8 4	wtr_ 7.5	5.16	5.4414 58	6.12	0.069 695	0.96	9.55	9.937 708	10.2 5	0.035 054	0.7	199. 6	246.4 198	282. 4	768.1 039	82.8
1 8 5	wtr_ 1.25	4.62	4.9860 42	5.42	0.064 287	0.8	10.1 8	10.47 708	11.0 3	0.074 103	0.85	177	185.3 385	192	9.023 446	15

1 8 5	wtr_ 2.5	4.64	4.9816 67	5.36	0.050 742	0.72	10.2	10.31 292	10.4 2	0.002 909	0.22	185. 1	192.3 25	199. 7	11.23 832	14.6
1 8 5	wtr_ 3.75	4.72	5.0485 42	5.38	0.038 28	0.66	10.3	10.43 031	10.5 9	0.005 331	0.29	190. 6	200.9 052	209. 5	18.32 618	18.9
1 8 5	wtr_ 5.0	4.76	4.9756 25	5.26	0.022 2	0.5	9.92	10.19 792	10.3 9	0.009 236	0.47	189. 4	220.3 813	248. 9	149.7 582	59.5
1 8 5	wtr_ 6.25	4.86	5.0227 08	5.22	0.010 186	0.36	9.58	9.785 313	10.2 7	0.019 261	0.69	212. 4	270.6 021	303. 7	381.5 053	91.3
1 8 5	wtr_ 7.5	4.88	5.0027 08	5.16	0.006 59	0.28	9.36	9.723 854	10.1 2	0.032 538	0.76	268. 1	290.1 677	308	44.62 326	39.9
1 8 6	wtr_ 1.25	4.32	4.8860 42	5.54	0.201 963	1.22	10.1 8	10.77 625	11.5 4	0.205 935	1.36	160. 2	167.0 063	188. 6	21.13 217	28.4
1 8 6	wtr_ 2.5	4.32	4.8664 58	5.54	0.189 562	1.22	10.1 8	10.43 375	10.7 5	0.018 611	0.57	168. 9	177.6 646	195. 9	25.09 536	27
1 8 6	wtr_ 3.75	4.38	4.9191 67	5.58	0.183 351	1.2	10.2 7	10.52 604	10.7 3	0.012 807	0.46	173. 2	182.7 281	200. 8	34.64 667	27.6
1 8 6	wtr_ 5.0	4.32	4.8408 33	5.48	0.169 616	1.16	10.2 1	10.43 073	10.5 6	0.010 099	0.35	171. 9	183.5 208	199. 8	45.55 282	27.9
1 8 6	wtr_ 6.25	4.38	4.8875	5.52	0.164 634	1.14	10.0 5	10.29 177	10.4 3	0.010 794	0.38	182. 7	199.0 594	229. 1	96.62 075	46.4
1 8 6	wtr_ 7.5	4.42	4.8881 25	5.52	0.156 14	1.1	9.94	10.35 073	10.5 3	0.012 441	0.59	180. 4	205.9 26	251. 8	165.6 855	71.4

1 8 7	wtr_ 1.25	4.42	4.9112 5	5.52	0.130 735	1.1	10.1 9	10.75 052	11.4 8	0.192 942	1.29	165. 4	171.7 313	181. 4	22.13 628	16
1 8 7	wtr_ 2.5	4.42	4.9018 75	5.5	0.125 508	1.08	10.2 2	10.46 198	10.9 6	0.035 067	0.74	176. 2	184.3 792	194. 7	30.44 209	18.5
1 8 7	wtr_ 3.75	4.52	4.9785 42	5.52	0.111 926	1	10.3 2	10.55 01	11.0 1	0.027 603	0.69	180	190.1 896	201. 9	40.62 915	21.9
1 8 7	wtr_ 5.0	4.54	4.8937 5	5.3	0.066 024	0.76	10.0 2	10.32 292	10.5 6	0.005 897	0.54	183. 4	201.0 833	221. 5	93.61 761	38.1
1 8 7	wtr_ 6.25	4.62	4.8681 25	5.3	0.045 285	0.68	9.81	10.04 583	10.2 6	0.012 648	0.45	193. 6	234.3 896	283. 6	499.6 009	90
1 8 7	wtr_ 7.5	4.62	4.8625	5.36	0.040 895	0.74	9.83	10.03 375	10.3 7	0.016 767	0.54	194. 6	254.4 24	291	740.5 079	96.4
1 8 8	wtr_ 1.25	4.78	5.7175	6.78	0.581 644	2	9.96	10.66 271	11.6 6	0.262 077	1.7	172. 1	179.6 833	187. 9	17.32 73	15.8
1 8 8	wtr_ 2.5	4.84	5.7135 42	6.7	0.528 114	1.86	9.96	10.40 552	11.1 3	0.099 69	1.17	186. 2	194.7 583	205. 3	25.63 804	19.1
1 8 8	wtr_ 3.75	4.94	5.7689 58	6.74	0.473 919	1.8	10.0 5	10.49 083	11.1 2	0.100 627	1.07	189. 8	202.6 729	212. 4	27.80 221	22.6
1 8 8	wtr_ 5.0	4.96	5.6308 33	6.6	0.405 145	1.64	10	10.25 802	10.4 9	0.010 378	0.49	198. 3	213.2 094	239. 2	74.50 991	40.9
1 8 8	wtr_ 6.25	5.06	5.4939 58	6.56	0.284 119	1.5	9.68	9.902 083	10.2 4	0.011 394	0.56	212. 9	256.3 448	296. 3	436.8 305	83.4

1 8 8	wtr_ 7.5	4.94	5.2604 17	6.26	0.100 539	1.32	9.45	9.905 208	10.6 8	0.072 118	1.23	230. 1	283.2 281	302. 1	182.5 018	72
1 8 9	wtr_ 1.25	5.34	6.2010 42	7.06	0.354 117	1.72	9.95	10.53 563	11.5 4	0.248 311	1.59	169. 7	177.7 573	184. 1	9.176 157	14.4
1 8 9	wtr_ 2.5	5.44	6.2020 83	6.96	0.309 048	1.52	9.89	10.30 25	11.0 8	0.123 964	1.19	185. 3	192.0 521	207. 1	9.727 996	21.8
1 8 9	wtr_ 3.75	5.54	6.2393 75	7	0.253 023	1.46	9.94	10.42 688	11.3 5	0.176 31	1.41	188. 9	197.6 323	207. 7	13.23 042	18.8
1 8 9	wtr_ 5.0	5.48	6.0527 08	6.82	0.191 243	1.34	10.0 7	10.24 531	10.5 2	0.013 318	0.45	191	202.3 417	230. 3	54.00 077	39.3
1 8 9	wtr_ 6.25	5.54	5.9831 25	6.74	0.152 247	1.2	9.87	10.03 281	10.2 2	0.004 515	0.35	201. 5	228.2 698	271. 8	385.2 373	70.3
1 8 9	wtr_ 7.5	5.52	5.8491 67	6.5	0.079 511	0.98	9.81	10.09 49	10.5 6	0.013 804	0.75	204. 2	247.8 448	289. 6	696.3 097	85.4
1 9 0	wtr_ 1.25	5.3	6.015	6.52	0.158 712	1.22	9.95	10.51 563	11.4 5	0.209 587	1.5	164. 9	176.0 188	183. 8	20.61 186	18.9
1 9 0	wtr_ 2.5	5.4	6.0291 67	6.5	0.138 585	1.1	9.93	10.35 198	11.2 7	0.125 174	1.34	181. 9	190.8 031	197. 3	15.55 82	15.4
1 9 0	wtr_ 3.75	5.48	6.0729 17	6.52	0.105 911	1.04	10.0 2	10.51 333	11.7 4	0.200 391	1.72	182. 4	196.8 292	210. 8	33.62 146	28.4
1 9 0	wtr_ 5.0	5.6	5.9164 58	6.38	0.071 89	0.78	10.0 7	10.23 813	10.5 4	0.010 973	0.47	186. 9	207.6 427	237. 1	116.1 414	50.2

1 9 0	wtr_ 6.25	5.62	5.8758 33	6.4	0.047 924	0.78	9.82	9.969 792	10.2	0.005 417	0.38	198. 1	240.5 385	282. 9	486.5 874	84.8
1 9 0	wtr_ 7.5	5.52	5.8120 83	6.4	0.039 861	0.88	9.77	10.02 896	10.3 3	0.013 089	0.56	196. 4	258.4 188	293. 8	849.9 146	97.4
1 9 1	wtr_ 1.25	5.16	5.9406 32	6.74	0.276 293	1.58	9.94	10.68 947	11.6 5	0.330 62	1.71	167. 8	178.8 552	192. 4	40.78 334	24.6
1 9 1	wtr_ 2.5	5.18	5.9479 17	6.7	0.213 907	1.52	9.94	10.53 51	11.5 5	0.255 707	1.61	182. 2	193.8 708	203. 3	22.21 851	21.1
1 9 1	wtr_ 3.75	5.4	5.9347 92	6.56	0.099 842	1.16	10.0 5	10.59 375	11.7 9	0.229 457	1.74	188. 9	201.5 792	221. 1	39.15 135	32.2
1 9 1	wtr_ 5.0	5.34	5.7654 17	6.18	0.057 419	0.84	9.8	10.21 969	10.6 9	0.036 603	0.89	193. 3	226.9 281	264	216.4 244	70.7
1 9 1	wtr_ 6.25	5.36	5.6879 17	6.18	0.061 848	0.82	9.54	9.886 146	10.1 7	0.015 23	0.63	225. 8	267.0 844	305. 7	395.6 325	79.9
1 9 1	wtr_ 7.5	5.34	5.6493 75	6.06	0.045 448	0.72	9.35	9.896 354	10.5 8	0.086 103	1.23	261. 2	285.2 385	311. 3	194.1 117	50.1
1 9 2	wtr_ 1.25	5.36	6.5491 49	7.78	0.649 133	2.42	9.86	10.61 064	12.3	0.449 079	2.44	174. 6	188.3 427	198. 3	31.27 068	23.7
1 9 2	wtr_ 2.5	5.32	6.4827 08	7.7	0.636 485	2.38	9.73	10.71 271	12.4 9	0.657 997	2.76	188. 7	203.9 333	215	32.86 14	26.3
1 9 2	wtr_ 3.75	5.16	6.3247 92	7.7	0.553 514	2.54	9.79	10.58 479	11.3 5	0.212 537	1.56	187. 2	209.0 125	233. 7	75.45 437	46.5

1 9 2	wtr_ 5.0	5.48	6.1260 42	7.14	0.200 195	1.66	9.6	10.19 125	10.8 4	0.080 954	1.24	188. 7	245.2 563	276. 5	357.9 21	87.8
1 9 2	wtr_ 6.25	5.64	5.9345 83	6.74	0.040 737	1.1	9.57	9.846 042	10.2 2	0.018 056	0.65	247. 5	310.2 667	331. 4	218.0 452	83.9
1 9 2	wtr_ 7.5	5.66	5.8837 5	6.04	0.016 457	0.38	9.21	9.800 625	10.3 6	0.064 086	1.15	307. 4	325.3 521	340. 5	118.9 912	33.1
1 9 3	wtr_ 1.25	5.9	6.9468 09	7.98	0.507 747	2.08	9.72	10.49 309	12.1 5	0.376 751	2.43	173	188.1 948	202. 8	55.11 587	29.8
1 9 3	wtr_ 2.5	5.74	6.8570 83	7.92	0.526 981	2.18	9.42	10.72 604	13.1 5	1.026 759	3.73	186. 1	203.6 208	217. 3	35.28 167	31.2
1 9 3	wtr_ 3.75	5.72	6.7370 83	7.9	0.457 566	2.18	9.81	10.59 219	11.6	0.343 375	1.79	188. 1	208.2 115	233. 6	91.27 387	45.5
1 9 3	wtr_ 5.0	5.9	6.5612 5	7.36	0.164 251	1.46	9.72	10.10 771	10.5 9	0.043 603	0.87	194. 8	239.1 302	287. 6	409.3 836	92.8
1 9 3	wtr_ 6.25	6.34	6.5041 67	7.14	0.029 498	0.8	9.48	9.838 542	10.2 8	0.048 288	0.8	251. 6	309.6 417	335. 9	438.6 446	84.3
1 9 3	wtr_ 7.5	5.98	6.2952 08	6.54	0.030 895	0.56	9.11	9.836 979	10.4 8	0.108 364	1.37	326. 2	339.4 031	390. 5	82.84 578	64.3
1 9 4	wtr_ 1.25	6.3	7.0847 92	7.88	0.260 335	1.58	9.69	10.35 615	11.6 1	0.291 917	1.92	172. 2	187.3 573	203. 2	81.68 205	31
1 9 4	wtr_ 2.5	6.16	7.0229 17	7.84	0.272 547	1.68	9.54	10.33 365	11.7	0.371 91	2.16	192. 9	206.0 594	233. 6	40.17 023	40.7

1 9 4	wtr_ 3.75	6.1	6.9166 67	7.84	0.270 212	1.74	9.76	10.44 167	11.6 3	0.294 94	1.87	187. 2	207.7 063	229	84.97 175	41.8
1 9 4	wtr_ 5.0	6.08	6.7529 17	7.38	0.096 092	1.3	9.48	9.979 479	10.4 2	0.041 565	0.94	185. 7	238.6 521	289	410.3 048	103.3
1 9 4	wtr_ 6.25	6.62	6.7837 5	7.18	0.018 925	0.56	9.33	9.650 521	10.4 1	0.063 544	1.08	259. 9	310.8 365	337. 6	322.0 897	77.7
1 9 4	wtr_ 7.5	6.42	6.6072 92	6.78	0.007 412	0.36	9.14	9.716 771	10.2 9	0.065 948	1.15	330. 7	341.4 281	351. 5	18.61 888	20.8
1 9 5	wtr_ 1.25	6	6.9919 1	8.34	0.533 561	2.34	9.73	10.41 303	11.9 6	0.477 549	2.23	161. 7	186.4 458	204. 3	157.0 05	42.6
1 9 5	wtr_ 2.5	5.92	6.8991 67	8.2	0.553 625	2.28	9.77	10.62 135	12.3 5	0.605 77	2.58	191. 6	205.0 635	237	54.44 108	45.4
1 9 5	wtr_ 3.75	5.7	6.6077 08	7.84	0.386 268	2.14	9.83	10.71 708	11.8 6	0.499 141	2.03	189. 2	202.3 667	221. 9	47.63 025	32.7
1 9 5	wtr_ 5.0	5.9	6.4445 83	7.1	0.087 448	1.2	9.49	10.19 823	10.8 9	0.122 415	1.4	194	236.3 125	274. 8	321.4 819	80.8
1 9 5	wtr_ 6.25	6.48	6.6954 17	7.06	0.014 194	0.58	9.17	9.788 333	10.8 2	0.207 875	1.65	264. 5	322.3 708	345. 4	223.6 77	80.9
1 9 5	wtr_ 7.5	6.5	6.6241 67	6.72	0.003 41	0.22	8.8	9.588 646	10.2 1	0.104 974	1.41	333. 3	346.0 063	357. 7	15.82 375	24.4
1 9 6	wtr_ 1.25	6.02	7.1484 78	8.32	0.599 721	2.3	9.73	10.40 75	11.2 9	0.321 87	1.56	151. 6	186.6 979	204. 8	263.9 954	53.2

1 9 6	wtr_ 2.5	5.9	6.9122 92	8.12	0.548 559	2.22	9.73	10.38 188	11.4 1	0.269 382	1.68	191. 1	203.2 594	215	38.09 233	23.9
1 9 6	wtr_ 3.75	5.56	6.6806 25	8.1	0.531 878	2.54	9.76	10.93 521	12.6 5	1.025 141	2.89	188. 5	201.9 333	218. 8	63.33 151	30.3
1 9 6	wtr_ 5.0	5.84	6.4335 42	7.24	0.124 93	1.4	9.69	10.50 979	11.6 4	0.403 432	1.95	196. 3	231.3 115	271. 2	402.6 593	74.9
1 9 6	wtr_ 6.25	6.56	6.6870 83	6.94	0.007 831	0.38	9.26	10.08 271	11.7 3	0.623 041	2.47	292. 8	330.6 729	348. 8	136.6 092	56
1 9 6	wtr_ 7.5	6.54	6.6233 33	6.78	0.004 124	0.24	8.72	9.671 667	10.4 4	0.175 115	1.72	344. 9	354.4 479	361. 9	13.29 957	17
1 9 7	wtr_ 1.25	6.46	7.2662 5	8.06	0.262 201	1.6	9.68	10.43 188	11.6 6	0.356 643	1.98	154. 9	184.5 99	203. 1	264.8 569	48.2
1 9 7	wtr_ 2.5	6.36	7.0427 08	7.86	0.214 102	1.5	9.67	10.34 031	11.4 9	0.325 46	1.82	192. 5	205.3 458	228. 2	30.70 567	35.7
1 9 7	wtr_ 3.75	5.96	6.7410 42	7.56	0.193 822	1.6	9.64	10.94 594	13.2 8	1.506 408	3.64	189. 8	203.1 833	217. 5	38.46 898	27.7
1 9 7	wtr_ 5.0	6.34	6.6972 92	7.22	0.063 433	0.88	9.36	10.29 51	11.6 8	0.472 699	2.32	196. 1	244.4 667	273. 1	290.6 328	77
1 9 7	wtr_ 6.25	6.6	6.7775	6.96	0.004 617	0.36	9.18	9.980 313	12.0 7	0.588 355	2.89	292	335.3 76	359. 1	155.6 033	67.1
1 9 7	wtr_ 7.5	6.56	6.6875	6.9	0.009 619	0.34	8.78	9.633 021	10.6 5	0.100 084	1.87	349. 2	361.1 594	378. 1	26.44 181	28.9

1 9 8	wtr_ 1.25	6.22	7.1535 48	8.38	0.514 21	2.16	9.69	10.41 774	11.4 7	0.403 546	1.78	144. 1	183.2 146	207. 6	403.7 394	63.5
1 9 8	wtr_ 2.5	6	6.9125	8	0.424 836	2	9.59	10.45 667	12.9 6	0.696 204	3.37	194. 9	204.4 583	216. 2	41.65 151	21.3
1 9 8	wtr_ 3.75	5.64	6.5085 42	7.5	0.331 408	1.86	9.38	11.29 771	14.3	2.783 883	4.92	189. 2	203.3 448	219. 7	51.67 66	30.5
1 9 8	wtr_ 5.0	6.16	6.5681 25	7.26	0.088 754	1.1	9.22	10.47 708	12.7 2	1.111 059	3.5	220	249.6 844	284. 1	222.4 723	64.1
1 9 8	wtr_ 6.25	6.54	6.7662 5	6.88	0.004 912	0.34	8.9	10.04 75	12.1 2	0.961 004	3.22	333. 6	349.8 323	366	35.80 726	32.4
1 9 8	wtr_ 7.5	6.6	6.7433 33	7.04	0.013 74	0.44	8.88	9.668 646	11.0 1	0.199 818	2.13	360. 7	370.6 958	407. 3	35.74 819	46.6
1 9 9	wtr_ 1.25	6.32	6.6866 67	7.2	0.042 591	0.88	9.44	10.19 51	11.5 4	0.306 16	2.1	158. 3	189.1 75	210. 1	246.6 539	51.8
1 9 9	wtr_ 2.5	6.12	6.4641 67	7.14	0.041 557	1.02	8.87	9.869 167	11.2 1	0.210 294	2.34	193. 7	207.9 958	220. 4	24.96 419	26.7
1 9 9	wtr_ 3.75	6.14	6.3675	6.86	0.016 541	0.72	9.03	10.54 438	14.6 4	2.049 463	5.61	190. 7	213.4 875	235. 5	115.1 727	44.8
1 9 9	wtr_ 5.0	6.1	6.4337 5	6.96	0.035 683	0.86	9.03	9.755	11.9 2	0.468 825	2.89	221. 5	267.6 5	300. 4	343.7 444	78.9
1 9 9	wtr_ 6.25	6.46	6.6693 75	6.88	0.015 924	0.42	8.71	9.460 729	11.7 4	0.501 638	3.03	345. 3	357.7 083	374. 2	31.74 351	28.9

1 9 9	wtr_ 7.5	6.36	6.5883 33	6.78	0.007 088	0.42	8.06	9.056 042	10.1 2	0.143 978	2.06	367. 3	379.5 354	404. 4	49.21 347	37.1
2 0 0	wtr_ 1.25	5.98	6.9465 91	8.38	0.668 034	2.4	9.4	10.27 034	11.9 3	0.470 371	2.53	167. 3	202.3 792	226. 7	355.2 916	59.4
2 0 0	wtr_ 2.5	5.78	6.8216 67	8.3	0.698 953	2.52	9.38	10.18 021	11.5 3	0.370 232	2.15	211. 7	229.0 729	240	46.88 01	28.3
2 0 0	wtr_ 3.75	5.84	6.5235 42	7.86	0.355 326	2.02	9.08	11.71 115	17.5 2	6.114 939	8.44	205. 8	235.8 958	254. 4	95.87 493	48.6
2 0 0	wtr_ 5.0	5.8	6.3297 92	7.08	0.091 697	1.28	8.79	10.26 958	12.7 3	1.261 069	3.94	249. 5	291.3 01	326. 3	220.1 828	76.8
2 0 0	wtr_ 6.25	6.44	6.5137 5	6.62	0.001 535	0.18	8.59	9.932 292	13.2	1.488 883	4.61	349. 8	369.2 188	390. 7	52.12 533	40.9
2 0 0	wtr_ 7.5	6.36	6.5891 67	6.94	0.028 555	0.58	8.45	9.5	11.1 6	0.443 097	2.71	377	392.7 521	418. 6	69.71 579	41.6
2 0 1	wtr_ 1.25	6.36	7.5578 02	8.96	0.699	2.6	9.51	10.30 484	11.7 9	0.405 11	2.28	160. 5	201.0 823	222. 8	354.3 571	62.3
2 0 1	wtr_ 2.5	6.08	7.1379 17	8.7	0.680 602	2.62	8.93	10.16 323	11.1 8	0.250 988	2.25	203	221.6 948	319. 7	209.8 925	116.7
2 0 1	wtr_ 3.75	6.06	6.7031 25	8.14	0.333 392	2.08	9.38	11.13 49	14.7 3	2.467 341	5.35	197. 9	220.9 229	250. 3	119.9 022	52.4
2 0 1	wtr_ 5.0	6.24	6.7564 58	7.34	0.074 24	1.1	9.13	10.36 885	11.9 2	0.930 494	2.79	239. 8	284.8 135	313. 1	179.6 246	73.3

2011	wtr_6.25	6.44	6.642083	6.9	0.010674	0.46	8.85	9.928854	11.86	0.741271	3.01	355.6	373.4042	385.9	37.85598	30.3
2011	wtr_7.5	6.54	6.748333	7.14	0.026044	0.6	9.11	9.941042	11.19	0.275393	2.08	389.7	405.7521	427	58.25389	37.3
2012	wtr_1.25	6.6	7.747826	9.1	0.686699	2.5	9.4	10.3787	12.4	0.614466	3	175	210.5167	239.9	277.7972	64.9
2012	wtr_2.5	6.22	7.283333	8.5	0.497976	2.28	8.85	10.11135	11.32	0.286304	2.47	207.5	224.5396	246.5	85.98179	39
2012	wtr_3.75	6.34	6.858542	8.02	0.178267	1.68	9.26	10.99073	14.24	2.214859	4.98	197.8	224.1688	266.3	162.4085	68.5
2012	wtr_5.0	6.44	6.905833	7.26	0.033161	0.82	8.49	10.44813	12.55	1.671881	4.06	269.9	293.7563	322	151.0566	52.1
2012	wtr_6.25	6.74	6.873958	6.98	0.005643	0.24	8.74	10.125	12.06	1.166411	3.32	363.4	381.9188	396.2	49.74049	32.8
2012	wtr_7.5	6.72	6.983125	7.32	0.030445	0.6	8.82	10.1174	12.07	0.377289	3.25	401.5	427.6563	451.9	112.2263	50.4
2013	wtr_1.25	6.62	7.236421	8.06	0.10691	1.44	9.39	10.31189	12.13	0.725543	2.74	201	219.9271	321.1	448.0641	120.1
2013	wtr_2.5	6.5	6.906042	7.38	0.031715	0.88	9.08	9.954583	10.85	0.183088	1.77	212.9	227.5281	243.4	64.9511	30.5
2013	wtr_3.75	6.58	6.90375	7.12	0.017089	0.54	8.88	10.61792	14.57	2.186086	5.69	206.9	238.3229	259	159.5332	52.1

203	wtr_5.0	6.52	6.923958	7.34	0.031812	0.82	8.6	10.29135	13.58	2.599429	4.98	273.1	304.0375	330.7	193.4152	57.6
203	wtr_6.25	6.96	7.039792	7.2	0.003423	0.24	8.81	10.28729	13.61	2.102098	4.8	372.8	390.8792	412.9	63.87914	40.1
203	wtr_7.5	6.86	7.032708	7.28	0.007858	0.42	9.15	9.943333	11.18	0.131004	2.03	427.3	445.5594	461.9	71.52265	34.6
204	wtr_1.25	6.5	7.423297	8.44	0.46762	1.94	9.33	10.52604	12.63	1.007109	3.3	214.2	225.8083	239	64.15888	24.8
204	wtr_2.5	6.44	6.962917	7.74	0.198071	1.3	9.46	10.18302	11.28	0.280164	1.82	231.5	243.3958	254.7	20.82651	23.2
204	wtr_3.75	6.52	6.897292	7.6	0.061058	1.08	9.11	11.13167	14.82	3.509707	5.71	240	254.926	281.5	62.90889	41.5
204	wtr_5.0	6.4	6.718333	6.98	0.017597	0.58	8.07	10.91708	14.84	5.214682	6.77	301.1	325.6323	340.1	70.81337	39
204	wtr_6.25	7	7.114583	7.24	0.002935	0.24	8.81	11.24469	15.68	5.25005	6.87	383.2	408.774	438.9	98.09942	55.7
204	wtr_7.5	6.88	7.156042	7.6	0.039247	0.72	8.87	10.29573	12.25	0.912869	3.38	443.4	460.4198	477.7	47.34076	34.3
205	wtr_1.25	6.74	7.892043	9.32	0.551993	2.58	9.39	10.31237	12.5	0.686227	3.11	224.3	234.7729	245.6	37.69421	21.3
205	wtr_2.5	6.66	7.315417	8.24	0.238631	1.58	9.5	10.01635	10.96	0.137724	1.46	234.2	248.2615	259.6	31.39818	25.4

205	wtr_3.75	6.74	7.139792	8.06	0.08477	1.32	9.11	10.41281	12.78	0.843591	3.67	240.7	256.6604	288.5	86.67505	47.8
205	wtr_5.0	6.54	6.924375	7.18	0.015758	0.64	8	10.97354	15.21	5.64725	7.21	311.6	330.1583	349.5	64.99046	37.9
205	wtr_6.25	6.98	7.163958	7.34	0.009563	0.36	8.91	11.13292	15.55	4.437	6.64	400.9	418.3552	438.4	78.88587	37.5
205	wtr_7.5	7	7.268958	7.64	0.033228	0.64	8.78	10.4074	12.28	0.856958	3.5	452.6	473.2052	496.3	53.6706	43.7
206	wtr_1.25	7.08	7.959362	8.68	0.291875	1.6	9.12	10.08011	11.76	0.450642	2.64	224.2	237.7333	261.5	45.64688	37.3
206	wtr_2.5	6.96	7.556875	8.18	0.182538	1.22	9.31	9.907604	10.68	0.112433	1.37	238.3	251.7781	274.9	30.49457	36.6
206	wtr_3.75	7.06	7.434583	8.04	0.075709	0.98	9.24	10.47521	12.93	1.050347	3.69	239.6	259.8542	282.8	71.04693	43.2
206	wtr_5.0	6.78	7.105833	7.34	0.014054	0.56	7.9	10.30771	15.06	4.658047	7.16	318.6	335.1177	360.1	59.796	41.5
206	wtr_6.25	7.24	7.397083	7.6	0.00645	0.36	8.82	11.11969	15.07	4.141384	6.25	411.6	435.3177	463.4	130.3518	51.8
206	wtr_7.5	7.08	7.324583	7.62	0.016804	0.54	9.31	10.34354	11.54	0.34489	2.23	471.7	489.6479	503	44.57536	31.3
207	wtr_1.25	7.38	8.084375	8.88	0.160751	1.5	8.8	10.09708	12.14	0.525067	3.34	238	247.9323	287	54.49463	49

207	wtr_2.5	7.06	7.757083	8.28	0.121078	1.22	9.04	9.946042	10.86	0.182319	1.82	243.8	262.0771	296.5	50.30663	52.7
207	wtr_3.75	7.06	7.677708	8.1	0.056546	1.04	8.88	10.3576	12.94	1.257513	4.06	245.5	269.0146	303.9	126.2865	58.4
207	wtr_5.0	7.12	7.365208	7.8	0.022006	0.68	7.47	11.02135	16.96	10.10085	9.49	335.8	351.0948	369.7	65.97692	33.9
207	wtr_6.25	7.32	7.503333	7.78	0.013505	0.46	8.48	11.61958	17.77	8.599086	9.29	403.7	443.4417	479.9	126.6631	76.2
207	wtr_7.5	7.22	7.441667	7.78	0.026262	0.56	8.5	10.41531	12.83	0.885446	4.33	488.2	506.1594	522.4	54.22328	34.2
208	wtr_1.25	7.52	8.282947	9.1	0.235549	1.58	9.22	10.14116	12.2	0.764121	2.98	245.2	257.5271	284	33.12305	38.8
208	wtr_2.5	7.28	7.838958	8.66	0.183127	1.38	8.98	9.690417	10.42	0.049928	1.44	256.8	266.2479	274.8	16.55873	18
208	wtr_3.75	7.16	7.713958	8.3	0.101172	1.14	9.08	10.43052	13.41	1.602919	4.33	253.5	267.7188	284.4	36.71101	30.9
208	wtr_5.0	7.26	7.5225	7.92	0.019943	0.66	6.82	11.0675	19.98	13.19279	13.16	329.8	345.8094	375.2	104.3596	45.4
208	wtr_6.25	7.52	7.68375	7.88	0.009139	0.36	8.38	11.49052	18.4	8.393363	10.02	420.1	456.2927	496.7	159.4565	76.6
208	wtr_7.5	7.3	7.61625	7.94	0.028045	0.64	9.09	10.68396	12.39	0.782184	3.3	504.3	521.2906	533.9	30.41623	29.6

209	wtr_1.25	7.7	8.561304	9.58	0.4234	1.88	9.17	10.02174	11.56	0.529801	2.39	250.4	263.1802	321.4	114.225	71
209	wtr_2.5	7.06	8.027292	8.98	0.373028	1.92	9.23	9.70875	10.3	0.058257	1.07	248	267.8188	293.4	114.6733	45.4
209	wtr_3.75	7.04	7.84375	8.66	0.177939	1.62	8.63	10.15083	12.63	0.736088	4	247.2	272.6854	303.9	177.0375	56.7
209	wtr_5.0	7.38	7.623125	7.94	0.014521	0.56	6.77	10.95833	18.01	14.46798	11.24	332	352.899	375.2	75.55863	43.2
209	wtr_6.25	7.7	7.872292	8.12	0.011969	0.42	8.31	11.50969	16.71	7.286302	8.4	434.3	466.6302	525.3	191.2604	91
209	wtr_7.5	7.44	7.765625	8.14	0.044924	0.7	8.77	10.68	12.3	0.965322	3.53	522.3	535.0719	542.4	17.35088	20.1
210	wtr_1.25	7.56	8.441895	9.54	0.255175	1.98	9.04	9.959684	12.01	0.583524	2.97	251.9	263.6708	272.2	20.70819	20.3
210	wtr_2.5	7.08	7.948125	8.66	0.206178	1.58	9.37	9.730938	10.55	0.083025	1.18	247.6	267.8052	310	101.1382	62.4
210	wtr_3.75	7.26	7.86125	8.46	0.064268	1.2	9.06	10.1249	12.11	0.825461	3.05	258.2	275.45	301.1	78.74779	42.9
210	wtr_5.0	7.36	7.608542	7.84	0.010937	0.48	6.44	10.70521	20.1	14.75124	13.66	342.2	356.1708	375.3	61.80356	33.1
210	wtr_6.25	7.9	8.060208	8.24	0.006573	0.34	8.4	11.39656	16.78	6.312846	8.38	449.4	480.3406	536.1	193.0793	86.7

2 1 0	wtr_ 7.5	7.7	7.9375	8.24	0.026 091	0.54	9.21	10.88 792	13.0 7	0.809 048	3.86	530. 2	543.4 813	559. 1	54.11 396	28.9
2 1 1	wtr_ 1.25	7.44	8.4591 49	9.74	0.398 623	2.3	9.14	10.02 479	12.3 7	0.710 232	3.23	255. 8	267.4 115	278. 5	30.59 26	22.7
2 1 1	wtr_ 2.5	7.12	7.9216 67	8.66	0.254 928	1.54	9.3	9.779 271	10.6 5	0.107 011	1.35	254. 5	269.2	292. 2	83.27 516	37.7
2 1 1	wtr_ 3.75	7.06	7.7743 75	8.48	0.151 366	1.42	9.06	10.06 688	12.5 7	0.552 592	3.51	254	275.5 656	298. 6	96.66 754	44.6
2 1 1	wtr_ 5.0	7.42	7.6808 33	7.9	0.013 246	0.48	6.42	10.87 563	20.6 9	15.25 689	14.27	345. 5	365.6 292	382. 1	71.76 125	36.6
2 1 1	wtr_ 6.25	7.94	8.1535 42	8.4	0.009 09	0.46	8.75	10.69 719	13.8 5	1.290 427	5.1	456. 7	491.8 865	546	222.3 907	89.3
2 1 1	wtr_ 7.5	7.82	8.0975	8.52	0.035 632	0.7	9.19	11.00 781	13.0 8	1.047 329	3.89	542. 1	557.9 229	583. 4	45.40 179	41.3
2 1 2	wtr_ 1.25	7.52	8.6375 82	9.9	0.530 843	2.38	8.9	9.859 56	11.8 4	0.490 804	2.94	256. 5	270.4 813	286. 8	73.80 807	30.3
2 1 2	wtr_ 2.5	7.22	8.1106 25	9.1	0.282 998	1.88	8.57	9.731 354	10.6 8	0.112 513	2.11	255. 3	271.9 219	285	72.67 688	29.7
2 1 2	wtr_ 3.75	7.14	7.8410 42	8.68	0.129 527	1.54	9.27	10.15 25	12.7 6	0.668 625	3.49	249. 4	280.5 479	327. 3	166.0 495	77.9
2 1 2	wtr_ 5.0	7.5	7.7864 58	8.04	0.008 509	0.54	6.12	10.22 729	18.6 6	12.09 423	12.54	348. 2	370.0 073	386. 7	52.72 574	38.5

2 1 2	wtr_ 6.25	8.02	8.2591 67	8.56	0.019 966	0.54	9.26	10.98 063	13.4 4	1.299 89	4.18	470. 1	498.1 271	535. 1	181.3 363	65
2 1 2	wtr_ 7.5	7.9	8.2152 08	8.62	0.043 341	0.72	9.64	11.40 146	13.5	1.171 615	3.86	557	565.5 521	583. 2	20.25 536	26.2
2 1 3	wtr_ 1.25	7.62	8.6927 27	9.74	0.447 901	2.12	8.88	9.689 205	11.9 6	0.367 957	3.08	267. 7	281.6 208	293. 1	59.68 398	25.4
2 1 3	wtr_ 2.5	7.44	8.3506 25	9.44	0.402 787	2	9.24	9.637 5	10.2 8	0.082 827	1.04	267. 5	282.8 083	298. 3	108.3 479	30.8
2 1 3	wtr_ 3.75	7.32	8.0270 83	9	0.225 204	1.68	9.32	9.883 333	11.5 6	0.225 875	2.24	268. 3	285.1 625	302. 5	71.47 879	34.2
2 1 3	wtr_ 5.0	7.46	7.8943 75	8.28	0.026 398	0.82	6.43	9.556 667	14.4 8	4.874 564	8.05	325. 9	359.0 823	386. 2	162.0 427	60.3
2 1 3	wtr_ 6.25	8.1	8.3489 58	8.62	0.007 51	0.52	9.22	10.86 427	13.0 2	0.640 031	3.8	454. 1	502.8 896	570. 3	373.9 458	116.2
2 1 3	wtr_ 7.5	8.1	8.3662 5	8.64	0.027 043	0.54	10	11.55 292	13.0 4	0.726 08	3.04	563. 8	571.9 219	582. 5	16.61 267	18.7
2 1 4	wtr_ 1.25	7.92	8.7612 77	9.58	0.254 57	1.66	8.56	9.665 638	10.6 5	0.335 857	2.09	271. 8	285.4 094	363	96.76 465	91.2
2 1 4	wtr_ 2.5	7.7	8.3860 42	9.12	0.201 517	1.42	9.12	9.559 896	10.1 8	0.077 205	1.06	271. 7	288.1 073	300	75.63 942	28.3
2 1 4	wtr_ 3.75	7.5	8.1658 33	8.7	0.099 309	1.2	9.07	9.813 125	10.6 6	0.172 285	1.59	274. 1	291.7 208	311. 1	53.83 135	37

2 1 4	wtr_ 5.0	7.88	8.1685 42	8.42	0.010 777	0.54	7.92	9.655 625	12.0 8	1.560 425	4.16	343. 1	372.2 385	388	82.25 397	44.9
2 1 4	wtr_ 6.25	8.26	8.4441 67	8.64	0.008 328	0.38	9.49	10.64 063	13.2 1	0.601 301	3.72	452. 7	498.9 99	551. 1	304.1 121	98.4
2 1 4	wtr_ 7.5	8.3	8.4833 33	8.74	0.012 831	0.44	10.3 4	11.62 313	13.2 4	0.537 224	2.9	567. 8	573.8 625	581	11.06 237	13.2
2 1 5	wtr_ 1.25	7.6	8.5146 07	9.44	0.329 589	1.84	8.92	9.612 921	10.4 3	0.234 348	1.51	276. 4	290.1 708	300. 4	57.90 019	24
2 1 5	wtr_ 2.5	7.42	8.2116 67	8.84	0.164 149	1.42	8.77	9.539 167	10.0 9	0.070 896	1.32	282. 6	300.4 219	321. 3	62.29 246	38.7
2 1 5	wtr_ 3.75	7.36	7.9364 58	8.38	0.076 859	1.02	9.21	9.994 583	11.2 1	0.355 844	2	284. 7	299.3 042	348. 2	85.96 777	63.5
2 1 5	wtr_ 5.0	7.54	7.9635 42	8.36	0.030 56	0.82	7.72	9.712 708	12.0 2	2.006 144	4.3	339. 4	368.0 865	385. 4	129.3 328	46
2 1 5	wtr_ 6.25	8.3	8.4920 83	8.72	0.006 951	0.42	9.48	10.40 917	11.5 4	0.159 816	2.06	467	501.6 208	557. 2	195.6 37	90.2
2 1 5	wtr_ 7.5	8.32	8.4916 67	8.86	0.019 955	0.54	9.85	11.41 219	13.0 4	0.822 678	3.19	564. 4	574.5 406	584	33.15 254	19.6
2 1 6	wtr_ 1.25	7.68	8.0995 74	8.52	0.038 641	0.84	9.12	9.644 468	10.7 3	0.159 167	1.61	287. 2	293.3 156	323. 1	17.08 26	35.9
2 1 6	wtr_ 2.5	7.32	7.7804 17	8.16	0.031 596	0.84	9.2	9.537 917	10.0 1	0.042 655	0.81	288. 5	305.9 427	335. 6	73.75 047	47.1

2 1 6	wtr_ 3.75	7.4	7.7712 5	8.16	0.024 958	0.76	9.07	9.785 938	11.1 9	0.320 18	2.12	289. 8	312.9 948	338. 2	127.4 683	48.4
2 1 6	wtr_ 5.0	7.48	7.785	8.12	0.024 674	0.64	7.88	9.321 25	11.4 2	0.976 752	3.54	339. 5	370.1 979	391. 6	123.2 958	52.1
2 1 6	wtr_ 6.25	8.08	8.3725	8.58	0.010 528	0.5	9.39	10.14 552	11.0 9	0.136 162	1.7	451. 1	495.6 396	551. 6	349.8 329	100.5
2 1 6	wtr_ 7.5	8.1	8.3504 17	8.64	0.012 842	0.54	9.07	10.56 74	12.6 3	0.577 257	3.56	551. 2	564.4 708	576. 3	23.01 43	25.1
2 1 7	wtr_ 1.25	6.64	7.5385 11	8.18	0.207 219	1.54	9.14	9.901 596	11.3 9	0.335 011	2.25	283. 9	295.4 885	310. 7	44.57 724	26.8
2 1 7	wtr_ 2.5	6.62	7.3487 5	7.82	0.107 948	1.2	8.95	9.961 667	11.7 3	0.386 692	2.78	292. 2	305.4 906	318. 8	40.42 486	26.6
2 1 7	wtr_ 3.75	6.5	7.3237 5	7.78	0.074 841	1.28	8.82	10.54 865	13.8 5	1.541 126	5.03	291. 3	312.3 344	351	180.1 105	59.7
2 1 7	wtr_ 5.0	6.88	7.3220 83	7.72	0.039 061	0.84	8.01	10.41 708	14.8 9	4.246 052	6.88	333. 3	361.7 49	384. 8	191.2 158	51.5
2 1 7	wtr_ 6.25	7.62	8.05	8.38	0.031 259	0.76	9.45	10.01 344	10.6 7	0.105 972	1.22	435. 2	481.9 417	525. 1	374.0 425	89.9
2 1 7	wtr_ 7.5	8.08	8.2912 5	8.62	0.014 853	0.54	8.92	10.96 552	13.0 4	1.484 366	4.12	545. 8	559.4 01	568. 8	24.41 674	23
2 1 8	wtr_ 1.25	6.86	7.9960 92	9.24	0.547 105	2.38	8.69	9.894 368	12.3 1	0.560 292	3.62	288. 3	302.0 875	314. 5	61.03 479	26.2

2 1 8	wtr_ 2.5	6.8	7.6662 5	8.7	0.345 274	1.9	9.31	9.921 771	11.1 7	0.213 105	1.86	297. 1	311.9 302	325. 9	61.10 929	28.8
2 1 8	wtr_ 3.75	6.62	7.3152 08	8.24	0.118 221	1.62	7.6	10.52 198	12.9 8	1.678 199	5.38	290. 1	309.9 74	341. 1	122.6 081	51
2 1 8	wtr_ 5.0	6.96	7.4462 5	7.76	0.036 07	0.8	7.68	10.36 74	13.9 3	4.240 342	6.25	343. 8	377.9 719	406. 4	236.7 823	62.6
2 1 8	wtr_ 6.25	7.7	7.9841 67	8.42	0.022 585	0.72	9.33	10.03 917	11.4	0.184 82	2.07	448. 2	481.6 229	524. 7	284.6 887	76.5
2 1 8	wtr_ 7.5	8.12	8.3241 67	8.74	0.026 972	0.62	9.81	11.45 396	13.9 5	1.482 254	4.14	537. 7	555.0 365	563. 4	40.79 666	25.7
2 1 9	wtr_ 1.25	7.36	8.3597 7	9.62	0.617 651	2.26	8.99	9.822 529	12.2 6	0.561 566	3.27	297. 2	310.5 865	324. 5	73.61 213	27.3
2 1 9	wtr_ 2.5	7.12	7.9337 5	8.68	0.263 304	1.56	9.32	9.940 208	11.2 8	0.284 657	1.96	304. 7	317.7 708	330	44.19 83	25.3
2 1 9	wtr_ 3.75	7.04	7.6239 58	8.12	0.070 523	1.08	8.35	10.18 813	12.2	1.198 756	3.85	307	320.4 833	353. 3	76.12 73	46.3
2 1 9	wtr_ 5.0	7.18	7.6083 33	7.9	0.021 353	0.72	7.41	10.24 667	14.1 2	5.076 231	6.71	345. 6	386.5 24	407. 5	164.2 698	61.9
2 1 9	wtr_ 6.25	7.84	8.1762 5	8.62	0.032 584	0.78	9.51	10.39 385	11.9 8	0.369 954	2.47	465. 9	493.1 135	528. 1	207.7 521	62.2
2 1 9	wtr_ 7.5	8.04	8.3485 42	8.7	0.032 907	0.66	9.71	11.78 531	13.8 3	1.400 585	4.12	543. 2	554.6 135	562. 8	16.34 539	19.6

2 2 0	wtr_ 1.25	7.78	8.7043 18	9.88	0.500 482	2.1	8.7	9.752 955	11.2 9	0.409 391	2.59	300. 1	315.9 635	327. 9	74.70 971	27.8
2 2 0	wtr_ 2.5	7.46	8.2162 5	8.92	0.192 912	1.46	9.08	9.915 417	11.1 2	0.321 398	2.04	308. 4	325.4 854	340. 6	43.21 305	32.2
2 2 0	wtr_ 3.75	7.36	7.9308 33	8.38	0.074 947	1.02	8.39	10.16 479	11.8 9	0.946 196	3.5	315. 4	327.5 031	362. 1	96.11 694	46.7
2 2 0	wtr_ 5.0	7.48	7.8741 67	8.32	0.032 016	0.84	7.04	10.11 521	14.0 1	4.824 89	6.97	357. 9	396.9 865	427. 4	232.9 048	69.5
2 2 0	wtr_ 6.25	8.08	8.3481 25	8.7	0.027 239	0.62	9.61	10.62 854	12.1 5	0.419 223	2.54	455. 4	506.0 052	555. 5	378.2 296	100.1
2 2 0	wtr_ 7.5	8.08	8.4379 17	8.76	0.038 143	0.68	10.1 1	12.03 844	14.4 8	1.439 902	4.37	547. 9	555.2 354	561. 6	10.39 747	13.7
2 2 1	wtr_ 1.25	8.02	8.8340 43	10	0.240 79	1.98	8.64	9.836 17	13.0 4	0.937 334	4.4	305. 3	320.4 792	331. 6	42.18 525	26.3
2 2 1	wtr_ 2.5	7.8	8.4277 08	9.04	0.122 883	1.24	8.79	9.889 479	11.5 7	0.552 218	2.78	311. 5	331.2 854	342. 9	29.91 242	31.4
2 2 1	wtr_ 3.75	7.8	8.2385 42	8.46	0.020 895	0.66	7.49	9.540 938	11.2	0.683 044	3.71	322. 5	336.2 948	358. 2	97.85 06	35.7
2 2 1	wtr_ 5.0	7.64	8.0860 42	8.36	0.022 115	0.72	6.48	10.34 365	18.2 1	10.61 372	11.73	374. 5	404.8 156	431. 1	205.6 369	56.6
2 2 1	wtr_ 6.25	8.32	8.6535 42	8.94	0.019 027	0.62	10	11.55 115	13.1 9	0.470 014	3.19	489. 9	527.4 917	572. 3	216.5 284	82.4

2 2 1	wtr_ 7.5	8.22	8.4922 92	8.9	0.034 9	0.68	10.2 4	11.82 948	14.0 9	1.310 344	3.85	550. 5	557.8 552	562. 4	6.839 973	11.9
2 2 2	wtr_ 1.25	8.18	8.4029 17	8.76	0.021 263	0.58	8.48	9.664 896	11.5 1	0.489 64	3.03	294. 6	318.3 615	331. 4	74.19 481	36.8
2 2 2	wtr_ 2.5	7.92	8.2154 17	8.52	0.014 227	0.6	8.85	9.921 042	12.2 7	1.107 892	3.42	325. 9	337.6 948	355. 2	53.90 387	29.3
2 2 2	wtr_ 3.75	8.06	8.2493 75	8.6	0.018 576	0.54	8.34	9.420 938	11.9 4	1.056 855	3.6	329	350.5 521	377. 6	148.9 309	48.6
2 2 2	wtr_ 5.0	7.8	8.0635 42	8.34	0.017 423	0.54	6.3	9.948 438	18.8	14.86 29	12.5	374. 8	409.4 24	431. 9	271.2 378	57.1
2 2 2	wtr_ 6.25	8.58	8.7279 17	8.88	0.004 871	0.3	10.6 7	11.92 5	13.7 2	0.530 541	3.05	502	539.7 219	562. 4	131.9 668	60.4
2 2 2	wtr_ 7.5	8.28	8.4145 83	8.56	0.006 042	0.28	9.19	11.18 323	13.4 8	1.297 471	4.29	553. 2	558.4 01	562. 2	4.837 157	9
2 2 3	wtr_ 1.25	7.86	8.6457 14	9.92	0.503 34	2.06	8.63	9.642 262	12.3 4	0.708 888	3.71	290. 6	326.0 167	339. 4	155.3 669	48.8
2 2 3	wtr_ 2.5	7.64	8.2741 67	9.04	0.174 955	1.4	9.01	10.17 698	11.9	0.932 668	2.89	324. 5	337.9 583	361. 8	49.47 551	37.3
2 2 3	wtr_ 3.75	7.66	8.1191 67	8.44	0.035 191	0.78	8.5	10.04 542	12.5 7	1.307 722	4.07	326. 3	347.6 469	377. 4	185.5 918	51.1
2 2 3	wtr_ 5.0	7.54	7.9479 17	8.2	0.021 772	0.66	6.07	10.78 198	17.5 7	13.56 98	11.5	376. 4	415.4 406	437. 3	259.3 035	60.9

2 2 3	wtr_ 6.25	8.48	8.7391 67	8.94	0.007 553	0.46	10.4 9	12.17 792	13.7	0.556 164	3.21	517. 3	547.5 708	581. 1	172.2	63.8
2 2 3	wtr_ 7.5	8.22	8.4260 42	8.72	0.020 91	0.5	8.21	11.43 563	14.0 8	2.174 785	5.87	556. 9	563.3 01	570. 6	10.16 368	13.7
2 2 4	wtr_ 1.25	8.22	8.6972 63	9.1	0.067 716	0.88	8.48	9.761 368	12.1 5	0.782 914	3.67	304. 1	326.6 469	341	93.12 104	36.9
2 2 4	wtr_ 2.5	7.94	8.4289 58	8.78	0.042 559	0.84	8.74	10.37 26	13.4 9	1.896 843	4.75	326. 4	340.7 917	350. 9	36.05 109	24.5
2 2 4	wtr_ 3.75	7.98	8.3460 42	8.72	0.027 218	0.74	8.23	10.08 688	12.8 5	2.010 879	4.62	330. 9	348.3 417	377. 2	152.0 9	46.3
2 2 4	wtr_ 5.0	7.88	8.1247 92	8.3	0.010 499	0.42	5.89	10.90 333	19.5 3	18.98 543	13.64	392. 3	421.9 948	441. 8	170.5 159	49.5
2 2 4	wtr_ 6.25	8.52	8.7972 92	8.98	0.007 913	0.46	10.5 4	12.50 302	14.1 9	0.715 773	3.65	528. 1	556.2 781	585. 9	152.9 348	57.8
2 2 4	wtr_ 7.5	8.2	8.4839 58	8.78	0.026 894	0.58	9.5	11.80 021	14.9 4	2.129 156	5.44	549	568.7 677	574. 4	9.730 42	25.4
2 2 5	wtr_ 1.25	8.06	8.7280 85	9.54	0.199 151	1.48	8.3	9.687 979	12.2 3	0.643 698	3.93	310. 3	333.6 865	370. 4	87.24 308	60.1
2 2 5	wtr_ 2.5	7.76	8.3818 75	9.06	0.094 476	1.3	8.62	10.01 542	13.5 4	1.453 132	4.92	326. 8	344.0 208	364	47.73 451	37.2
2 2 5	wtr_ 3.75	7.78	8.2212 5	8.56	0.027 527	0.78	8.44	10.01 406	12.4 3	1.301 761	3.99	333	352.7 958	379. 2	95.11 451	46.2

2 2 5	wtr_ 5.0	7.94	8.1502 08	8.36	0.009 642	0.42	5.38	9.377 708	14.2 8	5.962 281	8.9	400. 4	431.7 354	449. 7	92.63 263	49.3
2 2 5	wtr_ 6.25	8.66	8.8591 67	8.98	0.003 721	0.32	10.5 2	12.51 531	13.8	0.460 962	3.28	537. 6	566.9 417	600. 7	197.7 294	63.1
2 2 5	wtr_ 7.5	8.3	8.5060 42	8.72	0.012 363	0.42	10.1 1	11.92 552	13.6 7	1.202 574	3.56	552. 6	584.8 281	604. 3	152.4 09	51.7
2 2 6	wtr_ 1.25	7.9	8.7536 36	9.78	0.373 081	1.88	8.84	9.664 205	11.2 3	0.430 455	2.39	314. 9	338.1 563	349. 6	75.75 68	34.7
2 2 6	wtr_ 2.5	7.78	8.3535 42	9	0.098 64	1.22	8.63	10.17 615	14.0 6	1.608 072	5.43	334. 1	349.2 542	364. 8	33.33 388	30.7
2 2 6	wtr_ 3.75	7.58	8.0981 25	8.54	0.042 603	0.96	8.84	10.45 313	13.0 7	1.605 588	4.23	339. 5	353.7 906	392	130.8 87	52.5
2 2 6	wtr_ 5.0	7.8	8.1016 67	8.26	0.006 212	0.46	6.54	9.837 396	15.6 2	6.724 752	9.08	402. 3	433.1 917	447. 1	111.4 873	44.8
2 2 6	wtr_ 6.25	8.66	8.8952 08	9.06	0.011 947	0.4	10.9 9	12.60 938	14.3 8	0.566 513	3.39	533. 7	572.5 083	610. 3	235.0 498	76.6
2 2 6	wtr_ 7.5	8.34	8.5745 83	8.86	0.020 156	0.52	10.2 3	12.40 906	15.0 8	1.964 276	4.85	589. 8	599.5 896	615. 4	63.18 979	25.6
2 2 7	wtr_ 1.25	7.98	8.7492 31	9.76	0.278 181	1.78	8.86	9.743 297	11.2 8	0.456 569	2.42	324. 5	341.3 615	352	52.53 86	27.5
2 2 7	wtr_ 2.5	7.88	8.3858 33	8.9	0.084 85	1.02	8.72	10.57 104	14.3 7	2.555 784	5.65	345. 3	353.7 771	375. 5	25.87 147	30.2

2 2 7	wtr_ 3.75	7.74	8.2110 42	8.66	0.040 226	0.92	8.79	10.82 073	13.5 8	2.781 407	4.79	344. 7	359.5 135	396. 5	155.5 027	51.8
2 2 7	wtr_ 5.0	7.88	8.1254 17	8.26	0.006 32	0.38	6.85	10.67 458	16.3 3	10.55 651	9.48	399. 7	433.6 75	449. 4	190.2 065	49.7
2 2 7	wtr_ 6.25	8.72	9.0689 58	9.22	0.007 738	0.5	12.4 6	13.71 771	15.3 1	0.538 329	2.85	537. 6	590.0 635	614. 1	229.8 141	76.5
2 2 7	wtr_ 7.5	8.46	8.6208 33	8.88	0.015 688	0.42	10.2 2	12.60 375	15.8 1	1.899 594	5.59	601. 3	609.8 26	614. 3	11.78 953	13
2 2 8	wtr_ 1.25	8.1	8.8689 13	10.08	0.329 902	1.98	8.87	9.813 913	11.4 4	0.501 125	2.57	324. 6	345.1 635	357. 7	72.90 845	33.1
2 2 8	wtr_ 2.5	7.9	8.4602 08	8.98	0.082 295	1.08	8.5	10.61 26	15.5 7	3.251 979	7.07	337. 9	357.9 177	374. 8	54.51 621	36.9
2 2 8	wtr_ 3.75	8.04	8.3472 92	8.64	0.015 285	0.6	8.42	10.66 656	14.1 7	2.959 511	5.75	352	370.7 333	397. 3	134.4 311	45.3
2 2 8	wtr_ 5.0	7.78	8.1706 25	8.3	0.009 507	0.52	6.26	10.41 885	15.7 7	8.072 564	9.51	403. 1	437.0 406	456. 9	230.7 368	53.8
2 2 8	wtr_ 6.25	8.96	9.1387 5	9.32	0.008 158	0.36	12.5 1	14.15 667	15.7 1	0.642 69	3.2	564. 5	598.0 927	625. 9	168.8 167	61.4
2 2 8	wtr_ 7.5	8.52	8.7110 42	8.98	0.021 102	0.46	10.8 6	13.12 938	16.3 5	2.118 358	5.49	600. 1	607.3 563	615. 3	13.11 849	15.2
2 2 9	wtr_ 1.25	8.3	8.7639 58	9.22	0.082 363	0.92	8.74	9.787 708	11.0 5	0.373 738	2.31	322. 6	344.2 813	357. 6	92.66 638	35

2 2 9	wtr_ 2.5	8.16	8.4702 08	8.82	0.022 846	0.66	8.39	10.66 896	15.1 1	3.731 502	6.72	344. 8	358.7 583	367. 5	34.42 372	22.7
2 2 9	wtr_ 3.75	8.16	8.4016 67	8.8	0.020 309	0.64	8.46	10.94 083	15.0 4	3.970 324	6.58	352. 8	372.6 333	398. 1	139.3 82	45.3
2 2 9	wtr_ 5.0	8.12	8.2825	8.44	0.004 794	0.32	6.78	10.65 354	19.0 3	9.568 078	12.25	415. 5	445.3 083	463. 8	155.1 145	48.3
2 2 9	wtr_ 6.25	8.94	9.1972 92	9.4	0.008 485	0.46	11.9 3	14.46 594	17.0 6	1.036 481	5.13	550. 2	608	636. 4	298.6 931	86.2
2 2 9	wtr_ 7.5	8.52	8.7043 75	9.02	0.017 871	0.5	11.1 5	12.85 115	15.5 4	1.402 979	4.39	595. 1	608.9 615	616	22.23 481	20.9
2 3 0	wtr_ 1.25	8.24	8.7842 55	9.46	0.167 457	1.22	8.72	9.957 128	13.9 7	1.295 003	5.25	326. 7	348.8 271	372. 7	119.1 86	46
2 3 0	wtr_ 2.5	8.04	8.5020 83	8.86	0.048 147	0.82	8.39	10.66 01	14.6	3.616 14	6.21	348. 9	364.1 427	374. 8	34.76 437	25.9
2 3 0	wtr_ 3.75	8.12	8.4110 42	8.8	0.024 361	0.68	8.36	11.57 375	16.2 6	8.931 436	7.9	354. 6	375.4 365	398. 5	139.3 998	43.9
2 3 0	wtr_ 5.0	8.14	8.3093 75	8.56	0.007 427	0.42	5.88	11.17 646	19.4 9	18.77 15	13.61	422. 3	451.5 563	471. 4	176.0 094	49.1
2 3 0	wtr_ 6.25	9.18	9.2864 58	9.42	0.003 17	0.24	13.6 2	15.14 271	17.4 6	1.155 772	3.84	584. 8	622.5 563	645. 9	91.58 817	61.1
2 3 0	wtr_ 7.5	8.58	8.7595 83	9.08	0.023 132	0.5	10.6	13.23 833	16.4 8	2.335 536	5.88	569. 5	602.5	631. 4	292.2 442	61.9

2 3 1	wtr_ 1.25	8.18	8.7638 3	9.36	0.115 546	1.18	8.73	9.881 596	13.6 6	0.999 031	4.93	322. 6	347.8 427	364. 5	159.9 631	41.9
2 3 1	wtr_ 2.5	7.98	8.4308 33	8.84	0.050 214	0.86	8.42	10.11 479	12.4 9	1.533 328	4.07	332. 1	361.3 125	376. 4	117.4 954	44.3
2 3 1	wtr_ 3.75	8.06	8.4110 42	8.86	0.026 66	0.8	8.31	11.87 375	17.8 5	11.06 082	9.54	361. 1	380.2 49	405	96.33 095	43.9
2 3 1	wtr_ 5.0	8.16	8.3504 17	8.5	0.006 366	0.34	5.71	11.35 281	19.9 7	19.41 4	14.26	417. 4	455.6 333	482. 4	293.2 294	65
2 3 1	wtr_ 6.25	9.16	9.2566 67	9.36	0.002 364	0.2	13.2 4	15.01 969	17.0 6	1.098 58	3.82	588	626.2 115	649	118.4 202	61
2 3 1	wtr_ 7.5	8.62	8.7408 33	9.04	0.012 26	0.42	11.2 2	13.17 604	15.7 6	1.441 266	4.54	559. 5	608.4 854	634. 5	448.7 013	75
2 3 2	wtr_ 1.25	8.08	8.3945 83	8.78	0.033 309	0.7	8.6	9.548 75	12.3	0.488 729	3.7	321. 6	345.1 865	363. 2	215.2 296	41.6
2 3 2	wtr_ 2.5	7.9	8.2108 33	8.56	0.019 755	0.66	8.28	10.03 24	14.8 5	1.988 362	6.57	348. 3	365.8 292	377. 9	58.63 535	29.6
2 3 2	wtr_ 3.75	7.96	8.2670 83	8.62	0.022 888	0.66	7.81	11.08 688	17.6 8	8.538 649	9.87	368. 2	388.8 333	411. 5	104.2 582	43.3
2 3 2	wtr_ 5.0	7.96	8.1995 83	8.44	0.013 187	0.48	5.72	9.802 083	19.3 5	12.62 429	13.63	439. 5	464.3 969	483. 1	130.5 841	43.6
2 3 2	wtr_ 6.25	9.14	9.2070 83	9.36	0.001 743	0.22	13.4	14.80 896	17.9 3	1.173 974	4.53	615. 4	632.7 969	656. 9	69.89 588	41.5

2 3 2	wtr_ 7.5	8.48	8.6385 42	8.84	0.007 202	0.36	11.3 7	12.43 313	14.5 4	0.697 055	3.17	627. 2	633.0 063	642. 4	11.47 849	15.2
2 3 3	wtr_ 1.25	7.96	8.3909 47	8.94	0.076 934	0.98	8.84	9.734 632	11.8 2	0.660 702	2.98	326. 9	353.9 104	368. 3	154.9 405	41.4
2 3 3	wtr_ 2.5	7.72	8.1381 25	8.48	0.036 775	0.76	8.07	10.29 573	15.1 1	3.411 759	7.04	349. 8	366.0 333	378. 6	66.68 161	28.8
2 3 3	wtr_ 3.75	8.02	8.1725	8.44	0.008 676	0.42	7.41	11.69 323	19.8 3	15.98 56	12.42	365. 8	390.1 219	403. 2	61.85 436	37.4
2 3 3	wtr_ 5.0	7.9	8.0862 5	8.26	0.005 249	0.36	5.13	9.875 833	16.6 1	14.64 58	11.48	409. 2	460.2 323	485. 1	625.2 085	75.9
2 3 3	wtr_ 6.25	9.04	9.1858 33	9.32	0.003 865	0.28	13.0 5	14.90 167	17.8 4	1.413 705	4.79	588. 5	641.7 5	666. 2	156.2 545	77.7
2 3 3	wtr_ 7.5	8.48	8.5887 5	8.82	0.008 361	0.34	10.4 7	12.25 698	14.7 5	1.141 575	4.28	629. 1	637.0 385	685. 1	34.76 008	56
2 3 4	wtr_ 1.25	7.92	8.6903 23	9.86	0.324 518	1.94	8.63	9.739 247	12.8 9	0.906 053	4.26	329. 6	360.1 042	375. 8	130.8 166	46.2
2 3 4	wtr_ 2.5	7.7	8.2320 83	8.74	0.109 907	1.04	8.33	10.20 042	13.9 1	2.608 922	5.58	335. 3	366.5 135	383. 1	179.4 959	47.8
2 3 4	wtr_ 3.75	7.96	8.2037 5	8.66	0.030 739	0.7	7.13	11.81 573	19.3 3	16.16 793	12.2	380. 4	391.8 813	407. 5	34.47 228	27.1
2 3 4	wtr_ 5.0	7.86	8.1185 42	8.4	0.012 516	0.54	5.22	10.66 313	19.7 1	20.21 899	14.49	413. 4	462.8 385	503. 8	735.3 434	90.4

2 3 4	wtr_ 6.25	9	9.1743 75	9.32	0.004 158	0.32	12.4 6	14.89 948	17.8 6	1.746 761	5.4	595	649.7 26	673. 3	108.5 975	78.3
2 3 4	wtr_ 7.5	8.5	8.6218 75	8.88	0.011 344	0.38	10.8 1	13.02 115	17.1	2.709 038	6.29	622. 4	637.5 854	649. 1	32.12 842	26.7
2 3 5	wtr_ 1.25	8.4	8.8410 42	9.26	0.049 165	0.86	8.69	9.596 875	11.5 7	0.555 521	2.88	341. 5	362.7 25	372. 1	61.10 147	30.6
2 3 5	wtr_ 2.5	8.14	8.4597 92	8.72	0.021 175	0.58	7.72	9.766 458	13.1 5	2.092 48	5.43	335. 6	373.2 594	392	188.8 328	56.4
2 3 5	wtr_ 3.75	7.94	8.3137 5	8.6	0.014 268	0.66	7.12	10.18 031	16.2 8	7.133 228	9.16	379. 8	397.6 354	416. 3	101.9 509	36.5
2 3 5	wtr_ 5.0	8	8.1975	8.38	0.007 615	0.38	5.62	10.18 094	22.4 5	14.57 218	16.83	433. 4	472.7 063	495. 8	327.0 709	62.4
2 3 5	wtr_ 6.25	8.94	9.0779 17	9.22	0.002 64	0.28	12.2 8	14.31 365	17.3 4	1.430 451	5.06	592. 5	647.7 25	676. 9	177.0 992	84.4
2 3 5	wtr_ 7.5	8.44	8.6118 75	8.88	0.010 556	0.44	10.7 2	12.63 292	14.9 5	1.099 831	4.23	612. 1	633.7 448	642. 6	54.07 976	30.5
2 3 6	wtr_ 1.25	7.92	8.4585 42	8.86	0.065 501	0.94	8.84	9.754 688	11.9 1	0.506 478	3.07	331. 1	342.9 656	364. 7	102.6 656	33.6
2 3 6	wtr_ 2.5	7.86	8.2095 83	8.46	0.026 467	0.6	7.77	9.764 792	13.1 2	2.353 802	5.35	323. 2	349.8 135	379. 8	350.5 686	56.6
2 3 6	wtr_ 3.75	8.04	8.2520 83	8.44	0.010 842	0.4	7.56	10.71 875	16.6 4	8.070 253	9.08	342. 8	372.3 688	408. 5	414.0 742	65.7

2 3 6	wtr_ 5.0	7.82	8.0943 75	8.36	0.019 551	0.54	6.84	9.567 188	15	5.598 014	8.16	424. 4	452.4 417	486. 7	388.8 401	62.3
2 3 6	wtr_ 6.25	8.96	9.0391 67	9.12	0.001 204	0.16	12.6 6	13.99 333	16.0 9	0.850 517	3.43	616. 9	648.6 625	674. 2	165.4 495	57.3
2 3 6	wtr_ 7.5	8.42	8.5485 42	8.68	0.003 779	0.26	10.2 3	11.82 688	13.9	0.976 329	3.67	633. 4	639.6 177	649. 1	8.584 63	15.7
2 3 7	wtr_ 1.25	8.14	8.3791 67	8.8	0.026 517	0.66	8.89	9.794 375	11.8 6	0.613 873	2.97	304. 9	323.7 823	338. 2	106.3 971	33.3
2 3 7	wtr_ 2.5	7.86	8.1906 25	8.5	0.016	0.64	7.51	10.06 208	14.5 1	4.722 602	7	312. 5	339.6 823	361. 3	190.3 669	48.8
2 3 7	wtr_ 3.75	8	8.1881 25	8.46	0.007 895	0.46	7.51	10.71 688	17.1 6	9.738 891	9.65	334. 3	357.5 198	375. 1	98.63 487	40.8
2 3 7	wtr_ 5.0	7.9	8.0339 58	8.16	0.003 866	0.26	6.69	10.31 375	19.3 7	12.99 359	12.68	382. 4	433.7 063	455. 5	541.6 73	73.1
2 3 7	wtr_ 6.25	8.98	9.0410 42	9.16	0.001 409	0.18	12.6 6	14.17 208	17.9 3	1.783 846	5.27	635. 6	655.7 083	676. 4	80.91 298	40.8
2 3 7	wtr_ 7.5	8.36	8.4629 17	8.66	0.005 911	0.3	9.1	11.69 448	15.0 8	1.383 585	5.98	634. 1	639.8 135	644. 8	5.001 183	10.7
2 3 8	wtr_ 1.25	7.86	8.4749 47	9.34	0.238 851	1.48	8.8	9.757 053	11.8 8	0.789 032	3.08	301. 4	320.3 177	333. 4	82.03 474	32
2 3 8	wtr_ 2.5	7.76	8.2325	8.7	0.071 067	0.94	7.42	10.03 458	14.5	4.331 351	7.08	302. 1	334.8 833	357. 6	293.5 934	55.5

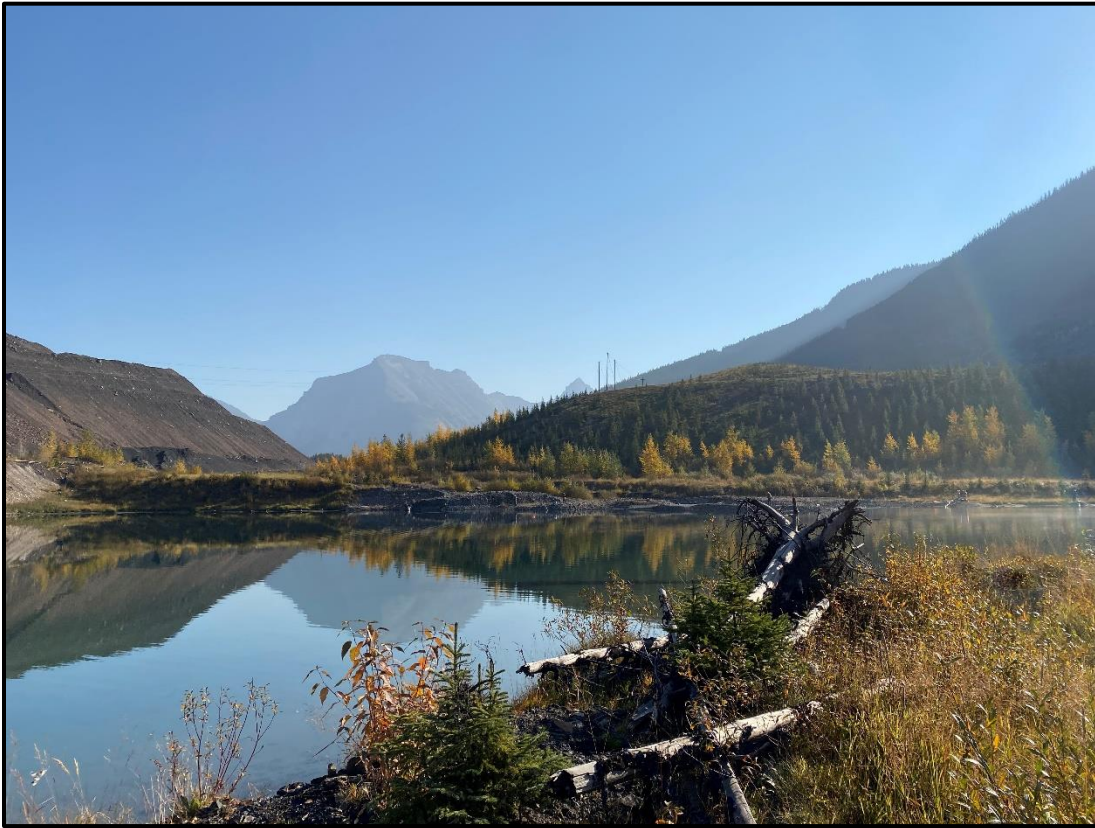
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2 3 8	wtr_ 5.0	7.62	7.9622 92	8.22	0.019 266	0.6	6.4	9.781 875	15.5 2	7.394 274	9.12	384. 7	421.8 719	452. 1	315.2 178	67.4
2 3 8	wtr_ 6.25	8.9	9.0135 42	9.12	0.001 419	0.22	12.1	14.12 198	18	2.101 302	5.9	575. 5	652.8 865	679. 1	198.5 022	103.6
2 3 8	wtr_ 7.5	8.26	8.4487 5	8.64	0.012 074	0.38	9.22	11.89 583	14.8	1.930 599	5.58	629. 3	639.1 781	645. 8	18.13 773	16.5
2 3 9	wtr_ 1.25	7.82	8.1548 94	8.56	0.032 774	0.74	8.83	9.580 319	12.1 9	0.536 663	3.36	279. 8	304.4 635	327. 6	141.9 527	47.8
2 3 9	wtr_ 2.5	7.46	8.0116 67	8.44	0.053 597	0.98	8.61	9.616 042	12.2 3	0.623 214	3.62	288	319.6 51	349. 6	297.1 701	61.6
2 3 9	wtr_ 3.75	7.14	8.0297 92	8.5	0.086 552	1.36	7.92	9.995 833	15.9 2	4.413 204	8	265	325.8 563	358. 5	607.9 734	93.5
2 3 9	wtr_ 5.0	7.76	7.9562 5	8.12	0.005 156	0.36	3.88	8.524 375	14.5 1	6.565 791	10.63	349. 6	398.7 458	430. 1	723.4 13	80.5
2 3 9	wtr_ 6.25	8.68	8.875	8.98	0.005 128	0.3	11.3 2	13.15 219	17.7 2	1.845 645	6.4	562. 9	632.5 448	678. 8	706.4 17	115.9
2 3 9	wtr_ 7.5	8.3	8.4531 25	8.62	0.005 203	0.32	10.1	11.78 583	13.9 7	0.889 481	3.87	625. 3	636.9 219	642	6.938 569	16.7
2 4 0	wtr_ 1.25	7.14	7.7845 16	8.4	0.171 619	1.26	9.21	9.914 086	11.5 4	0.469 961	2.33	249. 8	271.5 542	286. 6	51.93 156	36.8

2 4 0	wtr_ 2.5	6.84	7.5066 67	8.3	0.196 924	1.46	8.74	10.07 073	12.5	1.170 792	3.76	258. 9	279.5 583	293	112.4 62	34.1
2 4 0	wtr_ 3.75	6.6	7.2289 58	7.74	0.079 401	1.14	8.09	11.04 51	16.4 1	7.802 905	8.32	262. 8	281.9 531	301	103.5 267	38.2
2 4 0	wtr_ 5.0	7.1	7.4791 67	7.9	0.035 477	0.8	7.46	9.682 813	13.5 1	3.644 035	6.05	342. 6	369.7 875	393. 2	163.4 001	50.6
2 4 0	wtr_ 6.25	8.72	8.8508 33	9	0.004 227	0.28	11.0 3	12.90 156	15.1 2	1.029 91	4.09	569. 5	625.6 573	677. 4	365.0 256	107.9
2 4 0	wtr_ 7.5	8.14	8.4310 42	8.64	0.012 605	0.5	11.2 9	12.45 323	14.8 4	0.595 407	3.55	622. 1	631.8 385	637. 6	21.09 103	15.5
2 4 1	wtr_ 1.25	6.84	7.8314 61	8.68	0.387 572	1.84	9.13	10.04 607	12.0 8	0.903 042	2.95	271	286.8 188	303. 7	95.00 238	32.7
2 4 1	wtr_ 2.5	6.68	7.6218 75	8.48	0.356 329	1.8	8.67	10.13 76	12.2 1	1.119 85	3.54	270. 1	296.0 115	314. 8	148.4 107	44.7
2 4 1	wtr_ 3.75	6.64	7.3814 58	8.14	0.200 566	1.5	8.06	11.50 521	17.7	8.989 362	9.64	286. 5	299.9 042	315. 2	55.19 661	28.7
2 4 1	wtr_ 5.0	6.88	7.2856 25	7.76	0.052 385	0.88	7.13	10.75 708	16.7 4	9.755 297	9.61	326. 8	356.8 781	386. 4	340.6 356	59.6
2 4 1	wtr_ 6.25	8.34	8.7120 83	8.9	0.009 848	0.56	11.4 9	13.05 813	15.3	0.859 529	3.81	494. 4	607.9 406	652. 9	916.6 709	158.5
2 4 1	wtr_ 7.5	8.12	8.3239 58	8.6	0.010 304	0.48	10.4 5	12.52 26	14.8 2	1.702 226	4.37	608. 3	621.5 792	636. 2	55.01 556	27.9

2 4 2	wtr_ 1.25	7.4	8.2891 11	9.44	0.294 177	2.04	8.92	10.08 722	12.8 3	1.311 955	3.91	287. 4	299.7 031	313. 5	52.18 367	26.1
2 4 2	wtr_ 2.5	7.32	7.9918 75	8.58	0.153 1	1.26	8.32	10.11 146	13.2 7	1.807 438	4.95	283	312.2 542	329. 4	150.8 438	46.4
2 4 2	wtr_ 3.75	7.24	7.8270 83	8.34	0.080 303	1.1	6.98	10.41 948	14.5 1	4.615 565	7.53	306. 2	315.9 031	330. 5	49.33 357	24.3
2 4 2	wtr_ 5.0	7.38	7.6806 25	8.02	0.018 842	0.64	6.53	10.78 115	17.7 2	15.34 742	11.19	340. 6	369.8 427	396. 8	240.8 97	56.2
2 4 2	wtr_ 6.25	8.44	8.6368 75	8.9	0.011 514	0.46	11.4 8	13.20 052	15.9 1	1.411 043	4.43	534. 2	581.2 219	639. 3	683.5 573	105.1
2 4 2	wtr_ 7.5	8.12	8.2716 67	8.5	0.009 05	0.38	11.3 2	12.97 083	16.1	1.856 313	4.78	585. 2	605.3 833	620. 9	99.30 709	35.7
2 4 3	wtr_ 1.25	7.7	8.5184 78	9.52	0.325 584	1.82	8.9	10.09 478	13.4 3	1.589 205	4.53	294. 4	311.1 542	325. 1	83.15 598	30.7
2 4 3	wtr_ 2.5	7.64	8.2052 08	8.7	0.080 97	1.06	8.25	9.906 667	13.2 6	1.740 132	5.01	287. 5	323.6 365	340. 1	162.0 922	52.6
2 4 3	wtr_ 3.75	7.46	8.0514 58	8.5	0.058 507	1.04	5.74	9.894 896	15.5 8	6.136 941	9.84	315. 1	331.9 75	352. 8	92.80 147	37.7
2 4 3	wtr_ 5.0	7.56	7.9058 33	8.18	0.015 73	0.62	5.92	10.18 25	16.0 1	14.53 402	10.09	355. 2	390.6 448	420. 6	312.6 968	65.4
2 4 3	wtr_ 6.25	8.62	8.7766 67	8.98	0.008 031	0.36	11.9 3	13.59 844	16.2 4	1.686 039	4.31	531. 1	595.0 708	647. 6	463.3 802	116.5

2 4 3	wtr_ 7.5	8.12	8.2910 42	8.6	0.019 106	0.48	10.9 5	12.88 365	16.3 2	2.379 727	5.37	577. 8	593.1 198	600. 3	29.45 213	22.5
2 4 4	wtr_ 1.25	7.88	8.2543 59	8.6	0.053 03	0.72	8.93	9.557 436	11.9 1	0.751 477	2.98	306. 6	315.1 051	321. 9	20.62 366	15.3
2 4 4	wtr_ 2.5	7.9	8.1276 92	8.32	0.012 56	0.42	8.33	9.847 179	14.0 4	3.036 447	5.71	311. 3	338.4 615	347. 6	79.77 927	36.3
2 4 4	wtr_ 3.75	7.84	8.0671 79	8.28	0.011 842	0.44	6.58	8.313 077	13.7 8	4.130 68	7.2	337. 1	344.9 385	360. 8	36.24 032	23.7
2 4 4	wtr_ 5.0	7.84	8.0620 51	8.26	0.013 048	0.42	5.95	8.357 949	16.4 7	11.79 307	10.52	381. 9	408.4 615	420. 5	136.5 756	38.6
2 4 4	wtr_ 6.25	8.7	8.7569 23	8.82	0.000 601	0.12	12	13.02 103	14.8 1	0.518 588	2.81	562. 5	594.6 615	624	185.4 298	61.5
2 4 4	wtr_ 7.5	8.22	8.2620 51	8.4	0.002 143	0.18	9.28	11.16 487	12.3 7	0.257 22	3.09	589. 3	595.4 487	597. 9	3.424 143	8.6

Henretta Lake Profile Data



Summary

October 7, 2022

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1 Summary

Henretta Lake appears to be relatively stable for the month of September, with water temperatures throughout the water column ranging between 6 – 9.5 °C, Dissolved Oxygen (DO) ranging between 6 – 16 mg/L, and conductivity between 313 – 766 µS/cm. There was little evidence of thermal stratification during September. DO remained above the limit for Westslope Cutthroat Trout (*Oncorhynchus clarkii lewisi*; 5 mg/L), and the loggers recorded less diel variability than previous months- likely as a result of the new copper cages reducing algal growth and minimizing the immediate effects of photosynthesizing algae near the sensors. There were some instances of rapid drops in DO, for example at 1.25 m on September 13, and 3.75 m on the 15th of September, however none fall below the critical level for WCT, and DO levels increase back to 'normal' relatively quickly. Water levels appear to be lower than during the summer and the deepest logger positioned at 7.5 m was subsequently buried in the sediment for the month of September. Data from this logger was removed from the summary data table and heat map plots. As previously documented, the deepest section of Henretta was typically warmer than the surface and had higher levels of oxygen and conductivity.

2 Appendices

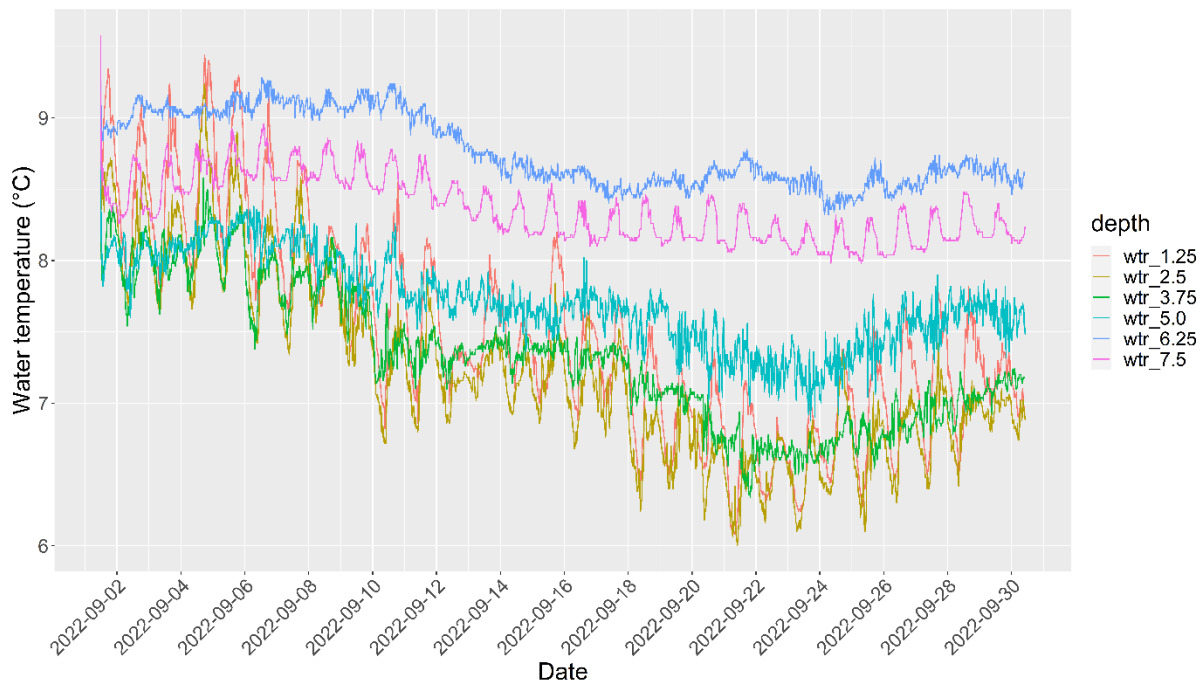


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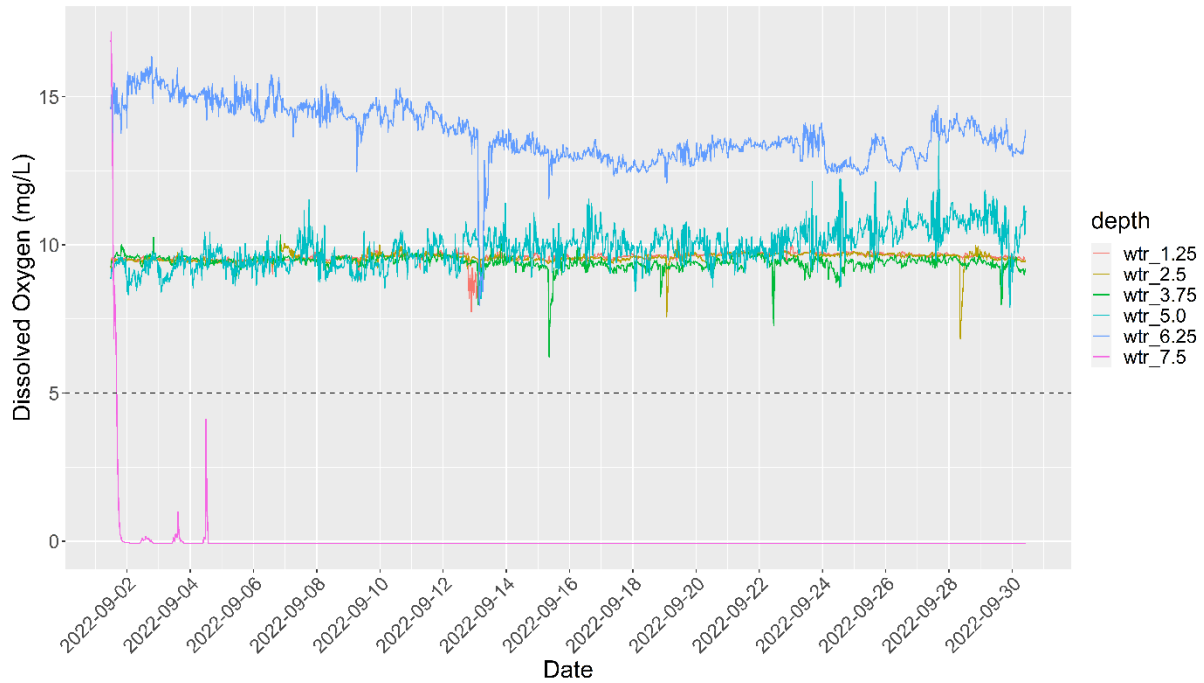


Figure 2. Dissolved Oxygen data obtained from six loggers at various depths in Henretta Lake (site 3) between September 02 and September 30, 2022. Dates along the x-axis in yyyy-mm-dd format. The deepest logger at 7.5 m was buried in the sediment.

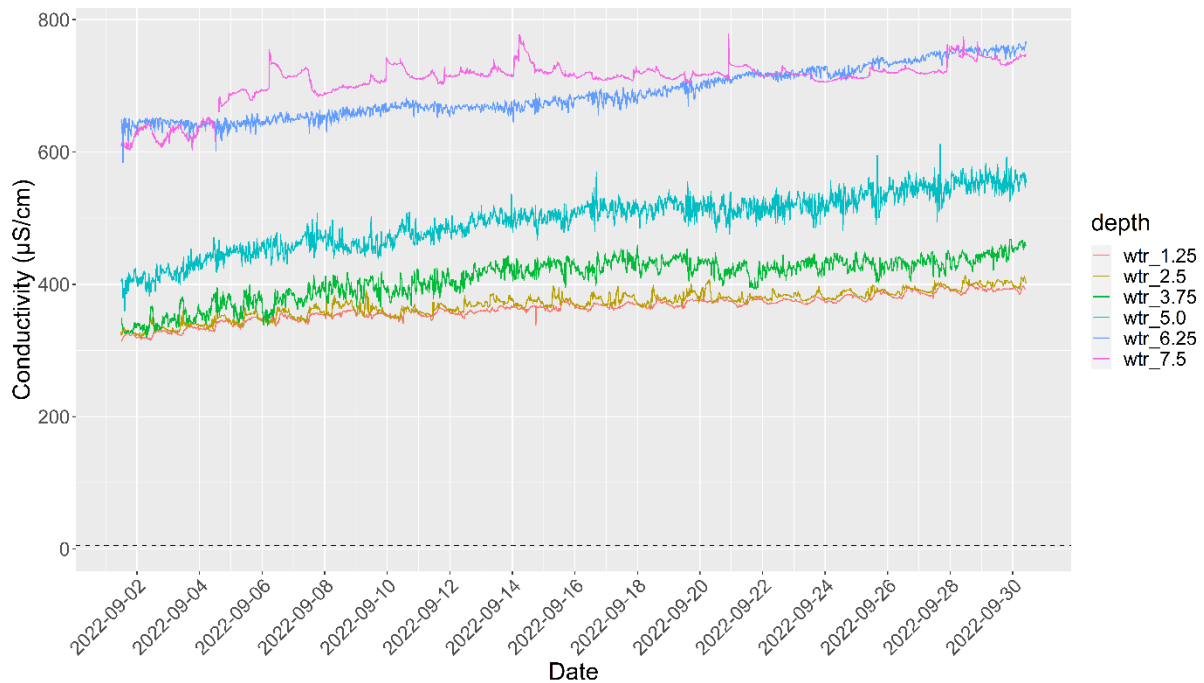


Figure 3. Conductivity ($\mu\text{S}/\text{cm}$) data obtained from six loggers at various depths in Henretta Lake (site 3) between September 02 and September 30, 2022. Dates along the x-axis in

yyyy-mm-dd format. The deepest two loggers detecting higher conductivity than other water depths, as observed in the Spring and Summer of 2022.

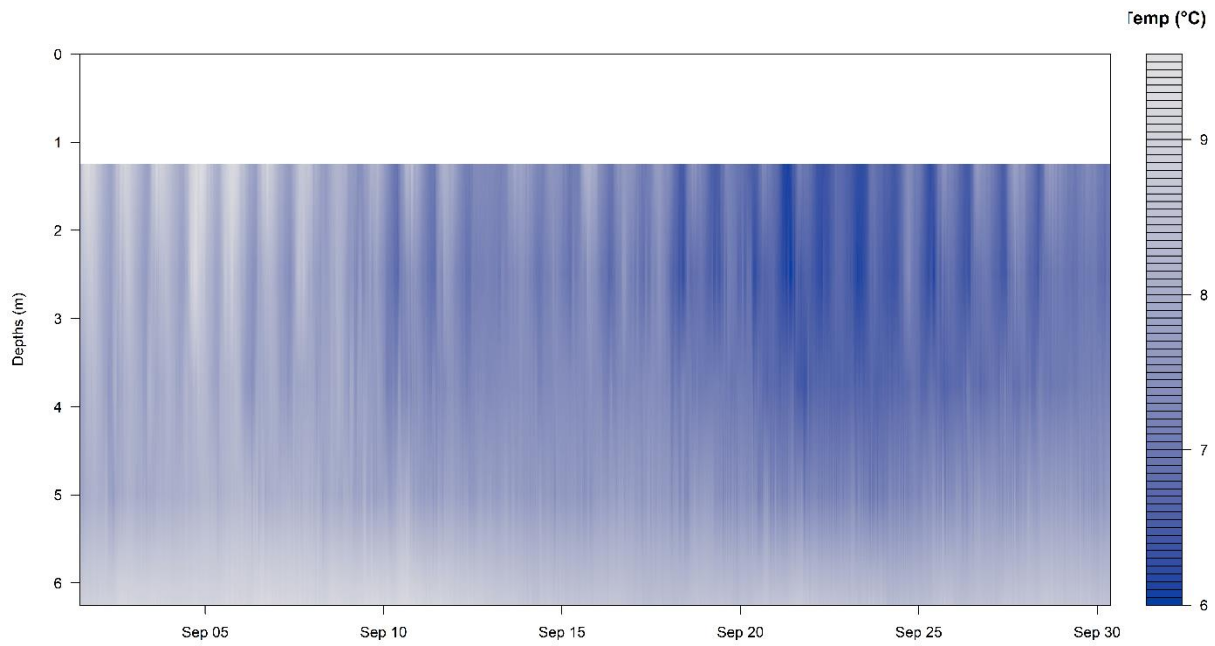


Figure 4. A heat map of water temperature throughout the water column at site 3. As seen previously, the lower part of the water column appears to be warmer. Diel variation in water temperature is likely a result of solar radiation or wind-driven water movement.

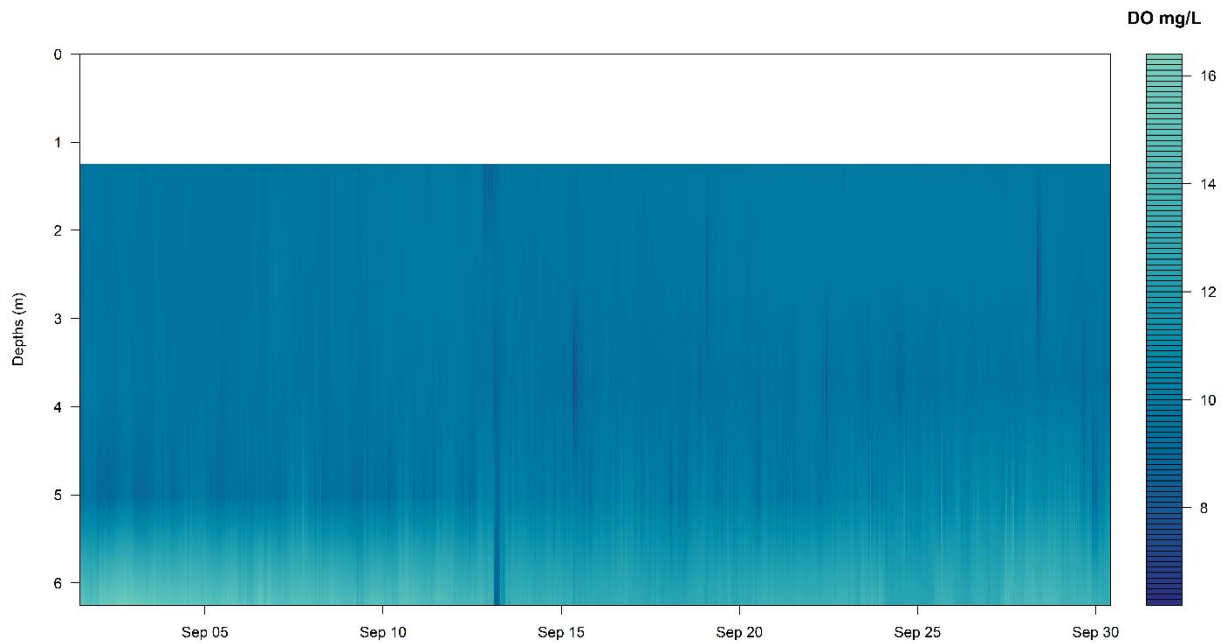


Figure 5. A heat map of water Dissolved Oxygen throughout the water column at site 3. The lower part of the water column appears to have increased DO values when compared to the surface. Diel variation in water DO is likely a result of algae photosynthesis and respiration. Loggers have now been fitted with copper cages to minimize growth of algae around the sensor.

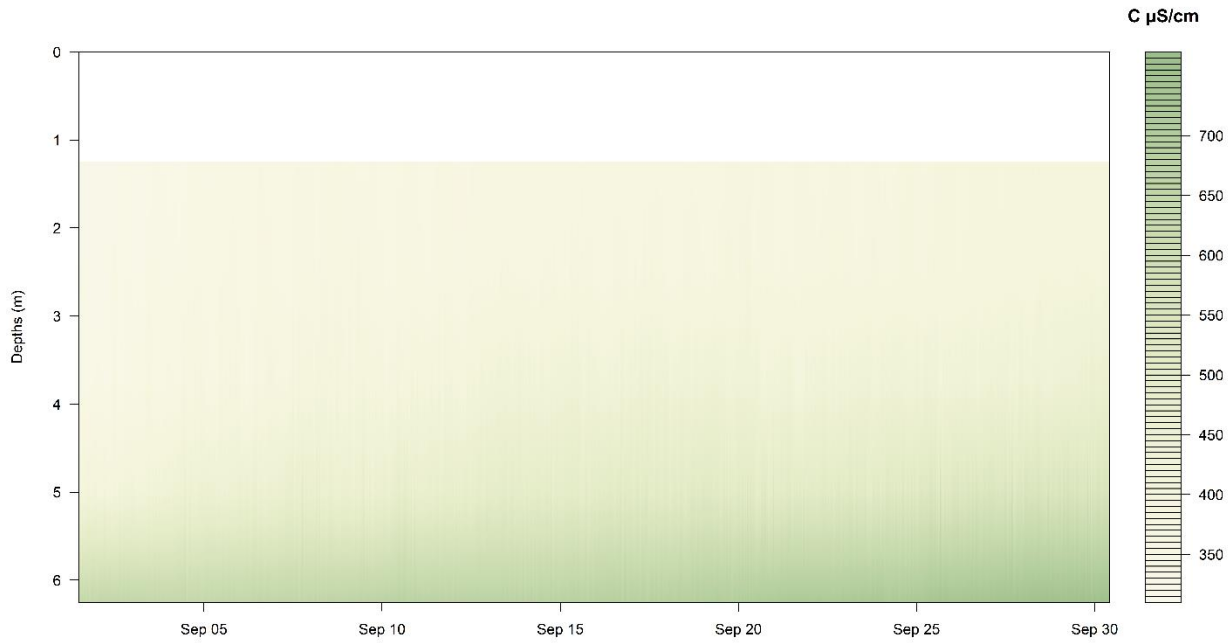


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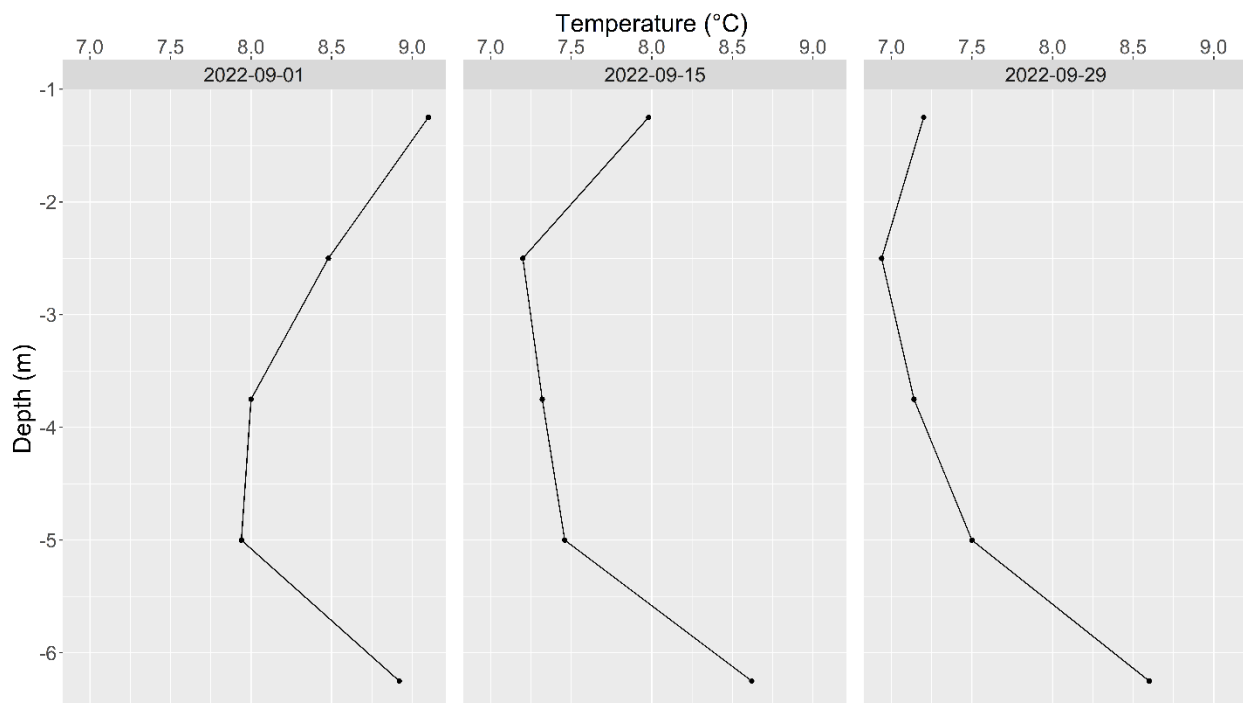


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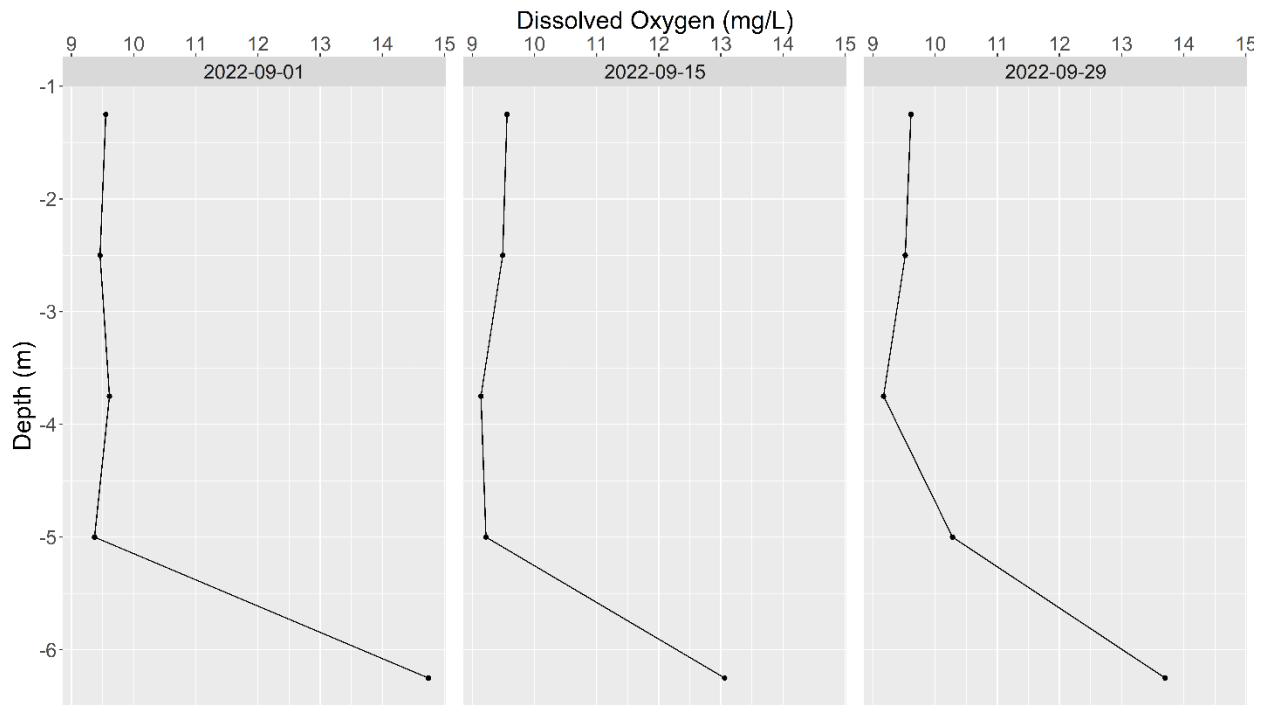


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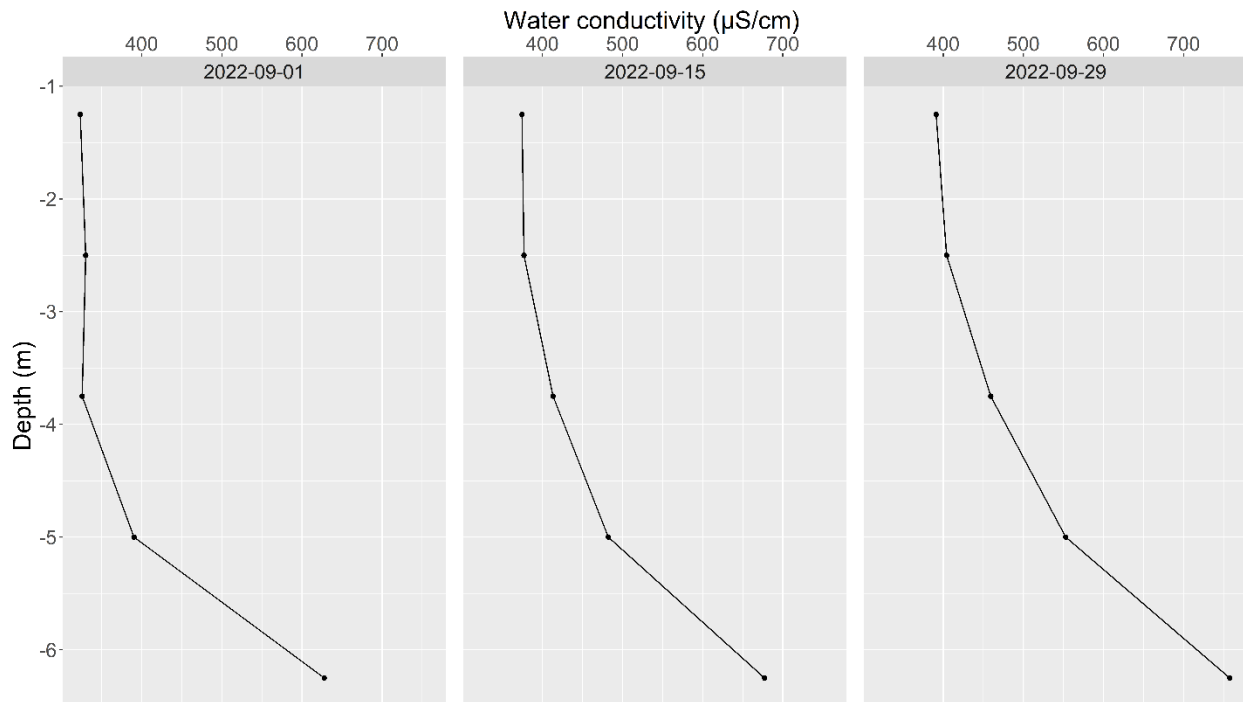


Figure 9. Water conductivity (µS/cm) profile for 01, 15, and 29 September 2022 at site 3.

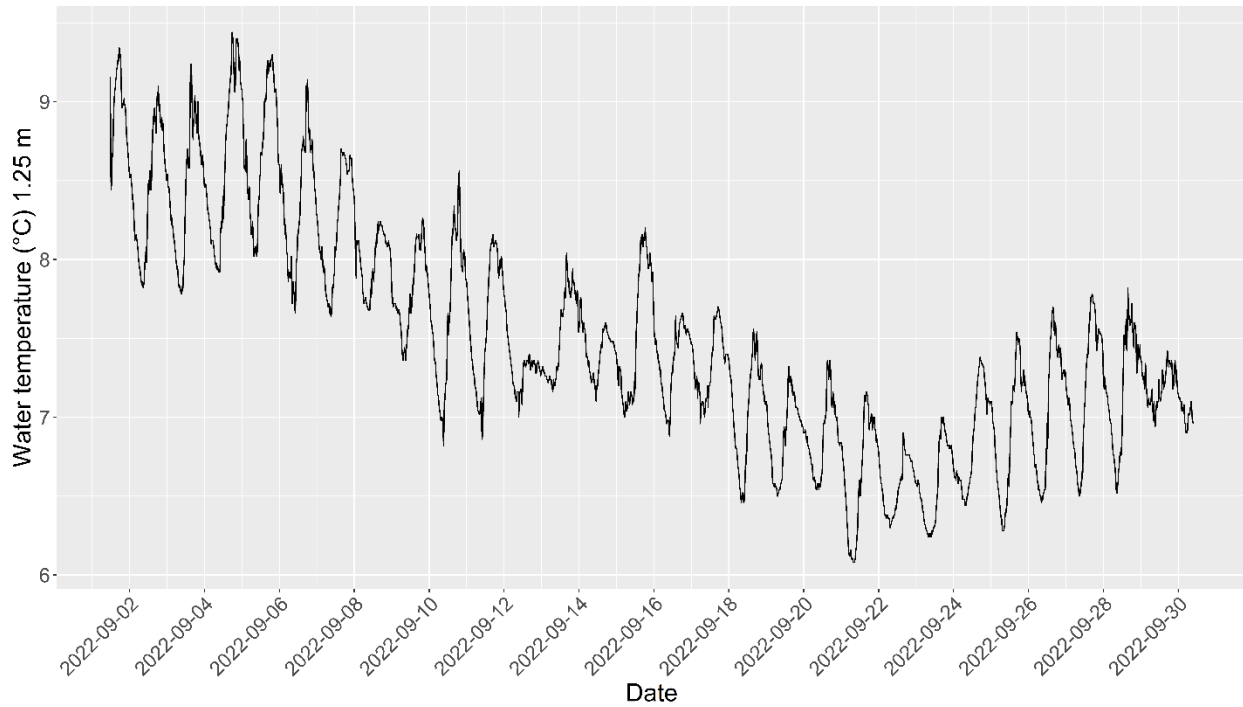


Figure 10. Water temperature at 1.25 m depth at site 3, Henretta Lake.

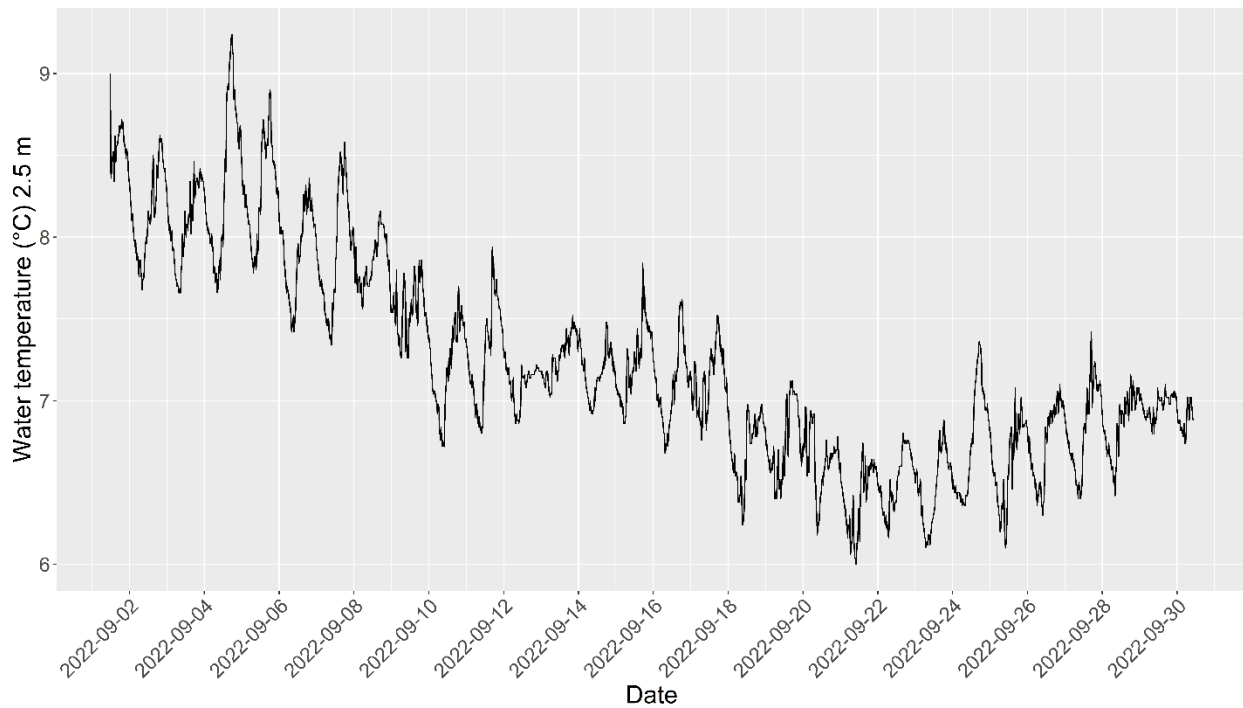


Figure 11. Water temperature at 2.5 m depth at site 3, Henretta Lake.

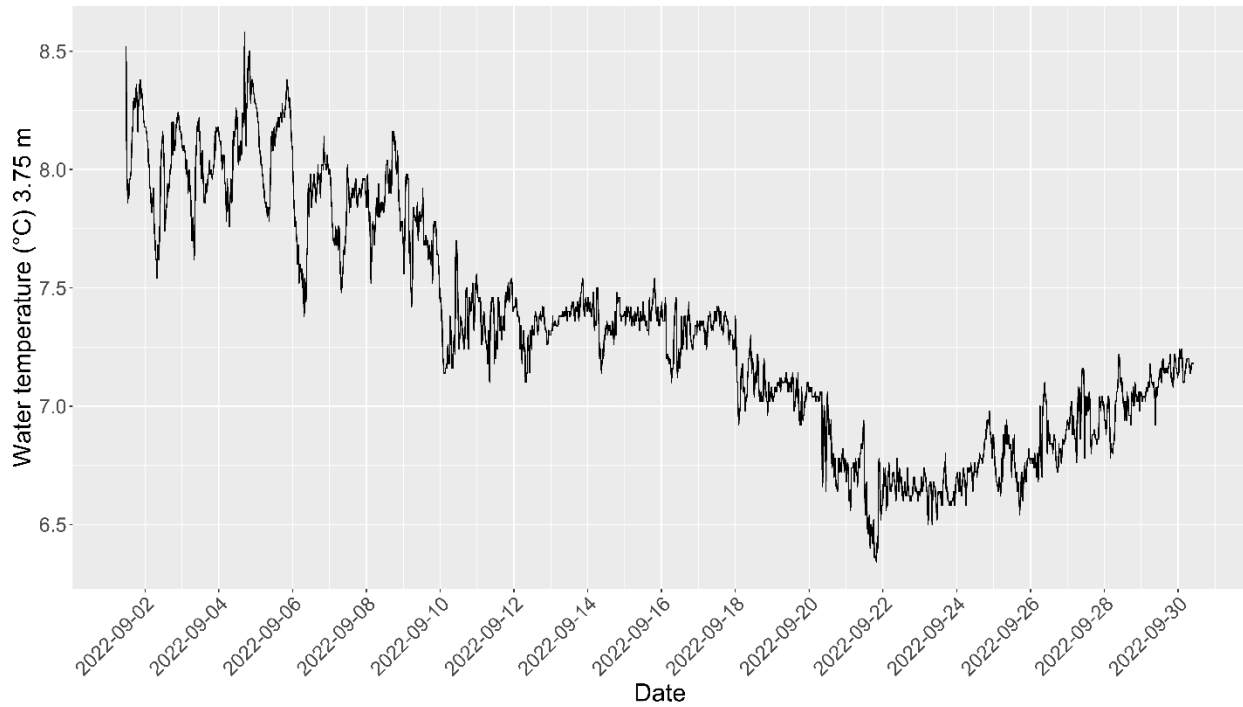


Figure 12. Water temperature at 3.75 m depth at site 3, Henretta Lake.

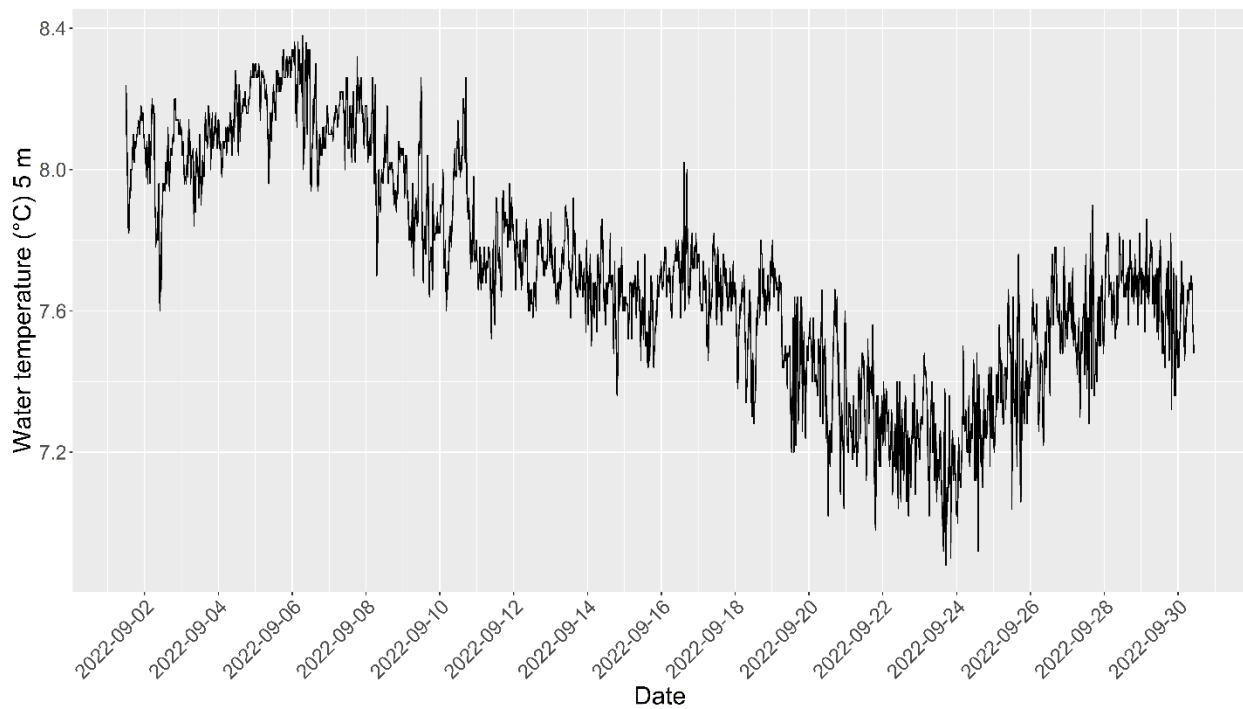


Figure 13. Water temperature at 5 m depth at site 3, Henretta Lake.

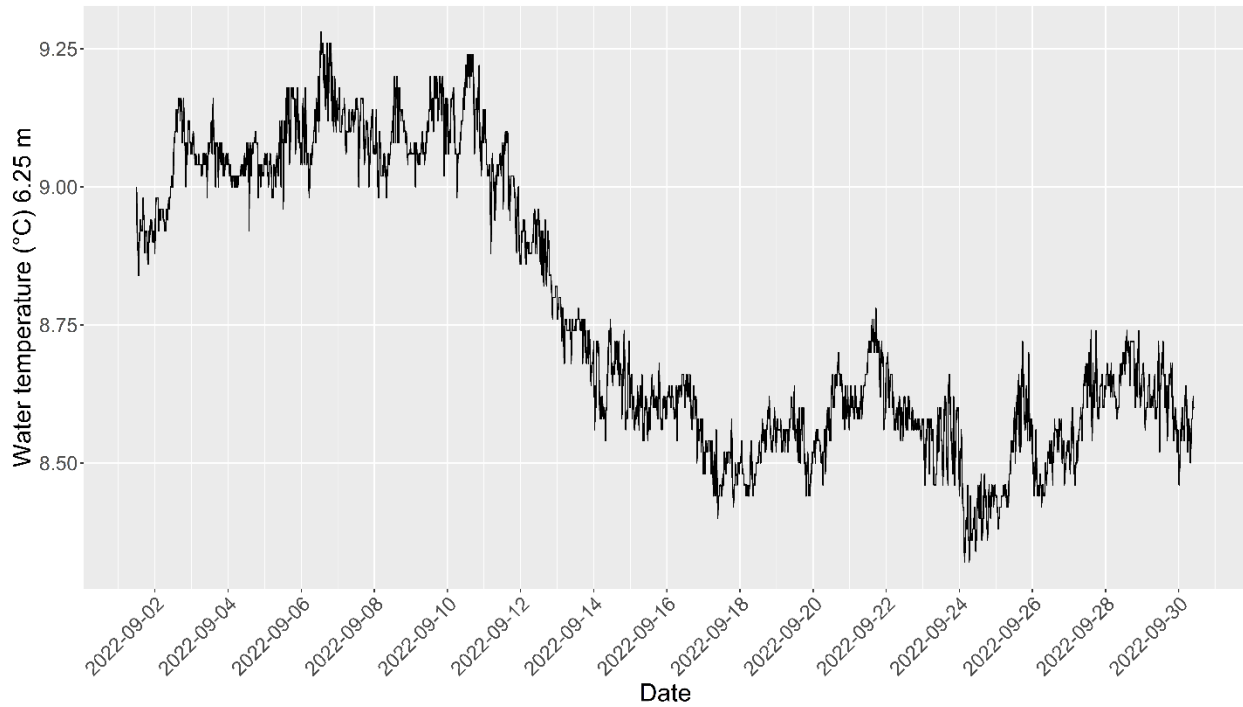


Figure 14. Water temperature at 6.25 m depth at site 3, Henretta Lake.

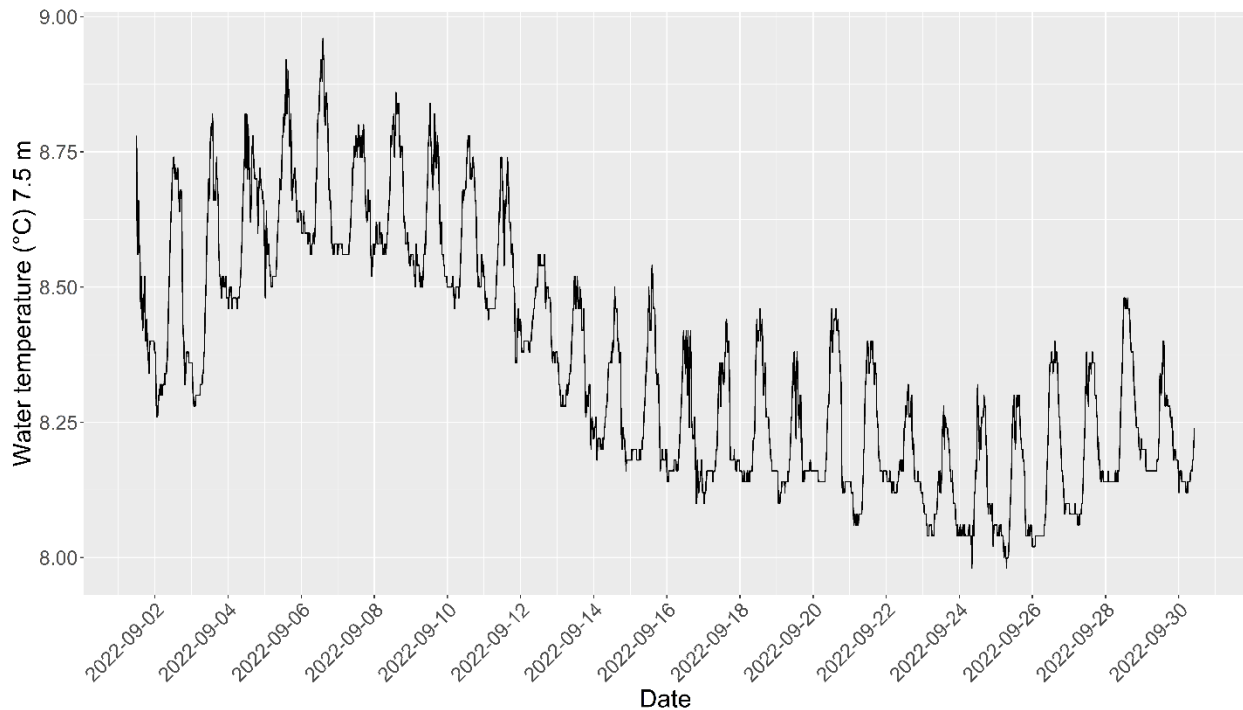


Figure 15. Water temperature at 7.5 m depth at site 3, Henretta Lake.

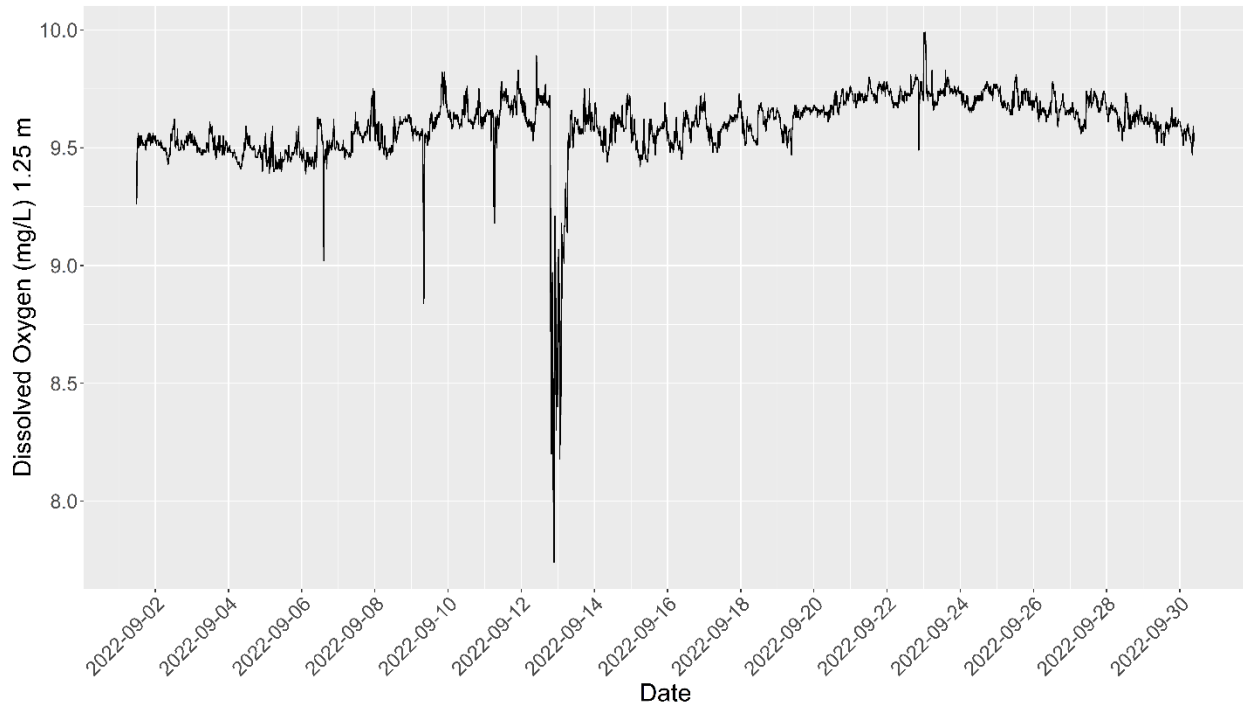


Figure 16. Dissolved Oxygen at 1.25 m depth at site 3, Henretta Lake.

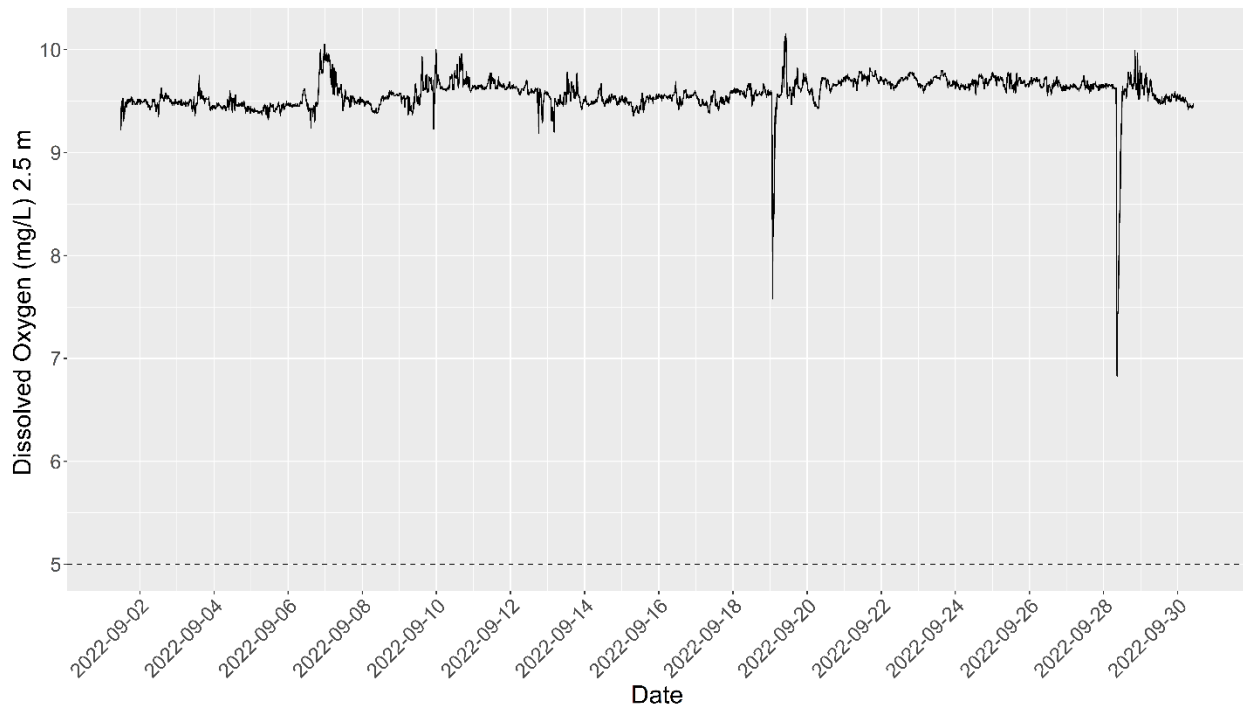


Figure 17. Dissolved Oxygen at 2.5 m depth at site 3, Henretta Lake.

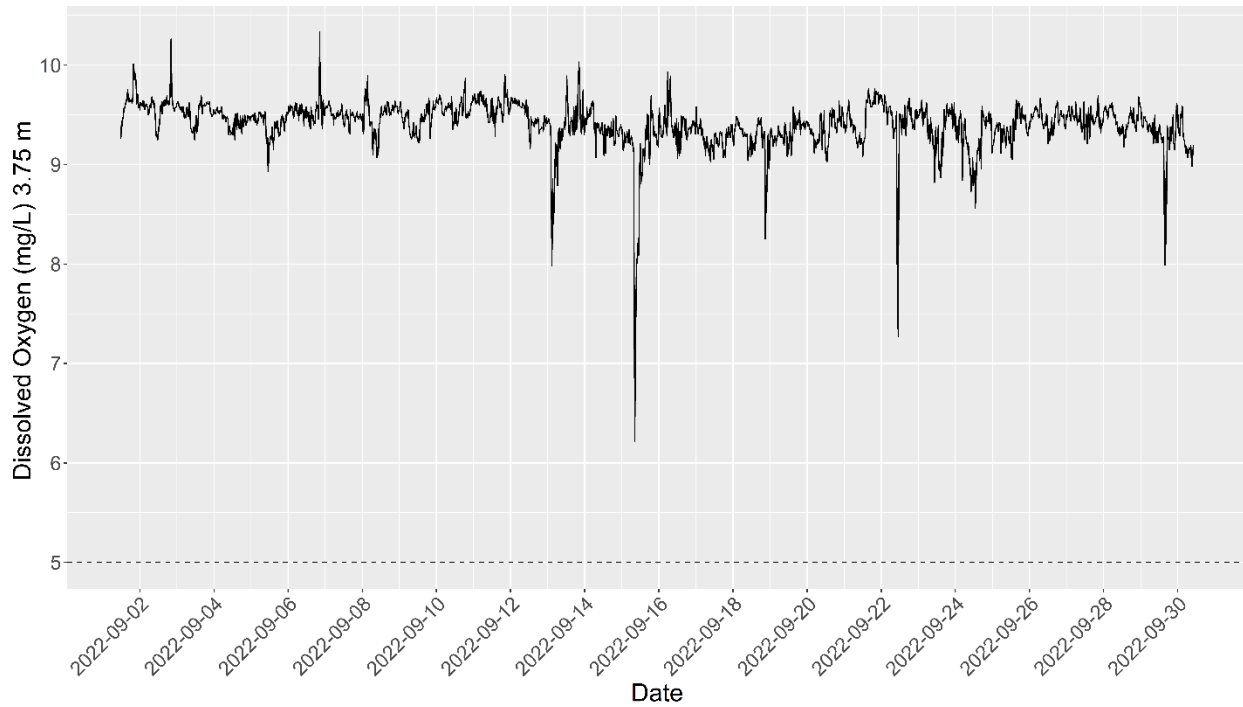


Figure 18. Dissolved Oxygen at 3.75 m depth at site 3, Henretta Lake.

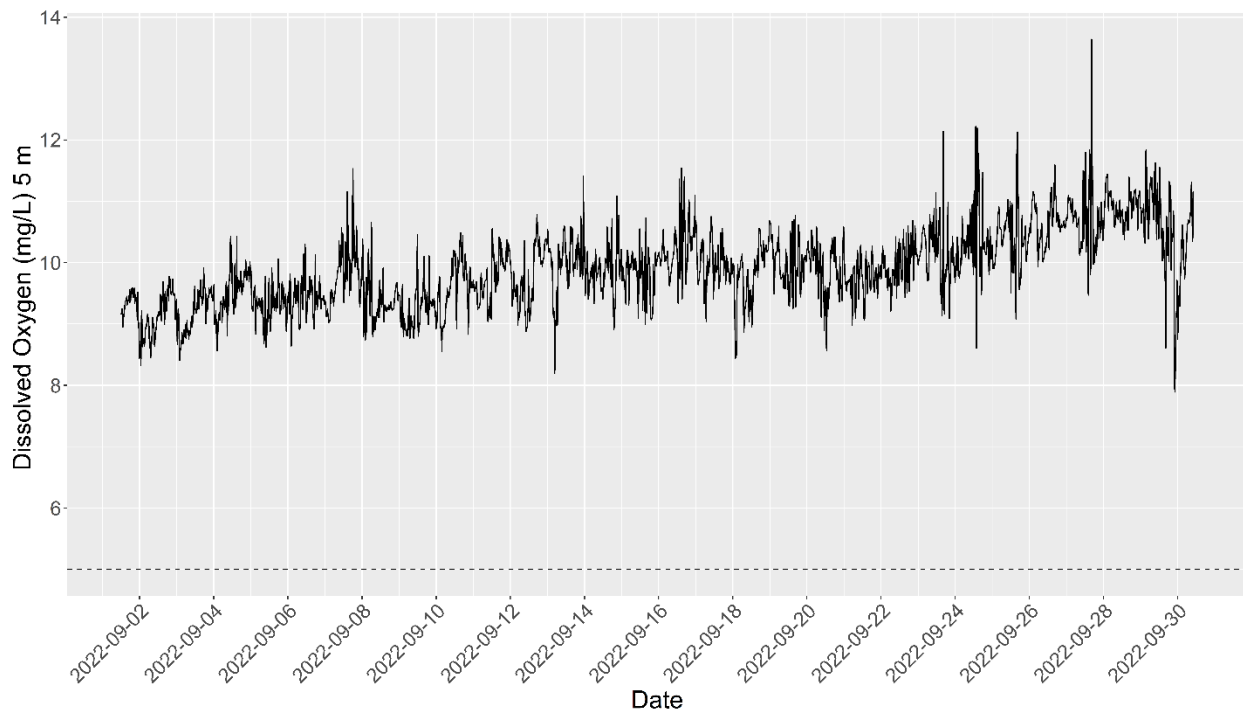


Figure 19. Dissolved Oxygen at 5 m depth at site 3, Henretta Lake.

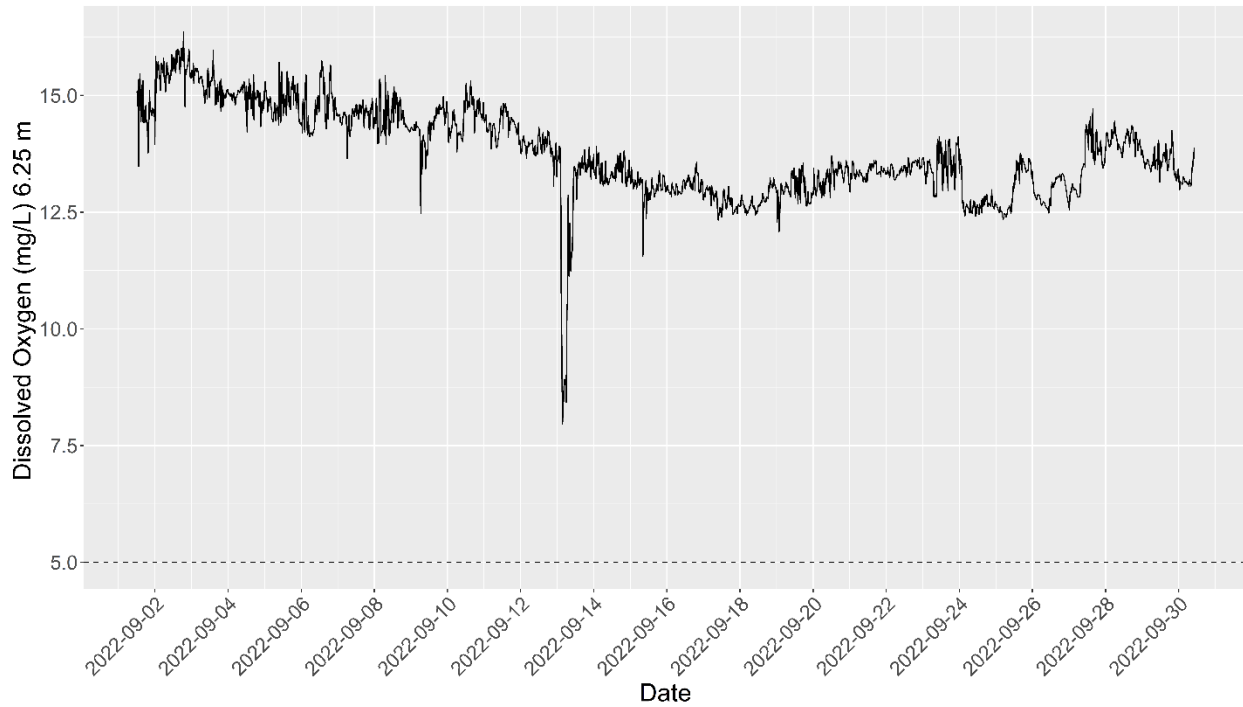


Figure 20. Dissolved Oxygen at 6.25 m depth at site 3, Henretta Lake.

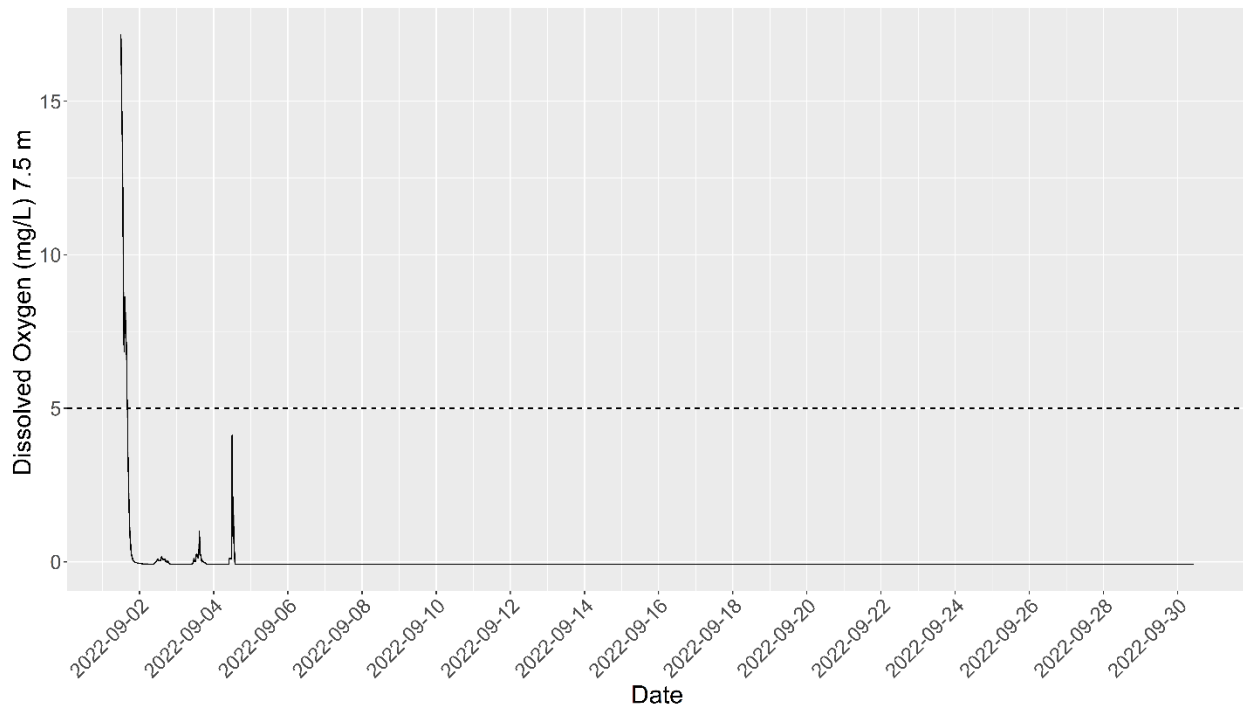


Figure 21. Dissolved Oxygen at 7.5 m depth at site 3, Henretta Lake. Logger likely buried in the sediment so data was excluded from summary table.

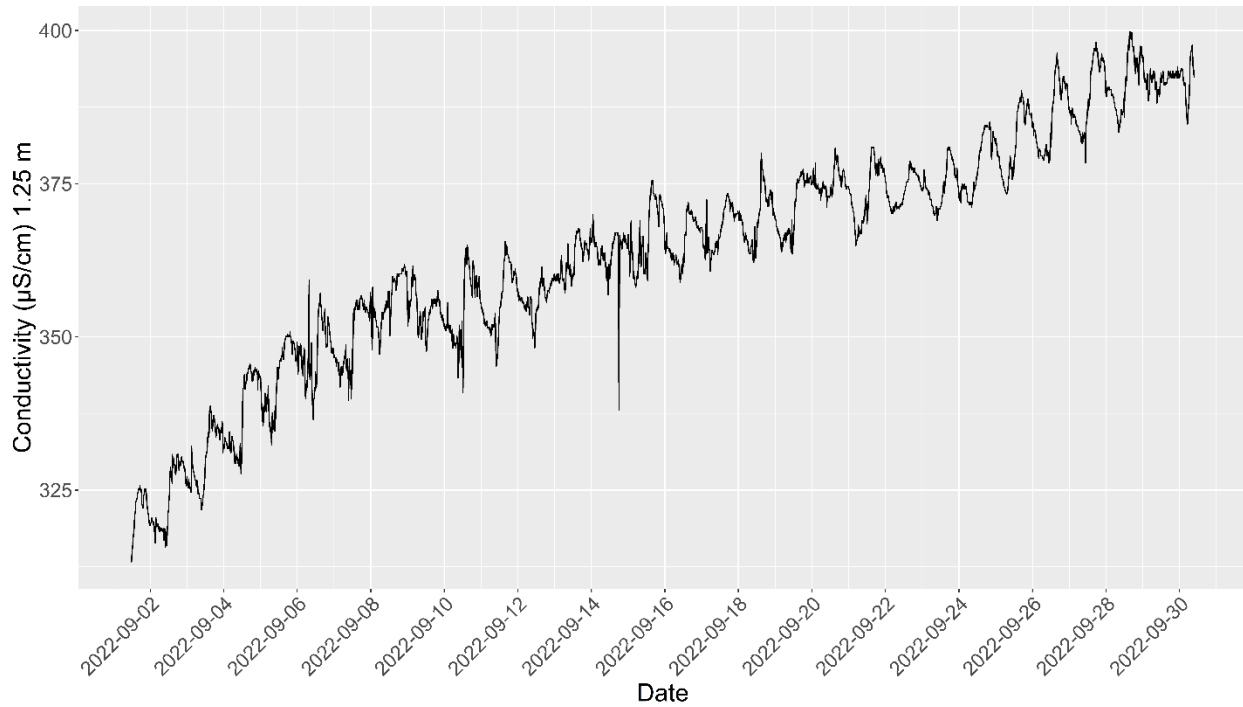


Figure 22. Conductivity at 1.25 m depth at site 3, Henretta Lake.

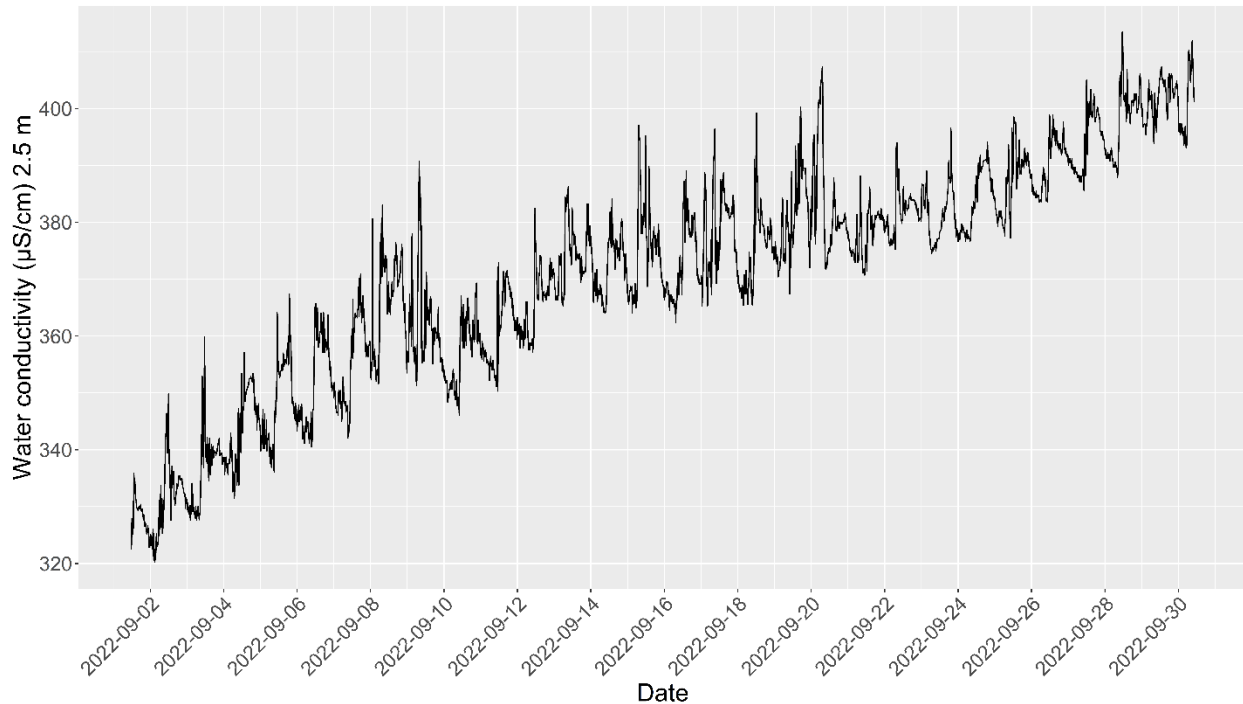


Figure 23. Conductivity at 2.5 m depth at site 3, Henretta Lake.

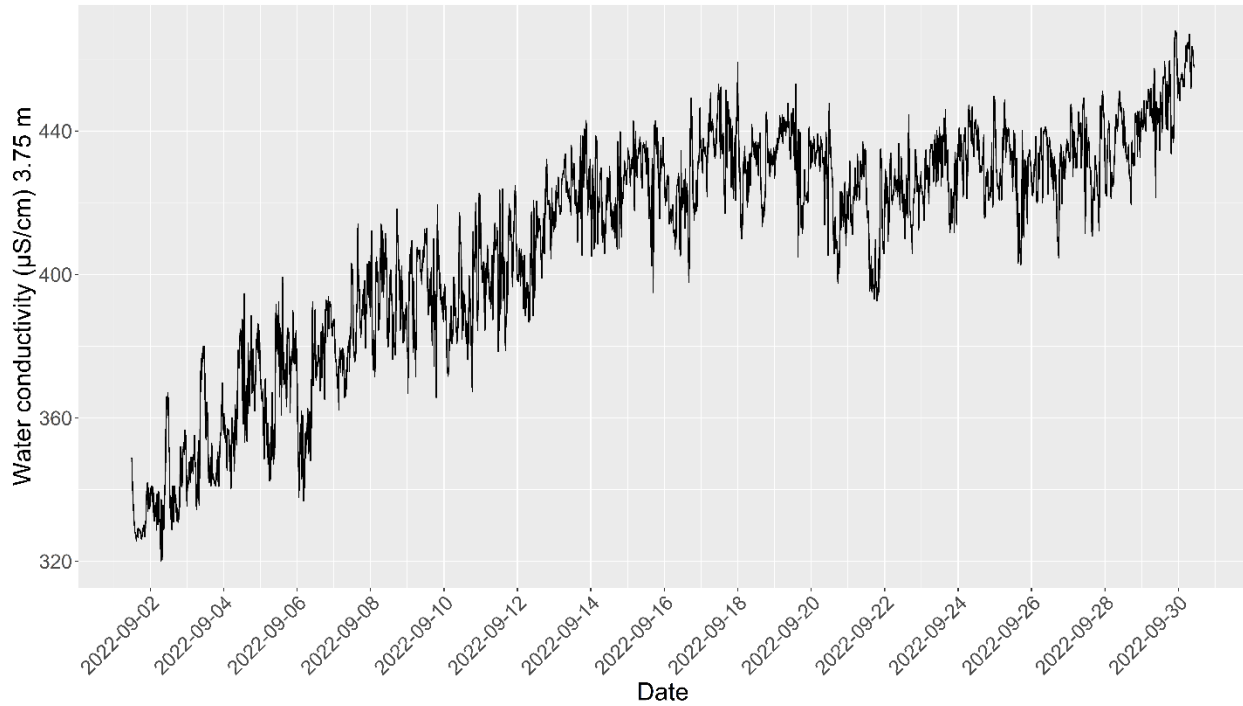


Figure 24. Conductivity at 3.75 m depth at site 3, Henretta Lake.

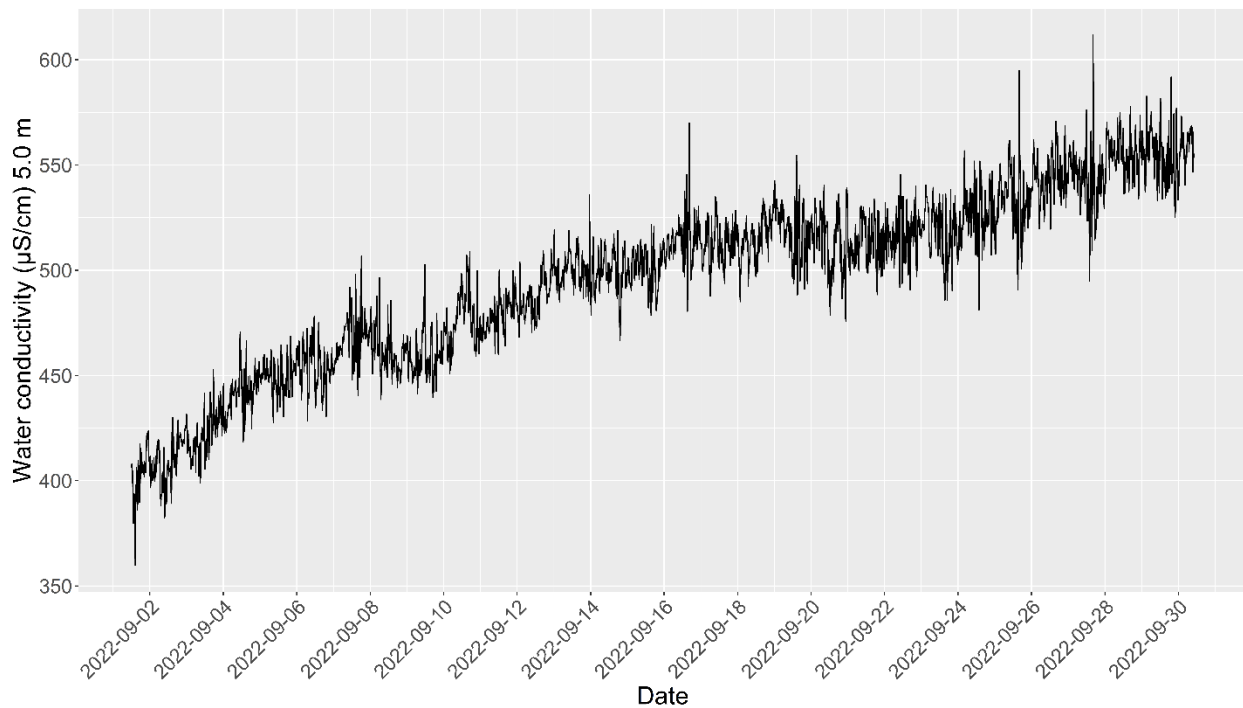


Figure 25. Conductivity at 5 m depth at site 3, Henretta Lake.

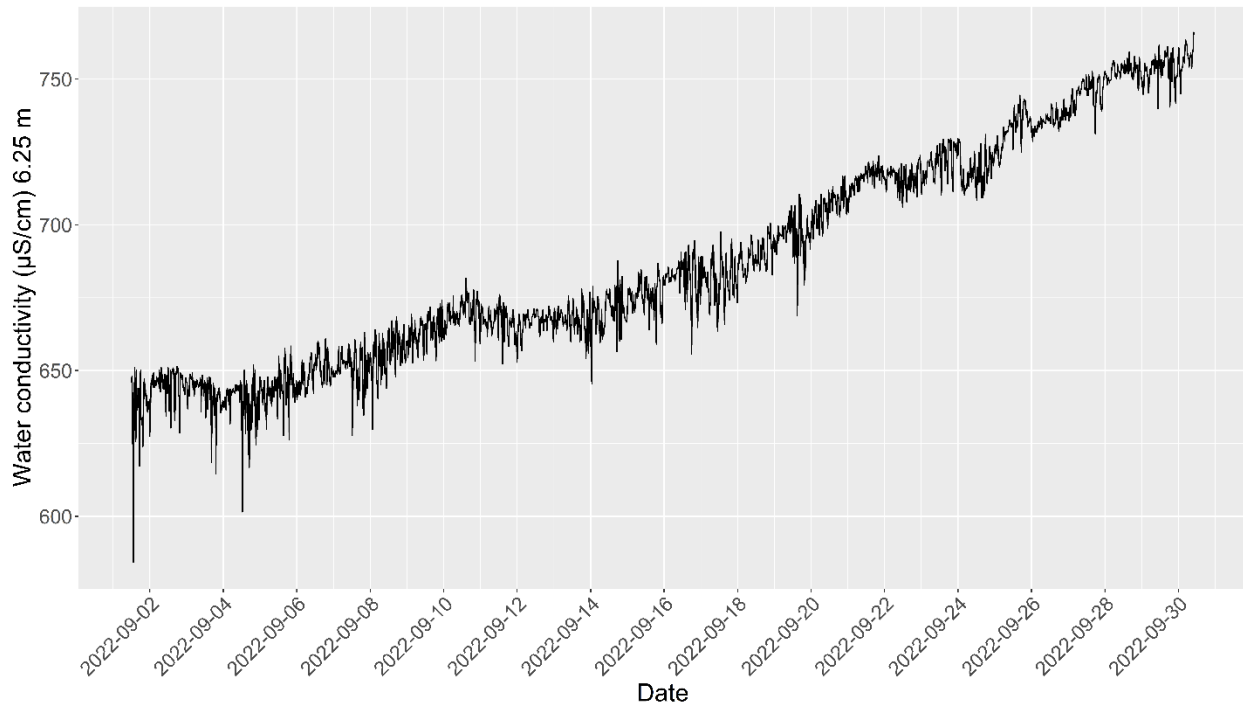


Figure 26. Conductivity at 6.25 m depth at site 3, Henretta Lake.

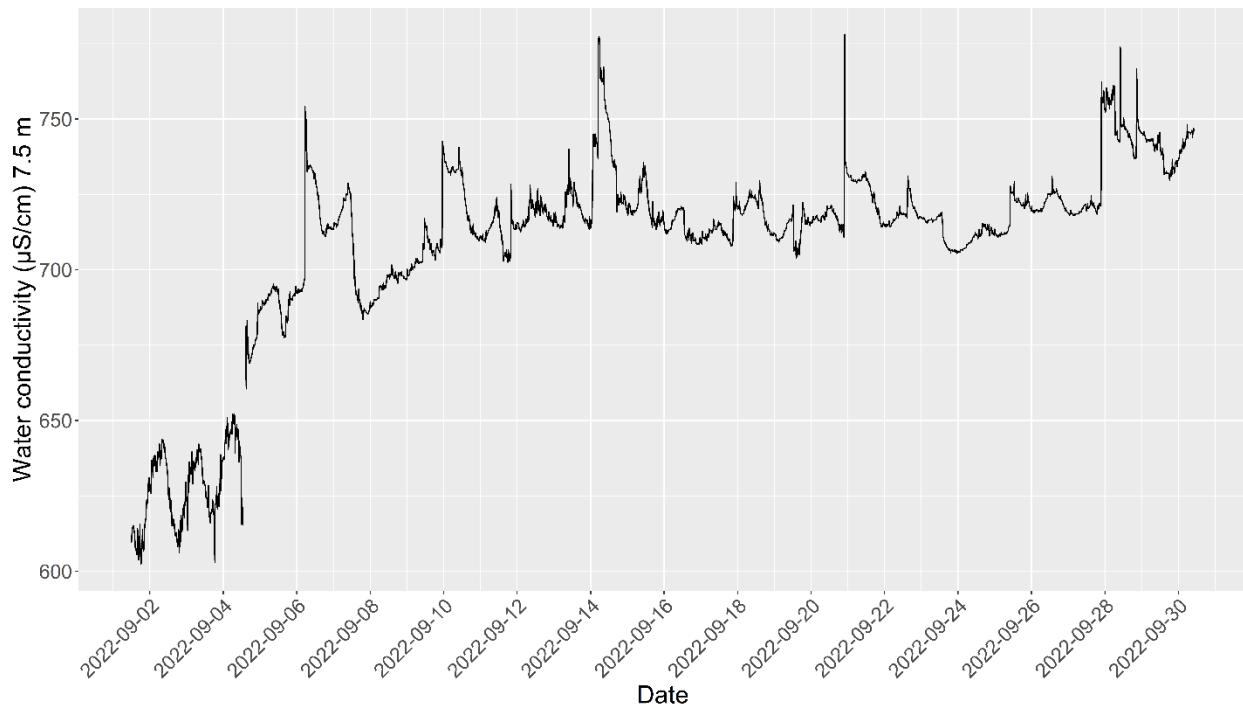


Figure 27. Conductivity at 7.5 m depth at site 3, Henretta Lake.

Table 1. Summary statistics of the temperature, DO, and conductivity data (minimum, maximum, mean, variance, and range) per depth for each day of the study.

day	depth	Min temp	Mean temp	Max temp	Var temp	range	Min DO	Mean DO	Max DO	Var DO	DO range	Min CO	Mean CO	Max CO	Var CO	CO range
244	wtr_1.25	8.4	9.0	9.3	0.1	0.9	9.3	9.5	9.6	0.0	0.3	313.2	322.1	325.8	10.2	12.6
244	wtr_2.5	8.3	8.6	9.0	0.0	0.7	9.2	9.5	9.5	0.0	0.3	322.5	328.4	335.9	9.0	13.4
244	wtr_3.75	7.9	8.2	8.5	0.0	0.7	9.3	9.6	10.0	0.0	0.8	325.6	332.1	349.0	36.8	23.4
244	wtr_5.0	7.8	8.1	8.9	0.0	1.0	8.9	9.3	9.6	0.0	0.7	359.8	403.6	423.6	153.9	63.8
244	wtr_6.25	8.8	8.9	9.5	0.0	0.7	13.5	14.7	15.5	0.1	2.0	584.2	637.5	651.0	117.6	66.8
245	wtr_1.25	7.8	8.4	9.1	0.1	1.3	9.4	9.5	9.6	0.0	0.2	315.7	323.5	330.8	26.6	15.1
245	wtr_2.5	7.7	8.1	8.6	0.1	0.9	9.4	9.5	9.6	0.0	0.3	320.2	331.4	349.8	37.6	29.6
245	wtr_3.75	7.5	8.0	8.2	0.0	0.7	9.3	9.6	10.3	0.0	1.0	320.0	339.8	367.0	110.9	47.0
245	wtr_5.0	7.6	8.0	8.2	0.0	0.6	8.3	9.1	9.8	0.1	1.5	382.2	408.9	430.0	124.8	47.8
245	wtr_6.25	8.9	9.0	9.2	0.0	0.3	14.0	15.6	16.4	0.1	2.4	627.4	645.2	651.4	22.9	24.0
246	wtr_1.25	7.8	8.4	9.2	0.2	1.5	9.5	9.5	9.6	0.0	0.2	321.8	330.2	338.7	24.6	16.9
246	wtr_2.5	7.7	8.1	8.5	0.1	0.8	9.4	9.5	9.8	0.0	0.4	327.6	336.2	359.8	40.6	32.2
246	wtr_3.75	7.6	8.0	8.2	0.0	0.6	9.3	9.5	9.7	0.0	0.4	334.5	351.4	380.0	135.5	45.5
246	wtr_5.0	7.8	8.0	8.2	0.0	0.3	8.4	9.2	9.9	0.1	1.5	398.8	422.3	452.8	115.4	54.0
246	wtr_6.25	9.0	9.1	9.2	0.0	0.2	14.7	15.2	16.0	0.1	1.3	614.6	642.3	649.2	33.5	34.6
247	wtr_1.25	7.9	8.6	9.4	0.3	1.5	9.4	9.5	9.6	0.0	0.2	327.7	337.4	345.5	38.9	17.8
247	wtr_2.5	7.7	8.3	9.2	0.2	1.6	9.4	9.5	9.6	0.0	0.2	331.5	343.9	357.1	43.3	25.6
247	wtr_3.75	7.8	8.1	8.6	0.0	0.8	9.3	9.4	9.6	0.0	0.3	340.2	366.1	394.7	157.7	54.5
247	wtr_5.0	8.0	8.1	8.3	0.0	0.3	8.6	9.5	10.4	0.1	1.9	418.3	441.6	470.6	104.0	52.3
247	wtr_6.25	8.9	9.0	9.1	0.0	0.2	14.2	15.0	15.4	0.0	1.2	601.5	639.2	651.9	57.1	50.4
248	wtr_1.25	8.0	8.7	9.3	0.2	1.3	9.4	9.5	9.6	0.0	0.2	332.3	343.3	350.8	30.5	18.5
248	wtr_2.5	7.8	8.3	8.9	0.1	1.1	9.3	9.4	9.5	0.0	0.2	336.1	348.5	367.4	56.4	31.3
248	wtr_3.75	7.8	8.1	8.4	0.0	0.6	8.9	9.4	9.5	0.0	0.6	342.5	369.7	399.3	185.6	56.8
248	wtr_5.0	8.0	8.2	8.3	0.0	0.4	8.6	9.3	10.1	0.1	1.4	427.5	448.7	468.7	65.1	41.2

248	wtr_6.25	9.0	9.1	9.2	0.0	0.2	14.4	14.9	15.7	0.1	1.3	626.3	644.1	658.4	31.0	32.1
249	wtr_1.25	7.7	8.4	9.1	0.1	1.5	9.0	9.5	9.6	0.0	0.6	336.5	347.6	359.2	24.1	22.7
249	wtr_2.5	7.4	7.9	8.4	0.1	0.9	9.2	9.5	10.1	0.0	0.8	340.5	351.9	365.7	59.0	25.2
249	wtr_3.75	7.4	7.8	8.1	0.0	0.8	9.4	9.5	10.3	0.0	1.0	336.9	370.1	393.9	259.0	57.0
249	wtr_5.0	7.9	8.2	8.4	0.0	0.4	8.6	9.4	10.3	0.1	1.7	428.6	453.9	478.2	119.0	49.6
249	wtr_6.25	9.0	9.1	9.3	0.0	0.3	14.1	14.8	15.7	0.2	1.6	640.0	649.2	660.9	25.8	20.9
250	wtr_1.25	7.6	8.2	8.7	0.1	1.1	9.5	9.6	9.8	0.0	0.3	339.6	349.7	357.2	26.7	17.6
250	wtr_2.5	7.3	7.9	8.6	0.1	1.2	9.4	9.6	10.0	0.0	0.6	342.0	355.5	370.9	60.6	28.9
250	wtr_3.75	7.5	7.8	8.0	0.0	0.5	9.3	9.5	9.6	0.0	0.3	362.2	383.9	414.0	113.3	51.8
250	wtr_5.0	8.0	8.2	8.3	0.0	0.3	9.0	9.8	11.5	0.2	2.5	440.3	467.6	506.7	123.5	66.4
250	wtr_6.25	9.0	9.1	9.2	0.0	0.2	13.7	14.6	14.9	0.0	1.3	627.7	650.9	663.2	33.4	35.5
251	wtr_1.25	7.7	8.0	8.4	0.0	0.7	9.5	9.6	9.7	0.0	0.2	347.2	356.0	361.8	16.1	14.6
251	wtr_2.5	7.5	7.8	8.2	0.0	0.6	9.4	9.5	9.6	0.0	0.2	351.6	366.4	383.0	64.8	31.4
251	wtr_3.75	7.5	7.9	8.2	0.0	0.6	9.1	9.5	9.9	0.0	0.8	371.4	393.7	418.2	125.1	46.8
251	wtr_5.0	7.7	8.0	8.3	0.0	0.6	8.7	9.4	10.7	0.1	1.9	438.6	461.4	496.5	114.2	57.9
251	wtr_6.25	9.0	9.1	9.2	0.0	0.2	14.0	14.5	15.4	0.1	1.5	629.9	656.0	668.4	50.8	38.5
252	wtr_1.25	7.4	7.8	8.3	0.1	0.9	8.8	9.6	9.8	0.0	1.0	347.6	354.4	361.6	8.3	14.0
252	wtr_2.5	7.3	7.6	7.9	0.0	0.6	9.2	9.6	10.0	0.0	0.8	351.3	362.4	390.7	67.1	39.4
252	wtr_3.75	7.4	7.7	8.0	0.0	0.6	9.2	9.4	9.7	0.0	0.4	365.7	396.1	419.5	127.9	53.8
252	wtr_5.0	7.6	7.9	8.3	0.0	0.6	8.8	9.2	10.5	0.1	1.7	439.4	458.7	502.5	121.6	63.1
252	wtr_6.25	9.0	9.1	9.2	0.0	0.2	12.5	14.3	15.0	0.2	2.5	652.7	663.5	674.2	24.9	21.5
253	wtr_1.25	6.8	7.7	8.6	0.2	1.7	9.6	9.6	9.8	0.0	0.2	340.9	354.5	364.9	33.0	24.0
253	wtr_2.5	6.7	7.2	7.7	0.1	1.0	9.6	9.7	10.0	0.0	0.4	346.1	357.0	369.3	36.5	23.2
253	wtr_3.75	7.1	7.3	7.7	0.0	0.6	9.4	9.6	9.9	0.0	0.5	367.3	391.8	422.7	154.4	55.4
253	wtr_5.0	7.6	7.9	8.3	0.0	0.7	8.6	9.6	10.5	0.2	1.9	450.8	477.0	508.7	165.5	57.9
253	wtr_6.25	9.0	9.1	9.2	0.0	0.3	13.8	14.6	15.3	0.1	1.5	653.4	669.6	681.6	22.0	28.2
254	wtr_1.25	6.9	7.6	8.2	0.2	1.3	9.2	9.7	9.8	0.0	0.7	345.2	355.9	365.6	26.9	20.4
254	wtr_2.5	6.8	7.3	7.9	0.1	1.1	9.6	9.7	9.8	0.0	0.2	350.3	360.9	372.9	39.7	22.6
254	wtr_3.75	7.1	7.4	7.5	0.0	0.4	9.3	9.6	9.9	0.0	0.6	378.5	402.6	424.7	117.0	46.2
254	wtr_5.0	7.5	7.8	8.0	0.0	0.4	9.0	9.8	10.6	0.1	1.5	459.9	478.6	500.1	81.6	40.2
254	wtr_6.25	8.9	9.0	9.1	0.0	0.3	13.9	14.4	14.8	0.1	1.0	652.2	666.8	676.1	20.6	23.9

255	wtr_1.25	7.0	7.3	7.8	0.0	0.8	7.7	9.4	9.9	0.2	2.2	348.2	356.1	361.4	7.0	13.2
255	wtr_2.5	6.9	7.1	7.3	0.0	0.4	9.2	9.6	9.7	0.0	0.5	357.2	365.5	382.5	33.3	25.3
255	wtr_3.75	7.1	7.3	7.5	0.0	0.4	9.2	9.5	9.7	0.0	0.5	386.7	407.0	432.1	114.4	45.4
255	wtr_5.0	7.6	7.7	7.9	0.0	0.3	8.9	9.7	10.8	0.2	1.9	468.2	487.8	510.0	90.2	41.8
255	wtr_6.25	8.8	8.9	9.0	0.0	0.2	13.1	13.9	14.3	0.0	1.3	652.8	666.9	672.2	12.0	19.4
256	wtr_1.25	7.2	7.5	8.0	0.1	0.9	8.2	9.4	9.8	0.1	1.6	357.2	362.5	367.7	8.8	10.5
256	wtr_2.5	7.0	7.3	7.5	0.0	0.5	9.2	9.5	9.8	0.0	0.6	365.3	374.3	386.3	30.0	21.0
256	wtr_3.75	7.3	7.4	7.5	0.0	0.2	8.0	9.3	10.0	0.1	2.1	405.4	424.3	442.9	55.6	37.5
256	wtr_5.0	7.5	7.7	7.9	0.0	0.4	8.2	10.0	11.4	0.2	3.2	485.0	500.6	535.9	73.7	50.9
256	wtr_6.25	8.6	8.7	8.8	0.0	0.2	8.0	12.4	13.9	3.0	6.0	654.2	667.2	678.0	18.6	23.8
257	wtr_1.25	7.1	7.4	7.8	0.0	0.7	9.4	9.6	9.7	0.0	0.3	338.1	364.0	369.9	12.9	31.8
257	wtr_2.5	6.9	7.2	7.5	0.0	0.6	9.5	9.5	9.7	0.0	0.2	364.1	372.4	384.1	24.2	20.0
257	wtr_3.75	7.1	7.4	7.5	0.0	0.4	9.1	9.4	9.6	0.0	0.6	405.0	420.9	439.8	79.5	34.8
257	wtr_5.0	7.4	7.6	7.9	0.0	0.5	8.9	9.9	11.1	0.1	2.2	466.5	499.0	518.8	101.3	52.3
257	wtr_6.25	8.5	8.7	8.8	0.0	0.2	13.0	13.4	13.9	0.0	0.9	645.5	669.8	687.7	49.7	42.2
258	wtr_1.25	7.0	7.5	8.2	0.2	1.2	9.4	9.5	9.7	0.0	0.3	358.1	366.5	375.5	29.4	17.4
258	wtr_2.5	6.9	7.2	7.8	0.0	1.0	9.4	9.5	9.6	0.0	0.2	364.1	375.3	397.1	62.0	33.0
258	wtr_3.75	7.3	7.4	7.5	0.0	0.2	6.2	9.0	9.7	0.4	3.5	395.0	429.7	442.9	76.2	47.9
258	wtr_5.0	7.4	7.6	7.8	0.0	0.3	9.0	9.8	10.7	0.1	1.7	478.6	500.8	521.5	87.8	42.9
258	wtr_6.25	8.5	8.6	8.7	0.0	0.1	11.6	13.0	13.5	0.1	1.9	659.1	675.6	686.8	26.4	27.7
259	wtr_1.25	6.9	7.4	7.7	0.1	0.8	9.5	9.6	9.7	0.0	0.3	358.9	365.6	372.0	12.1	13.1
259	wtr_2.5	6.7	7.1	7.6	0.1	0.9	9.4	9.5	9.7	0.0	0.3	362.3	372.9	389.1	43.0	26.8
259	wtr_3.75	7.1	7.3	7.5	0.0	0.4	9.1	9.4	9.9	0.0	0.9	397.8	421.7	449.1	92.9	51.3
259	wtr_5.0	7.6	7.7	8.0	0.0	0.4	9.3	10.2	11.5	0.2	2.2	480.5	514.4	569.8	128.8	89.3
259	wtr_6.25	8.5	8.6	8.7	0.0	0.2	12.8	13.1	13.6	0.0	0.7	655.6	682.3	694.7	40.0	39.1
260	wtr_1.25	7.0	7.3	7.7	0.0	0.7	9.5	9.6	9.7	0.0	0.3	360.7	367.8	373.4	11.9	12.7
260	wtr_2.5	6.8	7.1	7.5	0.0	0.8	9.4	9.5	9.6	0.0	0.2	365.3	378.9	396.4	50.4	31.1
260	wtr_3.75	7.2	7.3	7.4	0.0	0.2	9.0	9.3	9.6	0.0	0.6	417.1	436.9	453.0	60.0	35.9
260	wtr_5.0	7.5	7.7	7.8	0.0	0.4	9.0	10.0	10.8	0.1	1.7	487.7	512.5	534.9	93.5	47.2
260	wtr_6.25	8.4	8.5	8.6	0.0	0.2	12.3	12.7	13.1	0.0	0.7	663.6	681.4	697.5	48.7	33.9
261	wtr_1.25	6.5	7.0	7.6	0.1	1.1	9.5	9.6	9.7	0.0	0.2	362.1	369.4	380.0	17.8	17.9

261	wtr_2.5	6.2	6.7	7.0	0.0	0.7	9.5	9.6	9.7	0.0	0.2	365.4	375.0	399.2	50.1	33.8
261	wtr_3.75	6.9	7.1	7.4	0.0	0.5	8.3	9.2	9.5	0.0	1.2	409.9	429.8	459.1	75.1	49.2
261	wtr_5.0	7.3	7.6	7.8	0.0	0.5	8.4	9.8	10.7	0.3	2.3	485.1	515.0	537.9	107.3	52.8
261	wtr_6.25	8.4	8.5	8.6	0.0	0.2	12.4	12.7	13.2	0.0	0.8	679.9	689.3	700.5	24.2	20.6
262	wtr_1.25	6.5	6.9	7.3	0.1	0.8	9.5	9.6	9.7	0.0	0.2	363.5	370.7	377.4	21.1	13.9
262	wtr_2.5	6.4	6.7	7.1	0.1	0.7	7.6	9.6	10.2	0.1	2.6	367.4	380.6	400.3	48.9	32.9
262	wtr_3.75	6.9	7.1	7.1	0.0	0.2	9.1	9.3	9.6	0.0	0.5	404.9	433.4	453.1	97.8	48.2
262	wtr_5.0	7.2	7.5	7.8	0.0	0.6	9.3	10.0	10.8	0.1	1.5	488.2	518.2	554.7	173.7	66.5
262	wtr_6.25	8.4	8.5	8.6	0.0	0.2	12.1	13.0	13.6	0.1	1.5	668.8	696.1	710.6	38.8	41.8
263	wtr_1.25	6.5	6.9	7.4	0.1	0.8	9.6	9.7	9.8	0.0	0.2	371.2	375.2	380.8	3.8	9.6
263	wtr_2.5	6.2	6.6	7.0	0.0	0.8	9.4	9.6	9.7	0.0	0.3	371.7	383.8	407.3	87.2	35.6
263	wtr_3.75	6.6	6.9	7.1	0.0	0.4	9.0	9.4	9.6	0.0	0.6	397.6	424.6	447.7	137.6	50.1
263	wtr_5.0	7.0	7.4	7.7	0.0	0.6	8.6	9.9	10.6	0.2	2.0	475.8	513.3	540.3	240.4	64.5
263	wtr_6.25	8.5	8.6	8.7	0.0	0.2	12.8	13.3	13.7	0.0	0.9	695.2	706.2	716.7	23.3	21.5
264	wtr_1.25	6.1	6.6	7.2	0.1	1.1	9.7	9.7	9.8	0.0	0.1	364.9	373.4	380.9	23.7	16.0
264	wtr_2.5	6.0	6.4	6.7	0.0	0.7	9.6	9.7	9.8	0.0	0.2	370.7	378.0	388.2	15.1	17.5
264	wtr_3.75	6.3	6.6	6.9	0.0	0.6	9.1	9.5	9.8	0.0	0.7	392.7	415.7	437.0	179.7	44.3
264	wtr_5.0	7.0	7.3	7.6	0.0	0.6	9.0	9.7	10.3	0.1	1.3	488.4	512.9	533.8	114.2	45.4
264	wtr_6.25	8.6	8.7	8.8	0.0	0.2	12.9	13.4	13.6	0.0	0.7	704.3	716.0	723.7	13.8	19.4
265	wtr_1.25	6.3	6.6	6.9	0.0	0.6	9.5	9.7	9.8	0.0	0.3	370.1	373.9	378.7	6.4	8.6
265	wtr_2.5	6.2	6.5	6.8	0.0	0.6	9.6	9.7	9.8	0.0	0.2	375.2	381.8	394.0	15.5	18.8
265	wtr_3.75	6.6	6.7	6.8	0.0	0.2	7.3	9.4	9.7	0.1	2.4	405.8	423.1	444.4	44.7	38.6
265	wtr_5.0	7.0	7.2	7.4	0.0	0.4	9.2	10.0	10.7	0.1	1.5	490.7	516.6	545.4	115.3	54.7
265	wtr_6.25	8.5	8.6	8.7	0.0	0.2	13.2	13.4	13.7	0.0	0.5	706.1	716.0	723.8	14.3	17.7
266	wtr_1.25	6.2	6.6	7.0	0.1	0.8	9.7	9.8	10.0	0.0	0.3	369.0	374.6	380.9	11.3	11.9
266	wtr_2.5	6.1	6.5	6.9	0.1	0.8	9.6	9.7	9.8	0.0	0.2	374.5	381.5	396.6	23.8	22.1
266	wtr_3.75	6.5	6.6	6.8	0.0	0.3	8.8	9.4	9.7	0.0	0.8	411.6	428.6	445.9	63.5	34.3
266	wtr_5.0	6.9	7.2	7.5	0.0	0.6	9.1	10.2	12.1	0.2	3.1	485.8	518.9	540.4	161.4	54.6
266	wtr_6.25	8.5	8.5	8.7	0.0	0.2	12.8	13.5	14.1	0.1	1.3	710.2	721.7	729.5	27.7	19.3
267	wtr_1.25	6.4	6.9	7.4	0.1	0.9	9.7	9.7	9.8	0.0	0.1	371.2	377.8	385.0	22.8	13.8
267	wtr_2.5	6.4	6.7	7.4	0.1	1.0	9.6	9.7	9.8	0.0	0.2	376.6	384.0	394.1	29.6	17.5

267	wtr_3.75	6.6	6.8	7.0	0.0	0.4	8.6	9.2	9.6	0.1	1.0	415.7	432.9	449.7	64.4	34.0
267	wtr_5.0	6.9	7.3	7.5	0.0	0.6	8.6	10.3	12.2	0.3	3.6	481.2	526.0	556.8	159.5	75.6
267	wtr_6.25	8.3	8.4	8.6	0.0	0.2	12.4	12.7	13.8	0.1	1.3	708.4	718.4	731.0	29.2	22.6
268	wtr_1.25	6.3	6.9	7.5	0.2	1.3	9.6	9.7	9.8	0.0	0.2	373.2	381.6	390.2	29.5	17.0
268	wtr_2.5	6.1	6.6	7.1	0.1	1.0	9.6	9.7	9.8	0.0	0.2	377.2	387.0	398.5	31.3	21.3
268	wtr_3.75	6.5	6.7	6.9	0.0	0.4	9.1	9.4	9.7	0.0	0.6	402.7	428.4	448.6	111.2	45.9
268	wtr_5.0	7.0	7.4	7.8	0.0	0.7	9.1	10.4	12.1	0.2	3.1	490.6	533.6	594.8	272.8	104.2
268	wtr_6.25	8.4	8.5	8.7	0.0	0.3	12.3	13.0	13.8	0.2	1.4	719.9	733.1	744.5	34.0	24.6
269	wtr_1.25	6.5	7.0	7.7	0.2	1.2	9.6	9.7	9.8	0.0	0.2	378.4	385.8	396.3	30.9	17.9
269	wtr_2.5	6.3	6.7	7.1	0.1	0.8	9.6	9.7	9.7	0.0	0.2	383.6	390.1	398.9	22.0	15.3
269	wtr_3.75	6.7	6.8	7.1	0.0	0.4	9.2	9.5	9.7	0.0	0.5	404.6	429.4	441.1	62.7	36.5
269	wtr_5.0	7.2	7.5	7.8	0.0	0.6	9.9	10.6	11.6	0.1	1.7	519.5	544.0	570.8	114.8	51.3
269	wtr_6.25	8.4	8.5	8.6	0.0	0.2	12.5	12.9	13.4	0.1	0.9	728.7	735.8	743.2	7.7	14.5
270	wtr_1.25	6.5	7.2	7.8	0.2	1.3	9.6	9.7	9.8	0.0	0.2	378.4	389.2	398.1	29.3	19.7
270	wtr_2.5	6.4	6.8	7.4	0.1	1.0	9.6	9.6	9.8	0.0	0.2	385.6	393.8	405.0	26.2	19.4
270	wtr_3.75	6.8	7.0	7.2	0.0	0.4	9.2	9.5	9.7	0.0	0.5	410.7	434.0	451.2	95.5	40.5
270	wtr_5.0	7.3	7.5	7.9	0.0	0.6	9.5	10.7	13.6	0.3	4.2	494.8	544.8	611.6	238.2	116.8
270	wtr_6.25	8.5	8.6	8.7	0.0	0.3	12.5	13.5	14.7	0.3	2.2	731.1	744.9	752.8	22.3	21.7
271	wtr_1.25	6.5	7.2	7.8	0.1	1.3	9.5	9.6	9.7	0.0	0.2	383.4	391.6	399.7	20.9	16.3
271	wtr_2.5	6.4	6.8	7.2	0.0	0.7	6.8	9.4	10.0	0.4	3.2	387.9	398.0	413.4	38.4	25.5
271	wtr_3.75	6.8	7.0	7.2	0.0	0.4	9.2	9.5	9.7	0.0	0.5	419.5	436.0	451.1	62.9	31.6
271	wtr_5.0	7.5	7.7	7.8	0.0	0.3	10.4	10.9	11.4	0.1	1.1	533.9	555.3	577.7	87.4	43.8
271	wtr_6.25	8.6	8.7	8.7	0.0	0.2	13.7	14.0	14.4	0.0	0.8	746.1	752.9	759.4	6.8	13.3
272	wtr_1.25	6.9	7.2	7.4	0.0	0.5	9.5	9.6	9.7	0.0	0.2	388.1	391.9	395.6	1.9	7.5
272	wtr_2.5	6.8	7.0	7.1	0.0	0.3	9.5	9.6	9.8	0.0	0.3	393.8	401.6	407.3	11.0	13.5
272	wtr_3.75	6.9	7.1	7.2	0.0	0.3	8.0	9.3	9.6	0.1	1.6	421.4	447.8	467.8	71.5	46.4
272	wtr_5.0	7.3	7.6	7.9	0.0	0.5	7.9	10.6	11.8	0.6	4.0	525.2	554.6	591.7	175.7	66.5
272	wtr_6.25	8.5	8.6	8.7	0.0	0.2	13.1	13.6	14.3	0.0	1.1	739.9	753.2	761.7	22.6	21.8
273	wtr_1.25	6.9	7.0	7.1	0.0	0.2	9.5	9.6	9.6	0.0	0.1	384.7	391.9	397.6	12.7	12.9
273	wtr_2.5	6.7	6.9	7.0	0.0	0.3	9.4	9.5	9.6	0.0	0.2	393.1	400.6	411.9	37.1	18.8
273	wtr_3.75	7.1	7.2	7.2	0.0	0.1	9.0	9.2	9.6	0.0	0.6	448.4	458.0	467.0	22.7	18.6

273	wtr_5.0	7.4	7.6	7.7	0.0	0.3	8.8	10.3	11.3	0.4	2.6	540.0	558.3	573.1	74.6	33.1
273	wtr_6.25	8.5	8.6	8.6	0.0	0.2	13.0	13.2	13.9	0.0	0.9	744.9	757.3	766.1	20.3	21.2

Henretta Lake Profile Data



Summary

November 7, 2022

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1 Summary

Henretta Lake appears to be relatively stable for the first two weeks of October followed by two weeks of cooling, particularly at the surface, with water temperatures throughout the water column ranging between 3.3 – 8.9 °C, Dissolved Oxygen (DO) ranging between 5.8 – 14.3 mg/L, and conductivity between 580 – 1157 µS/cm. There was little evidence of thermal stratification during the first half of October, however the last two weeks showed evidence of gradual stratification as the surface cooled. The lower two loggers were the warmest in the water column. DO remained above the limit for Westslope Cutthroat Trout (*Oncorhynchus clarkii lewisi*; 5 mg/L), and the loggers recorded less diel variability than previous months- likely as a result of the new copper cages reducing algal growth and minimizing the immediate effects of photosynthesizing algae near the sensors. There were some instances of rapid drops in DO, for example at 5.0 m on the 18 October, however none fall below the critical level for WCT, and DO levels increase back to ‘normal’ relatively quickly. As previously documented, the deepest section of Henretta was typically warmer than the surface and had higher levels of oxygen and conductivity.

2 Appendices



Figure 1. Water temperature obtained from six loggers at various depths in Henretta Lake (site 3) between September 30 and October 28, 2022. Dates along the x-axis in yyyy-mm-dd format.

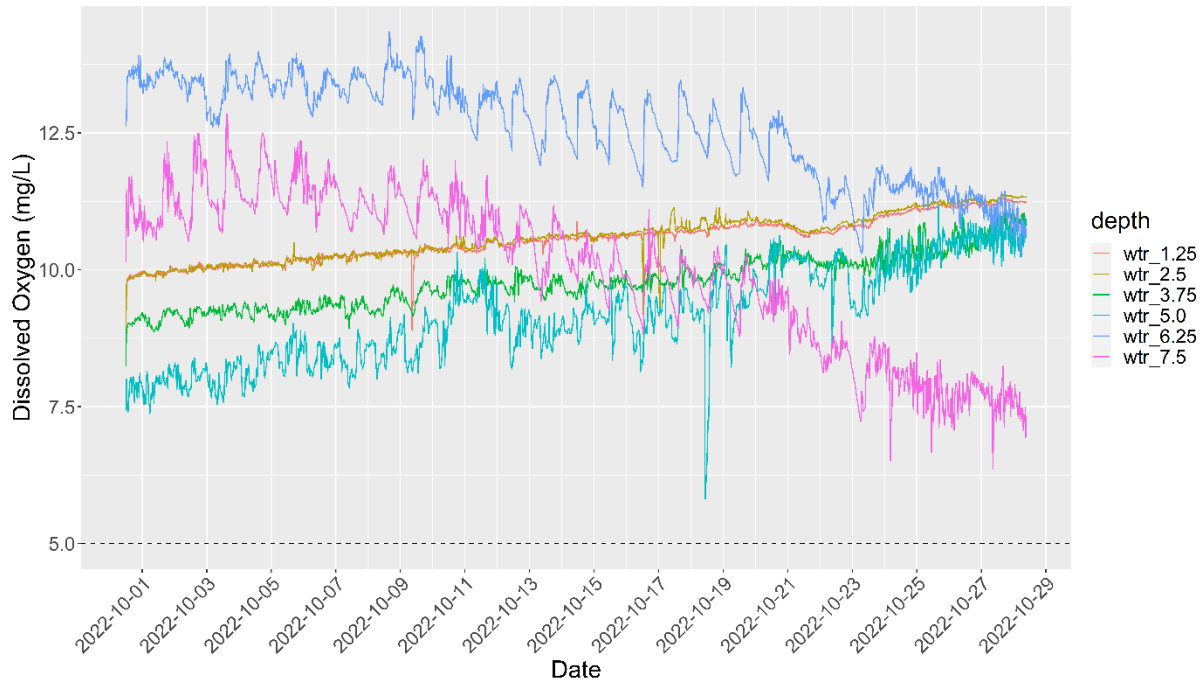


Figure 2. Dissolved Oxygen data obtained from six loggers at various depths in Henretta Lake (site 3) between September 30 and October 28, 2022. Dates along the x-axis in yyyy-mm-dd format. The deepest logger at 7.5 m was buried in the sediment.

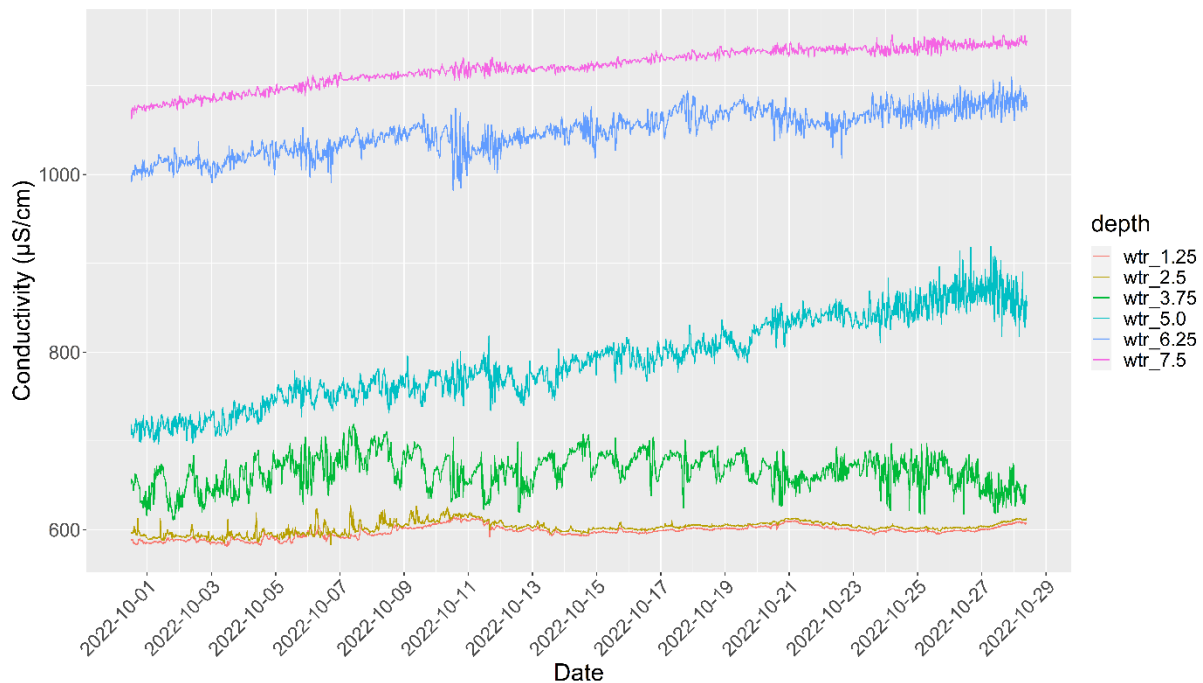


Figure 3. Conductivity ($\mu\text{S}/\text{cm}$) data obtained from six loggers at various depths in Henretta Lake (site 3) between September 30 and October 28, 2022. Dates along the x-axis in yyyy-mm-dd format. The deepest two loggers detecting higher conductivity than other water depths, as observed throughout all monitoring conducted in 2022.

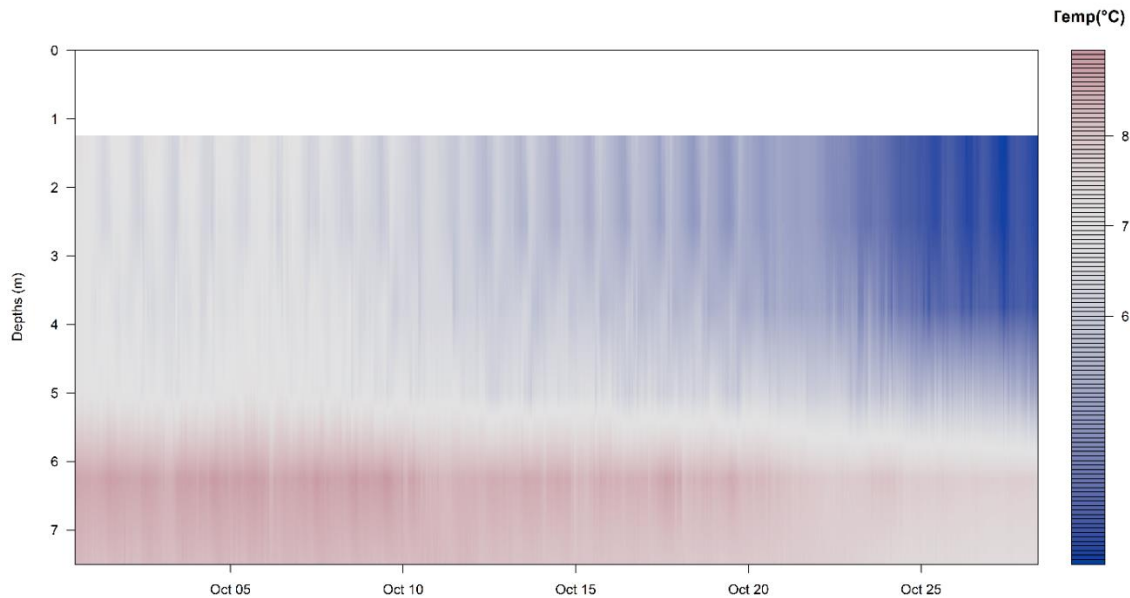


Figure 4. A heat map of water temperature throughout the water column at site 3. As seen previously, the lower part of the water column appears to be warmer. Diel variation in water temperature is likely a result of solar radiation or wind-driven water movement.

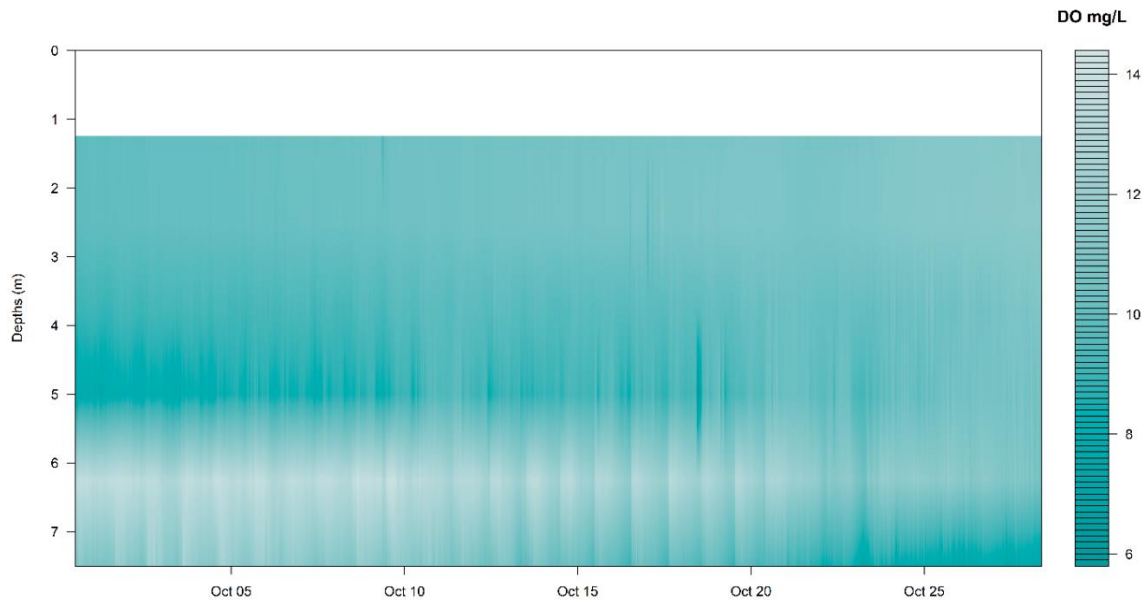


Figure 5. A heat map of water Dissolved Oxygen throughout the water column at site 3. The lower part of the water column appears to have increased DO values when compared to the surface (particularly at 6.25 m below surface). Diel variation in water DO is likely a result of algae photosynthesis and respiration in the water column.

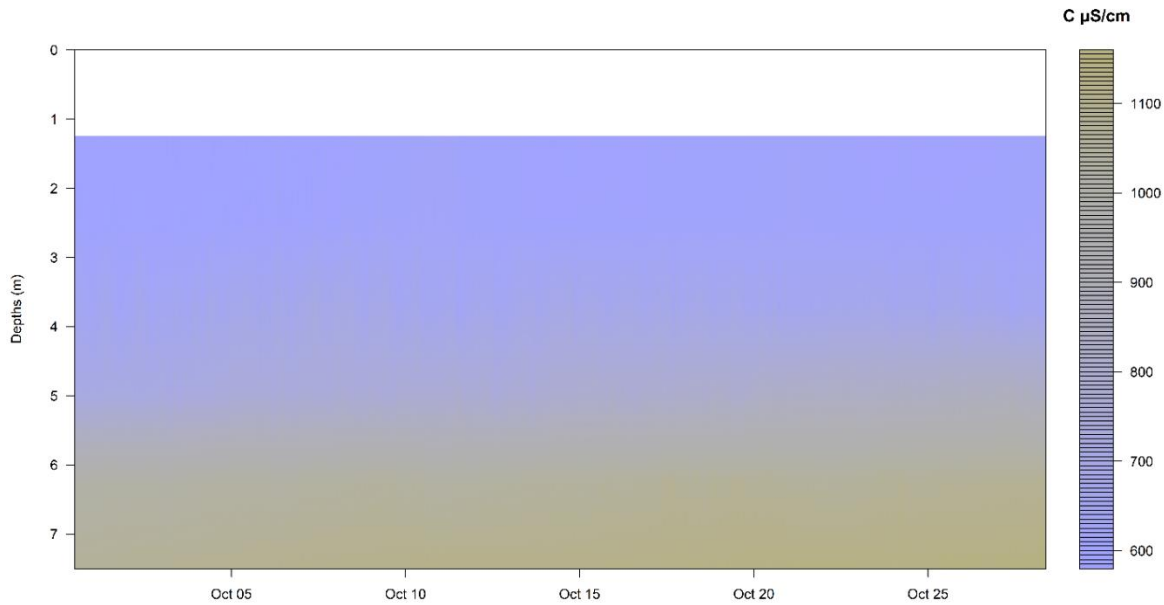


Figure 6. A heat map of water conductivity ($\mu\text{S}/\text{cm}$) throughout the water column at site 3. As per all sampling in 2022, the bottom 2 m have a higher conductivity than the rest of the water column.

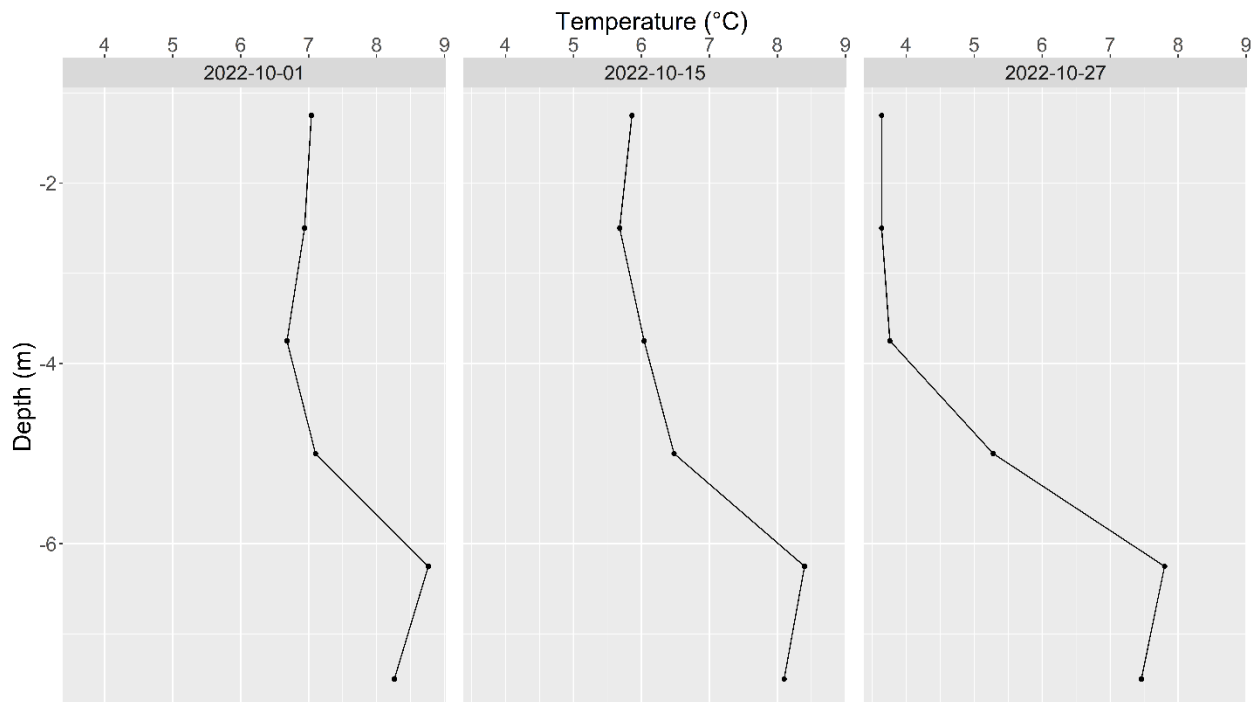


Figure 7. Water temperature ($^{\circ}\text{C}$) profiles for 01, 15, and 27 October 2022 at site 3.

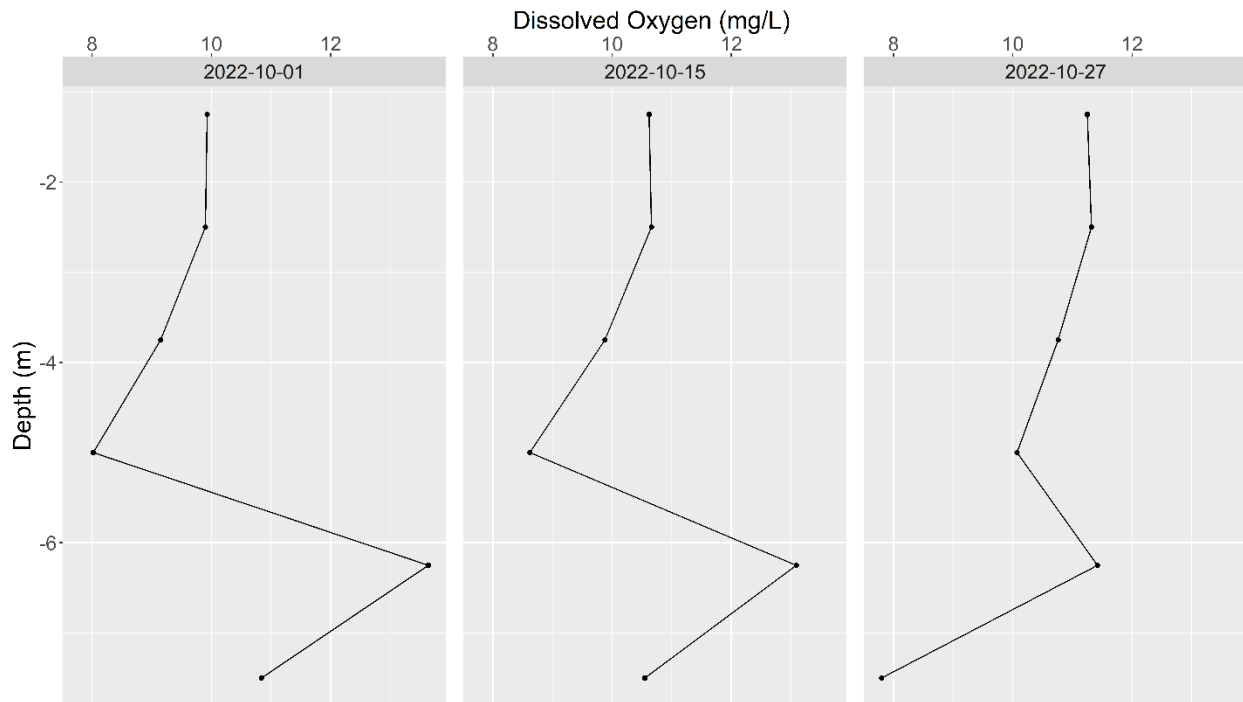


Figure 8. Dissolved Oxygen (mg/L) profiles for 01, 15, and 27 October 2022 at site 3.

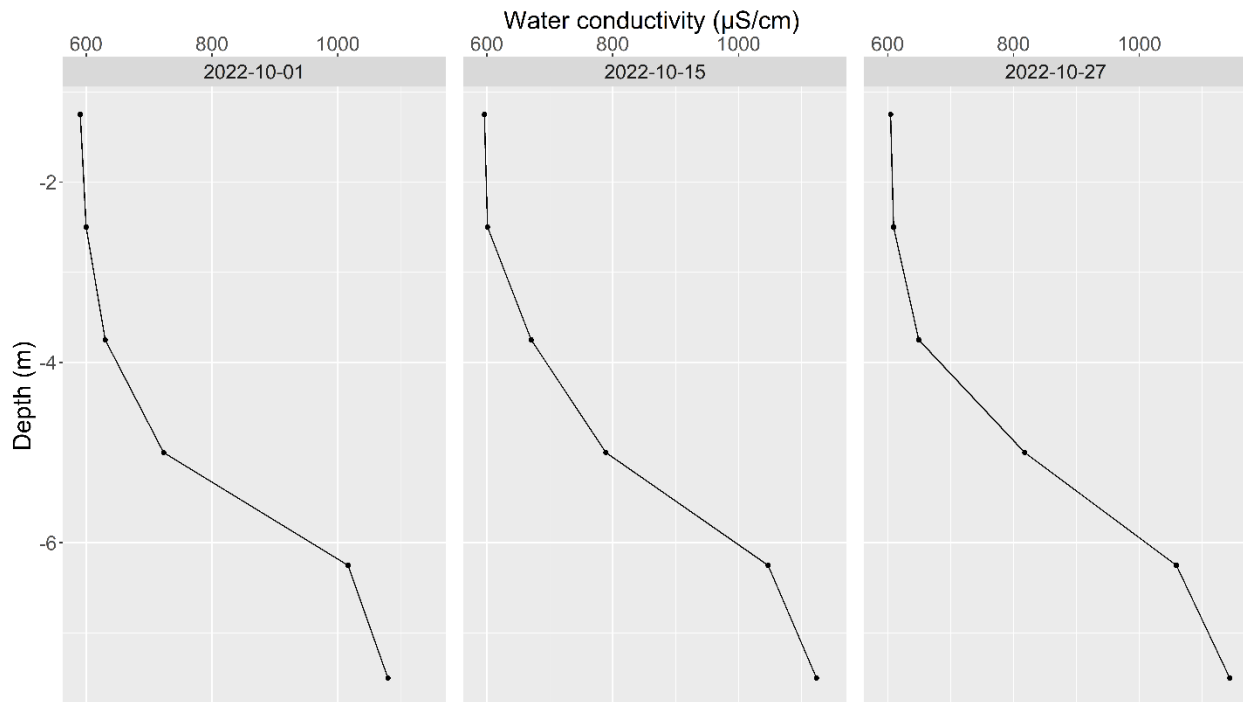


Figure 9. Water conductivity (µS/cm) profile for 01, 15, and 27 October 2022 at site 3.

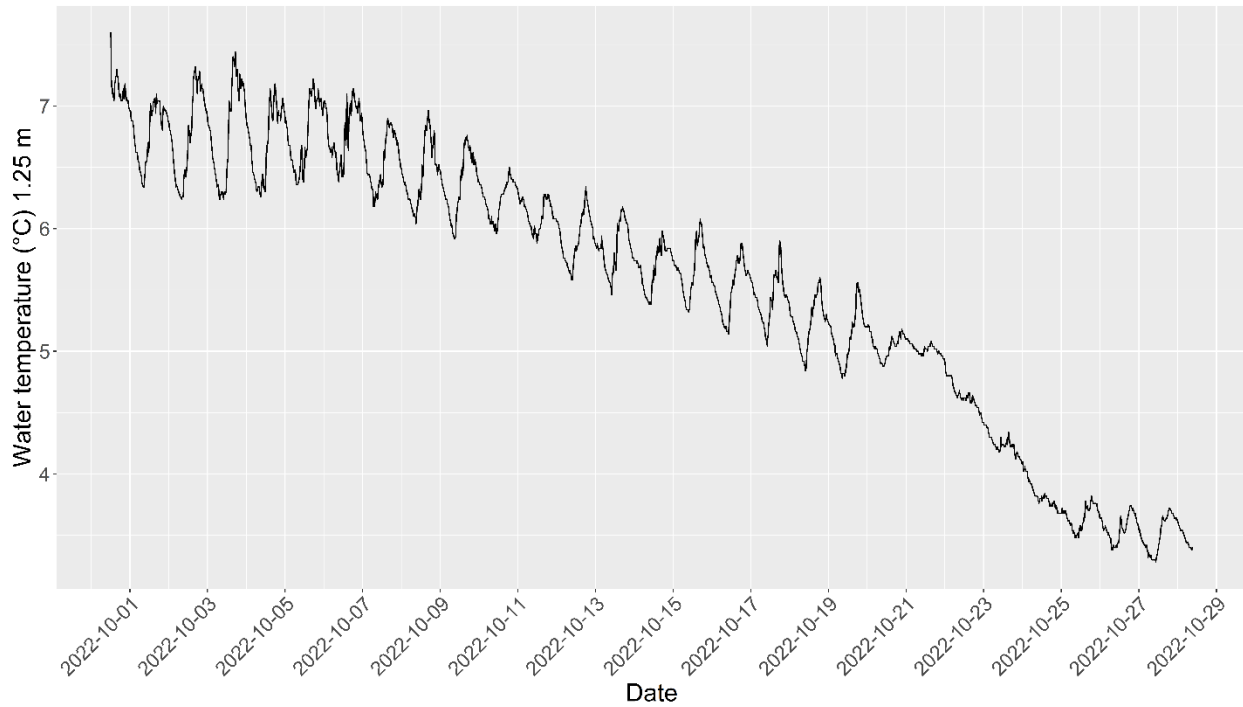


Figure 10. Water temperature at 1.25 m depth at site 3, Henretta Lake.

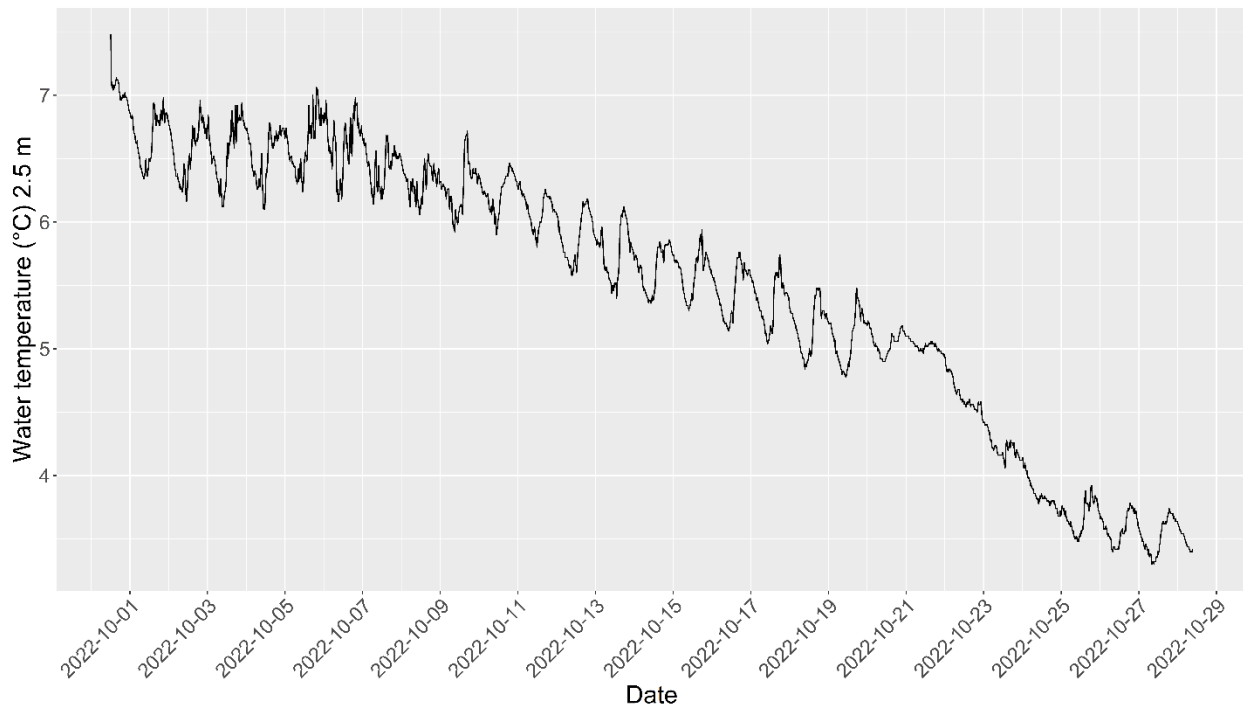


Figure 11. Water temperature at 2.5 m depth at site 3, Henretta Lake.

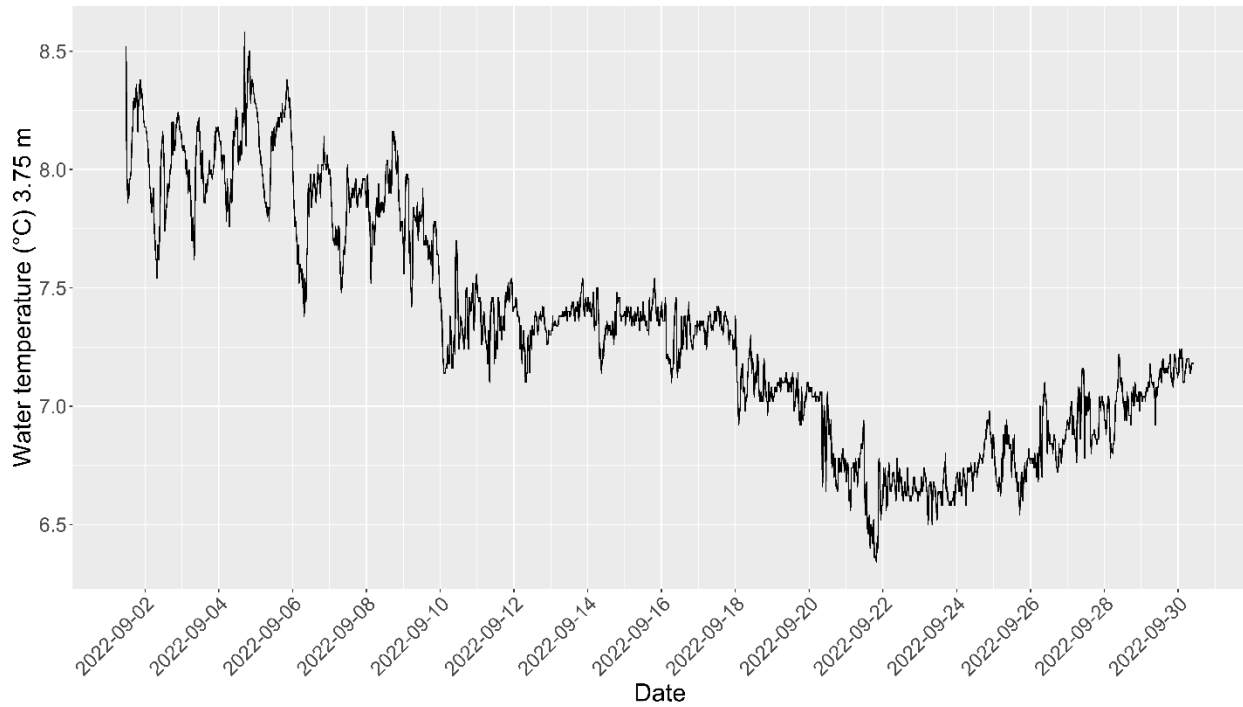


Figure 12. Water temperature at 3.75 m depth at site 3, Henretta Lake.

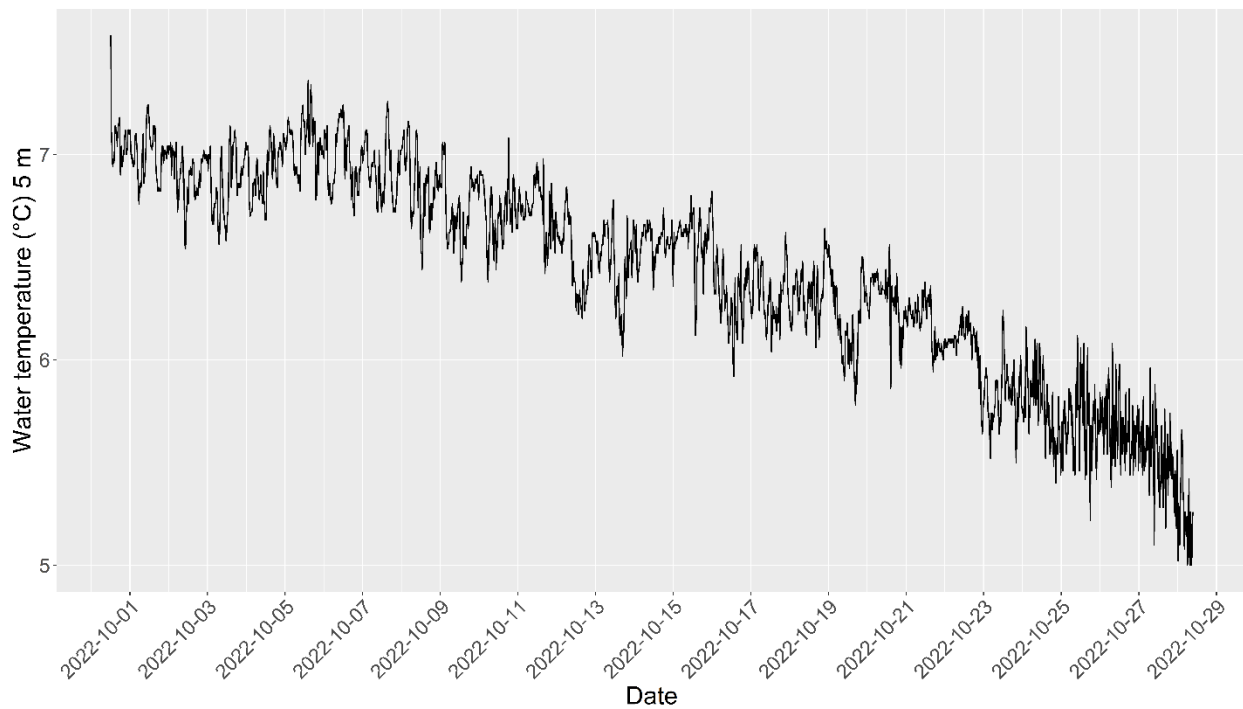


Figure 13. Water temperature at 5 m depth at site 3, Henretta Lake.

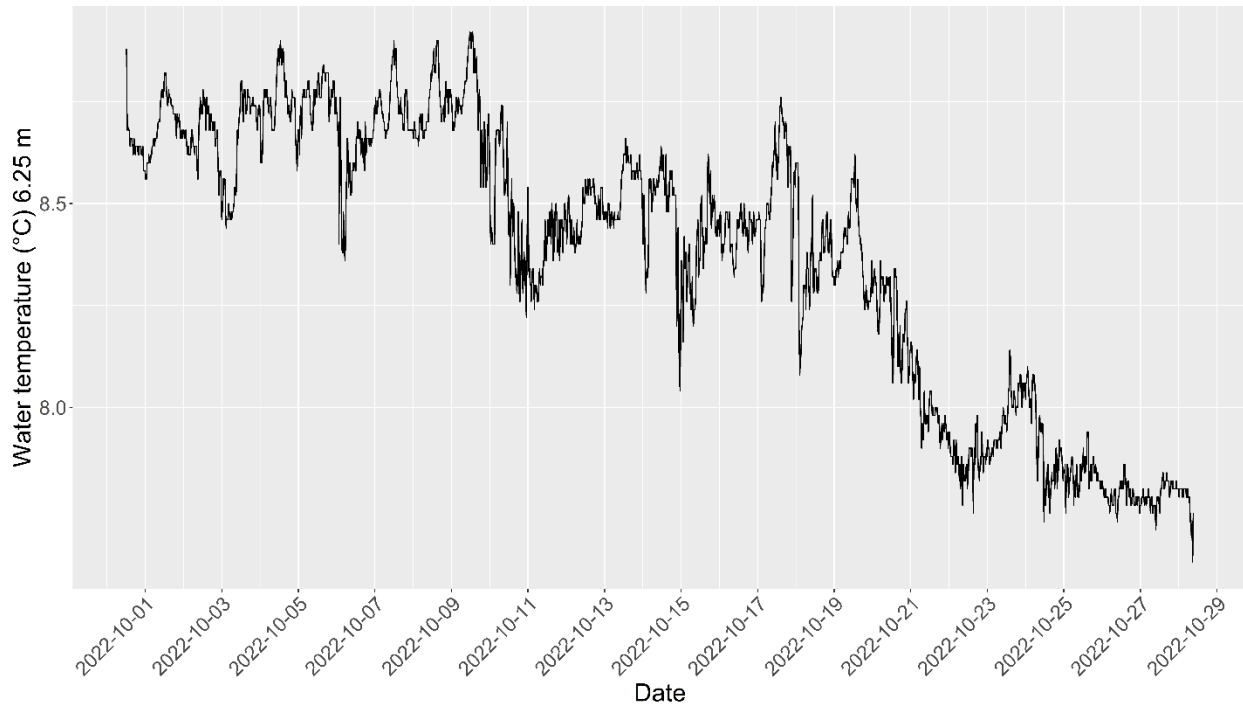


Figure 14. Water temperature at 6.25 m depth at site 3, Henretta Lake.

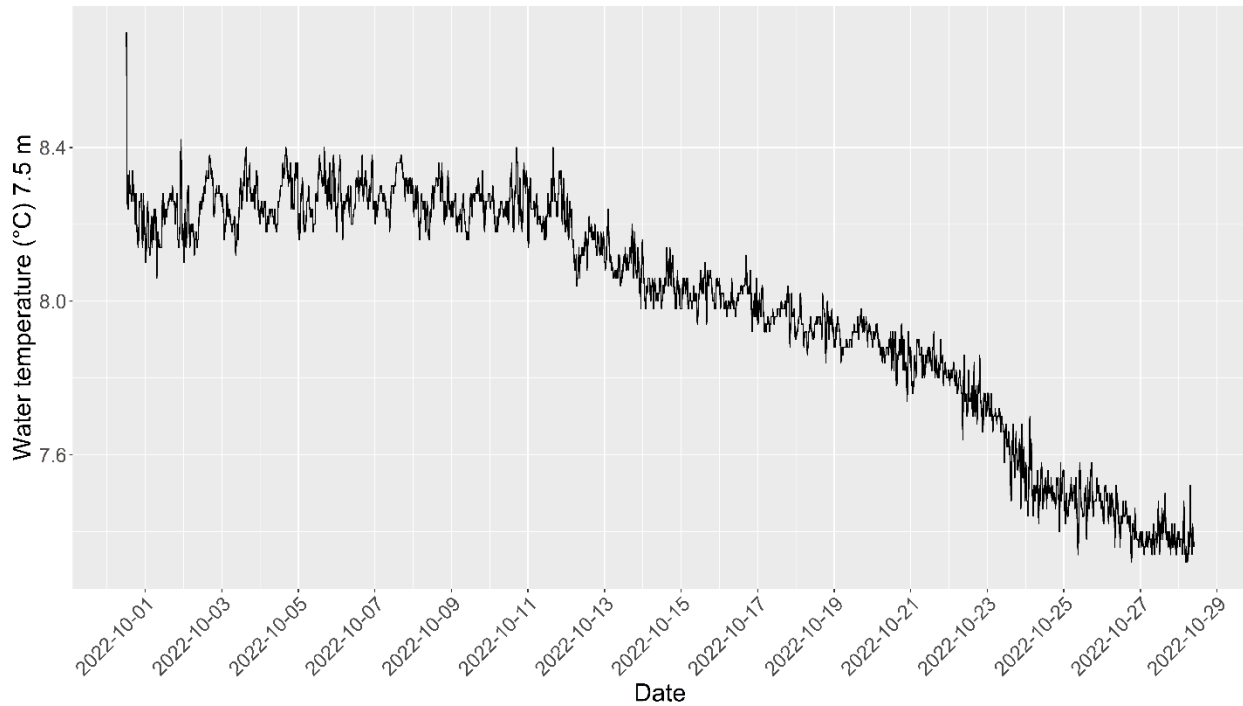


Figure 15. Water temperature at 7.5 m depth at site 3, Henretta Lake.

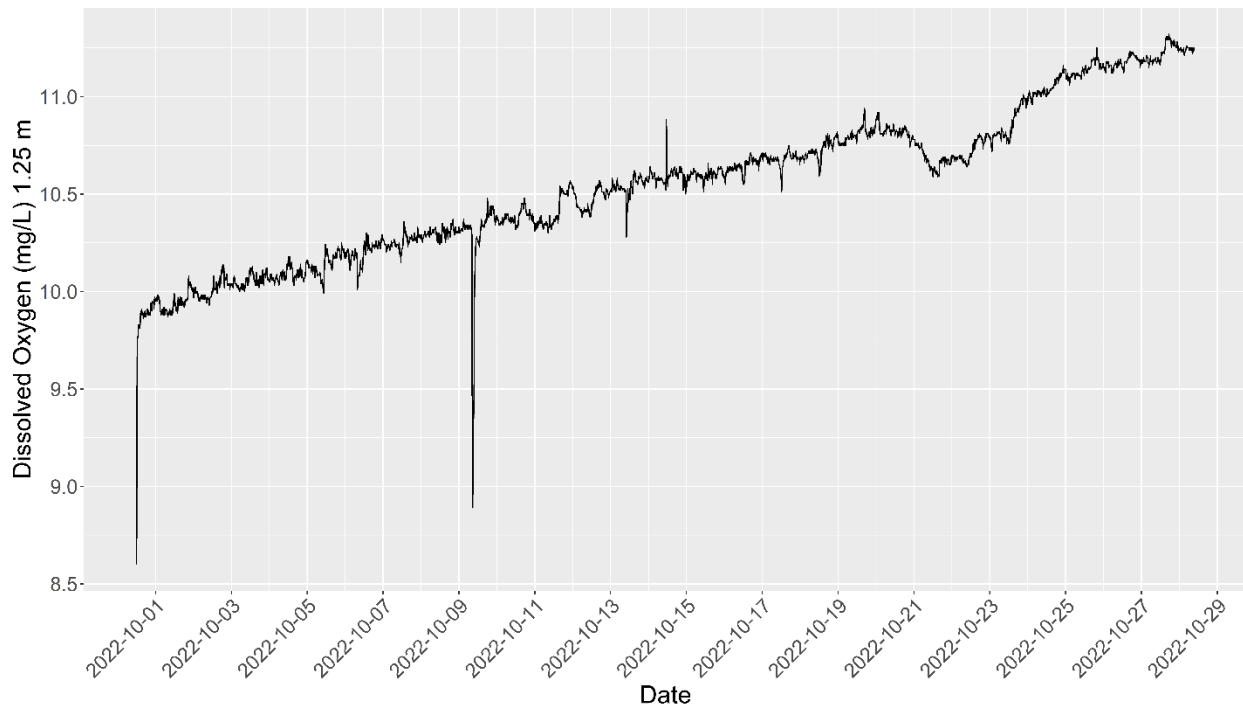


Figure 16. Dissolved Oxygen at 1.25 m depth at site 3, Henretta Lake.

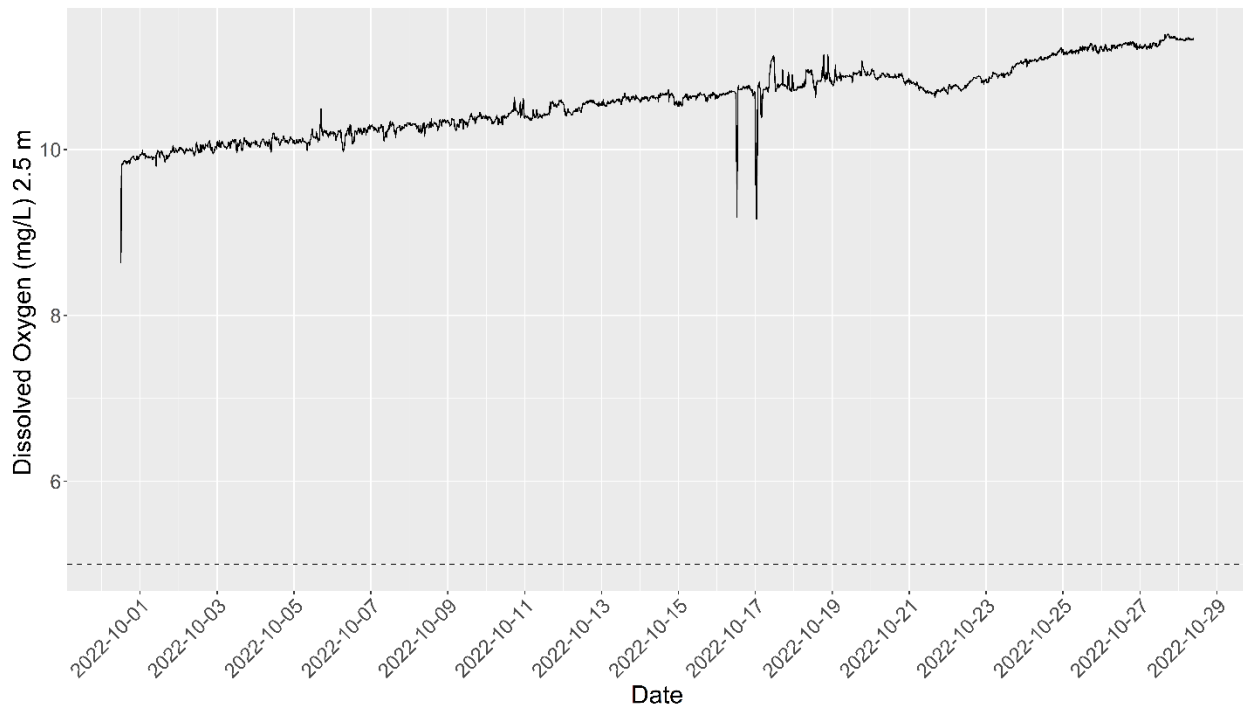


Figure 17. Dissolved Oxygen at 2.5 m depth at site 3, Henretta Lake.

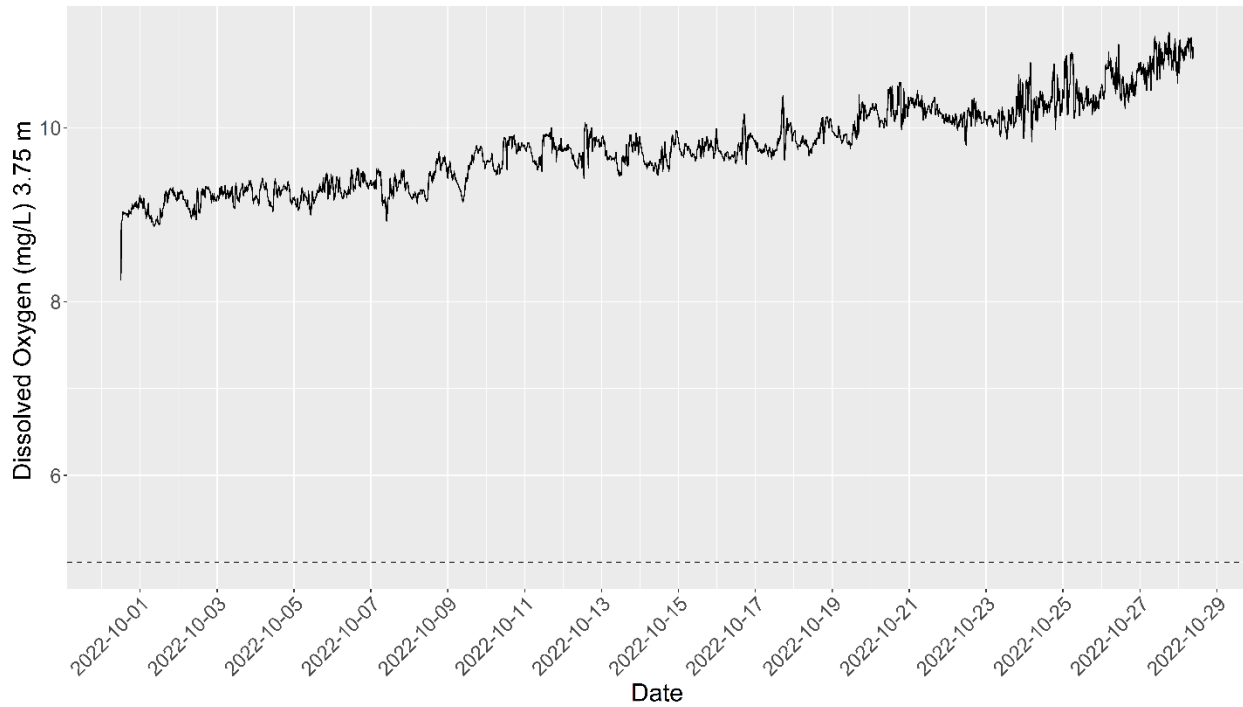


Figure 18. Dissolved Oxygen at 3.75 m depth at site 3, Henretta Lake.

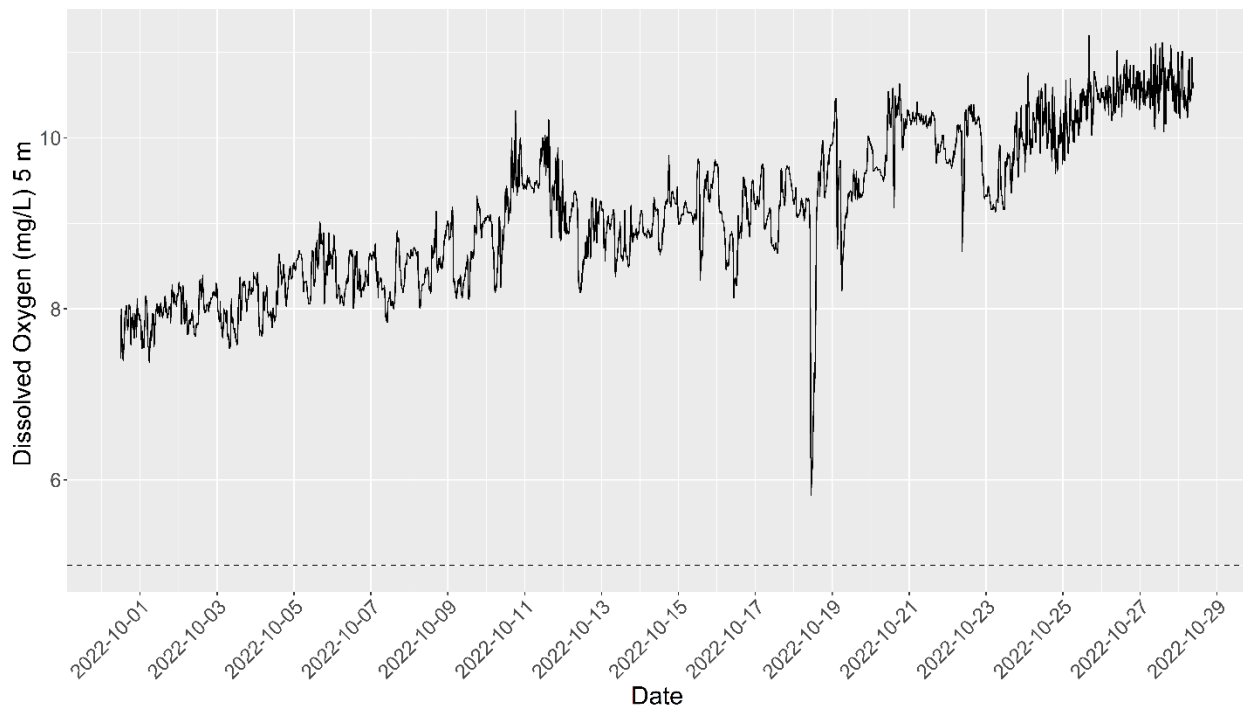


Figure 19. Dissolved Oxygen at 5 m depth at site 3, Henretta Lake.

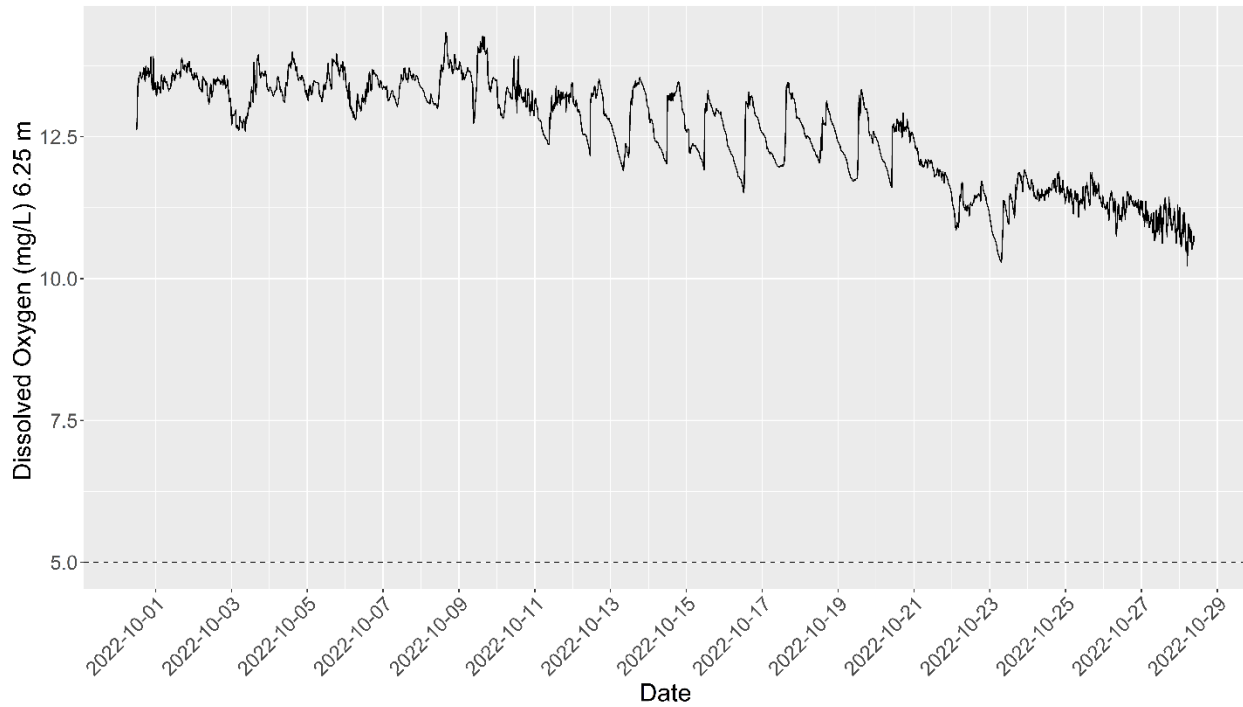


Figure 20. Dissolved Oxygen at 6.25 m depth at site 3, Henretta Lake.

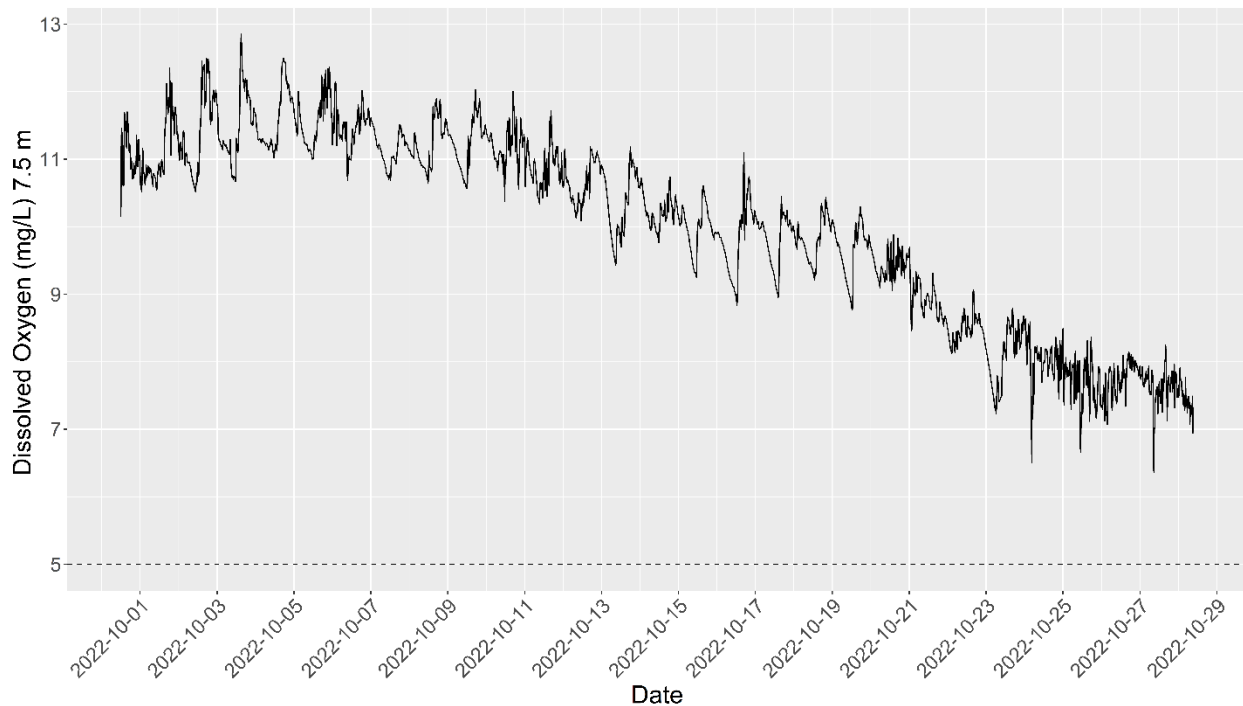


Figure 21. Dissolved Oxygen at 7.5 m depth at site 3, Henretta Lake.

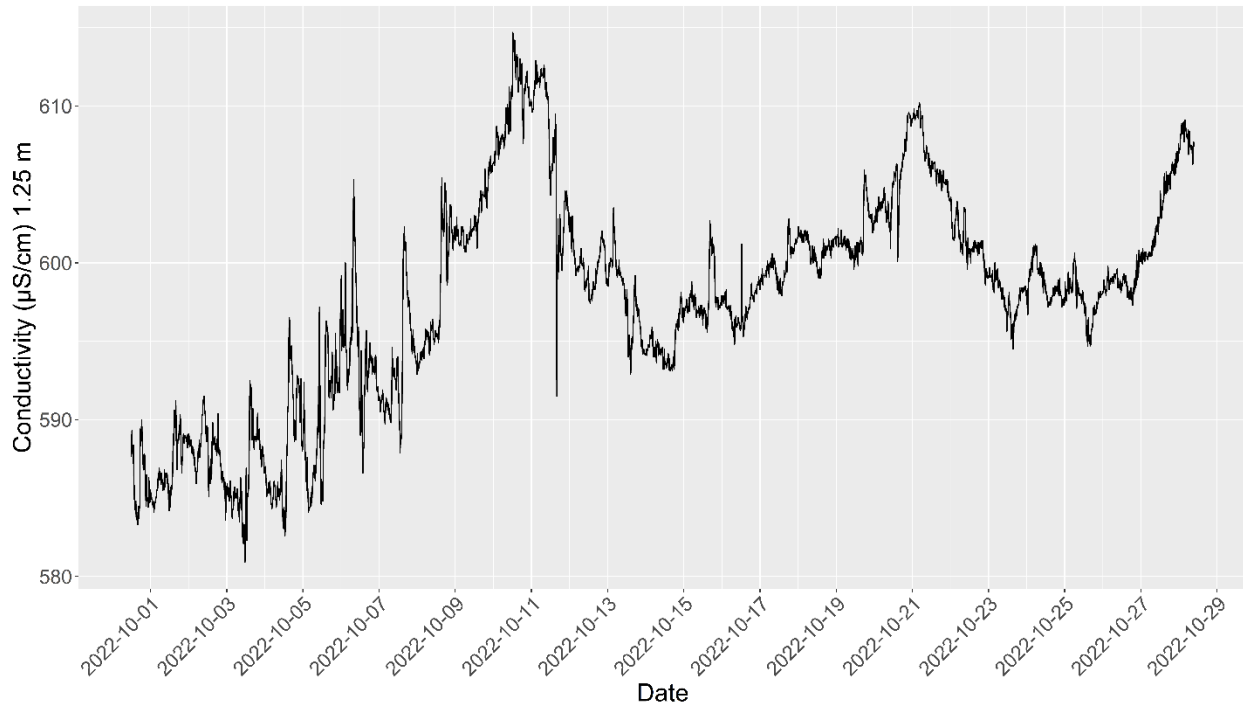


Figure 22. Conductivity at 1.25 m depth at site 3, Henretta Lake.

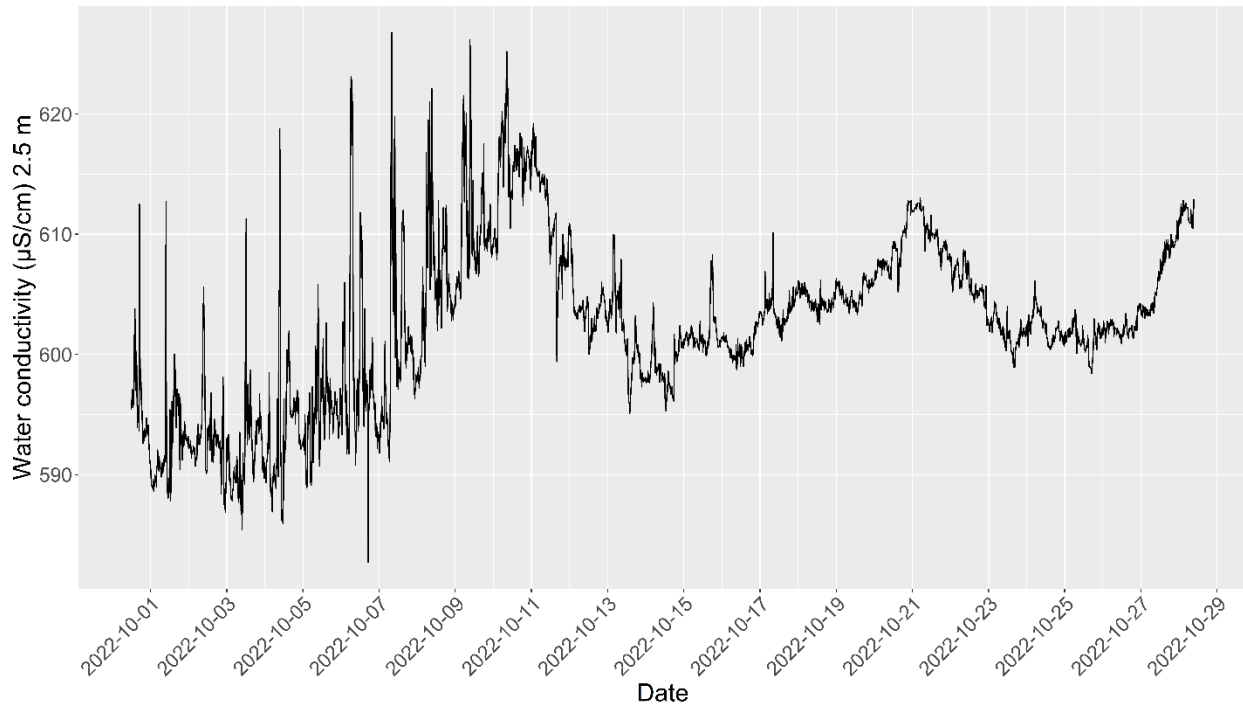


Figure 23. Conductivity at 2.5 m depth at site 3, Henretta Lake.

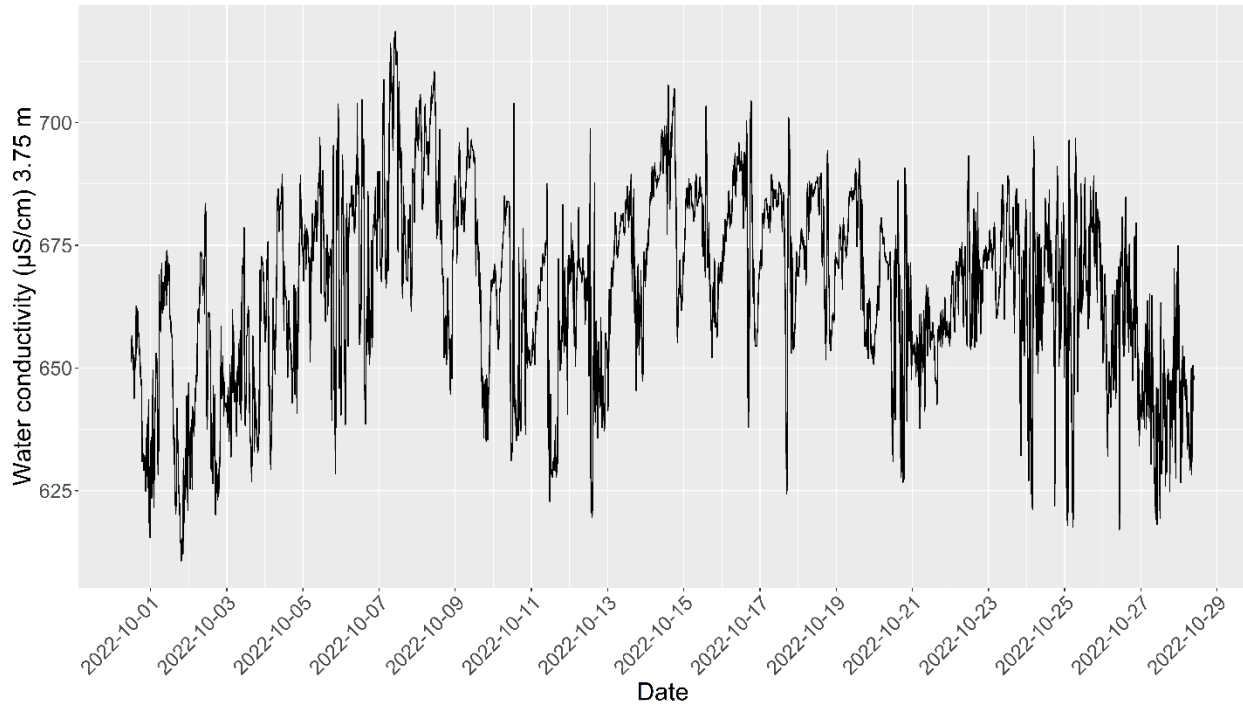


Figure 24. Conductivity at 3.75 m depth at site 3, Henretta Lake.

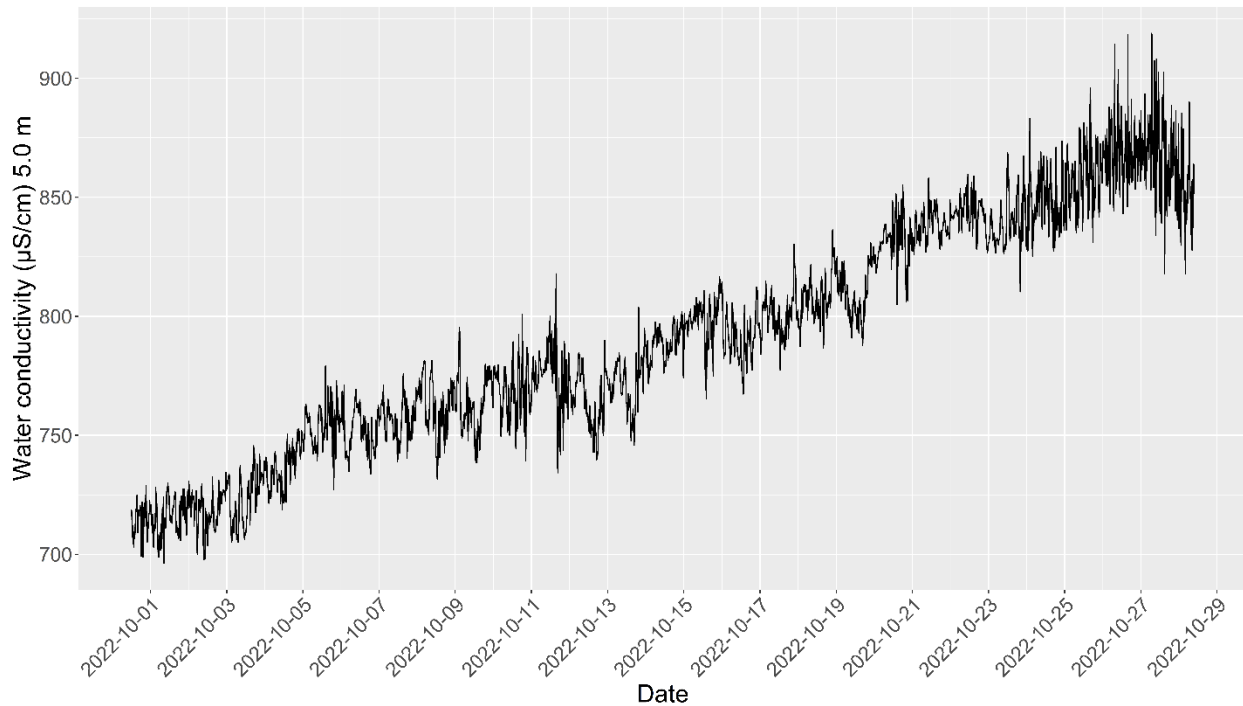


Figure 25. Conductivity at 5 m depth at site 3, Henretta Lake.

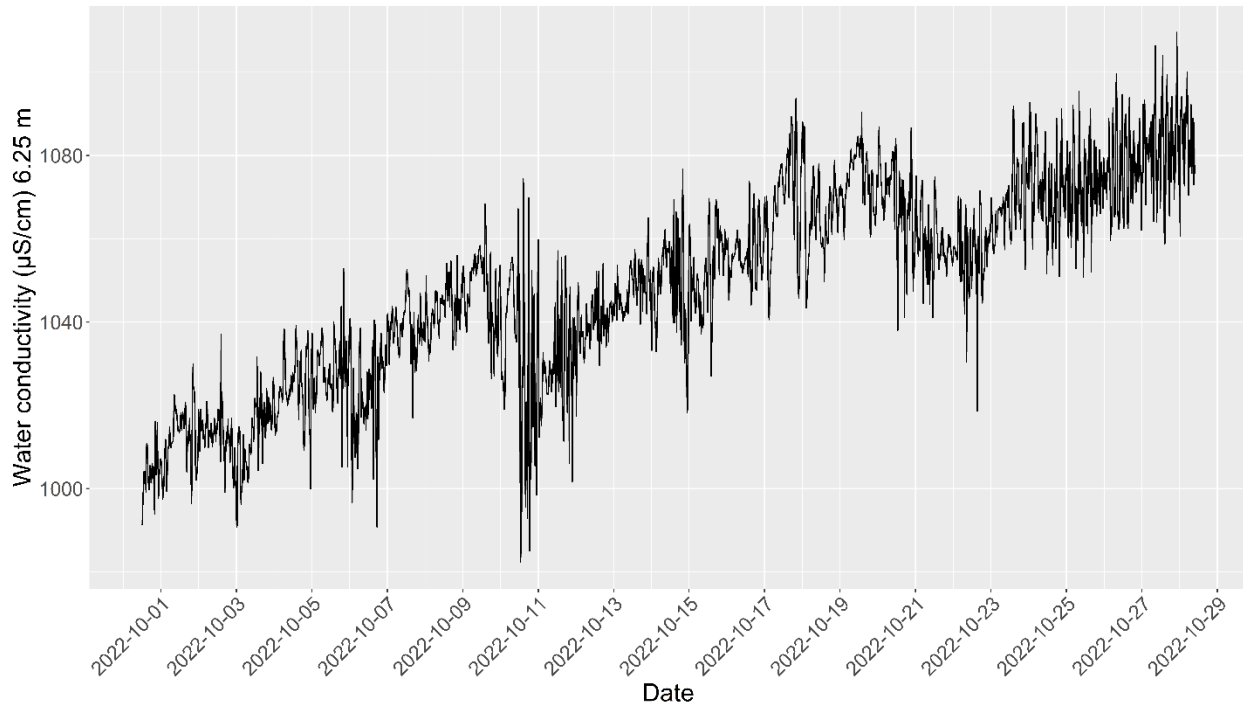


Figure 26. Conductivity at 6.25 m depth at site 3, Henretta Lake.

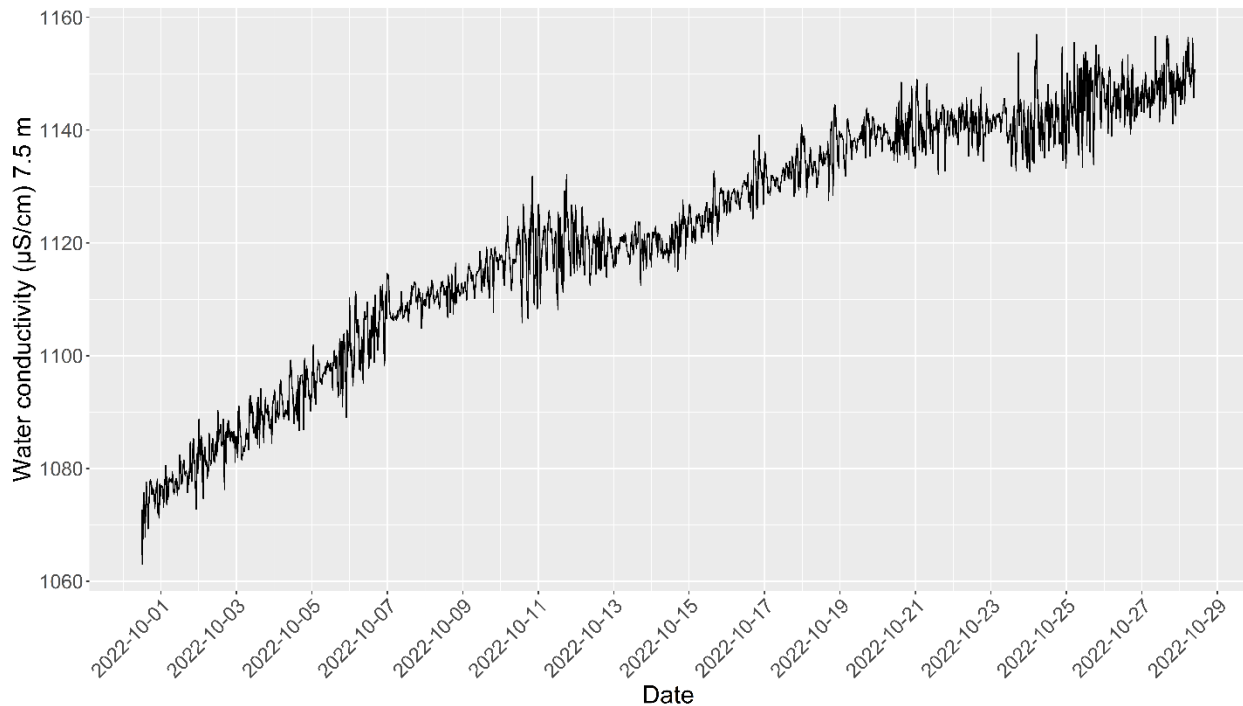


Figure 27. Conductivity at 7.5 m depth at site 3, Henretta Lake.

Table 1. Summary statistics of the temperature, DO, and conductivity data (minimum, maximum, mean, variance, and range) per depth for each day of the study.

Day	Depth	Min temp	Mean temp	Max temp	Var temp	Temp Range	Min DO	Mean DO	Max DO	Var DO	DO range	Min CO	Mean CO	Max CO	Var CO	CO Range
273	wtr_1.25	7.0	7.1	7.6	0.0	0.6	8.6	9.9	10.0	0.0	1.4	583.3	586.0	590.0	3.8	6.7
273	wtr_2.5	6.9	7.0	7.5	0.0	0.6	8.6	9.8	9.9	0.0	1.3	590.9	595.9	612.5	14.9	21.6
273	wtr_3.75	6.7	7.0	7.3	0.0	0.6	8.2	9.0	9.2	0.0	1.0	615.4	642.7	662.6	169.4	47.2
273	wtr_5.0	6.9	7.1	7.6	0.0	0.7	7.4	7.8	8.1	0.0	0.7	698.9	714.0	728.8	50.3	29.9
273	wtr_6.25	8.6	8.6	8.9	0.0	0.3	12.6	13.5	13.9	0.1	1.3	991.2	1003.6	1016.2	25.9	25.0
273	wtr_7.5	8.1	8.3	8.7	0.0	0.6	10.1	11.1	11.7	0.1	1.6	1063.0	1074.2	1078.1	9.4	15.1
274	wtr_1.25	6.3	6.8	7.1	0.1	0.8	9.9	9.9	10.1	0.0	0.2	584.1	586.9	591.2	3.2	7.1
274	wtr_2.5	6.3	6.7	7.0	0.0	0.6	9.8	9.9	10.1	0.0	0.3	587.8	592.3	612.7	12.4	24.9
274	wtr_3.75	6.5	6.8	7.2	0.0	0.7	8.9	9.1	9.3	0.0	0.4	610.6	642.5	673.9	355.7	63.3
274	wtr_5.0	6.8	7.0	7.2	0.0	0.5	7.4	7.9	8.3	0.0	0.9	696.2	715.3	730.1	59.4	33.9
274	wtr_6.25	8.6	8.7	8.8	0.0	0.3	13.2	13.6	13.9	0.0	0.7	996.5	1011.9	1030.0	51.7	33.5
274	wtr_7.5	8.1	8.2	8.4	0.0	0.4	10.5	11.1	12.4	0.2	1.8	1072.8	1078.4	1085.3	6.7	12.5
275	wtr_1.25	6.2	6.8	7.3	0.1	1.1	9.9	10.0	10.1	0.0	0.2	583.6	587.9	591.5	2.5	7.9
275	wtr_2.5	6.2	6.6	7.0	0.0	0.8	9.9	10.0	10.1	0.0	0.2	586.9	592.9	605.6	10.1	18.7
275	wtr_3.75	6.4	6.6	7.2	0.0	0.8	8.9	9.2	9.3	0.0	0.4	620.1	646.7	683.5	243.3	63.4
275	wtr_5.0	6.5	6.9	7.1	0.0	0.5	7.7	8.0	8.4	0.0	0.7	697.8	718.2	734.5	65.9	36.7
275	wtr_6.25	8.5	8.7	8.8	0.0	0.3	13.0	13.4	13.6	0.0	0.6	999.1	1012.9	1037.0	31.1	37.9
275	wtr_7.5	8.1	8.2	8.4	0.0	0.3	10.5	11.4	12.5	0.4	2.0	1074.7	1083.9	1090.3	9.4	15.6
276	wtr_1.25	6.2	6.8	7.4	0.2	1.2	10.0	10.1	10.1	0.0	0.1	580.9	586.4	592.5	6.6	11.6
276	wtr_2.5	6.1	6.6	6.9	0.1	0.8	10.0	10.1	10.1	0.0	0.2	585.4	592.0	611.3	13.3	25.9
276	wtr_3.75	6.4	6.6	7.0	0.0	0.7	9.1	9.3	9.4	0.0	0.3	626.8	649.3	678.6	156.3	51.8
276	wtr_5.0	6.6	6.9	7.1	0.0	0.6	7.5	8.0	8.4	0.1	0.9	704.9	723.4	745.6	117.0	40.7
276	wtr_6.25	8.4	8.6	8.8	0.0	0.4	12.6	13.2	13.9	0.2	1.3	990.8	1012.8	1031.6	67.0	40.8
276	wtr_7.5	8.1	8.3	8.4	0.0	0.3	10.7	11.5	12.9	0.3	2.2	1081.5	1087.8	1094.2	10.2	12.7
277	wtr_1.25	6.3	6.7	7.2	0.1	0.9	10.0	10.1	10.2	0.0	0.2	582.6	587.8	596.5	12.7	13.9

Day	Depth	Min temp	Mean temp	Max temp	Var temp	Temp Range	Min DO	Mean DO	Max DO	Var DO	DO range	Min CO	Mean CO	Max CO	Var CO	CO Range
277	wtr_2.5	6.1	6.5	6.8	0.0	0.7	10.0	10.1	10.2	0.0	0.2	585.9	593.7	618.8	24.7	32.9
277	wtr_3.75	6.3	6.7	7.1	0.0	0.8	9.0	9.3	9.4	0.0	0.4	629.4	662.8	689.4	214.9	60.0
277	wtr_5.0	6.7	6.9	7.1	0.0	0.5	7.7	8.2	8.6	0.1	1.0	718.7	736.0	752.8	76.5	34.1
277	wtr_6.25	8.6	8.8	8.9	0.0	0.3	13.1	13.5	14.0	0.0	0.9	1000.0	1023.8	1039.2	59.5	39.2
277	wtr_7.5	8.2	8.3	8.4	0.0	0.2	11.0	11.6	12.5	0.2	1.5	1086.7	1092.6	1099.5	10.2	12.8
278	wtr_1.25	6.4	6.8	7.2	0.1	0.9	10.0	10.1	10.3	0.0	0.3	584.1	589.8	597.2	14.0	13.1
278	wtr_2.5	6.2	6.6	7.1	0.0	0.8	10.0	10.1	10.5	0.0	0.5	588.9	595.1	605.8	9.3	16.9
278	wtr_3.75	6.6	6.8	7.2	0.0	0.6	9.0	9.2	9.5	0.0	0.5	628.5	672.7	703.8	199.4	75.3
278	wtr_5.0	6.8	7.1	7.4	0.0	0.6	8.1	8.5	9.0	0.1	1.0	727.2	753.9	779.1	78.5	51.9
278	wtr_6.25	8.6	8.8	8.8	0.0	0.2	13.1	13.5	14.0	0.0	0.8	1005.2	1028.6	1052.9	53.1	47.7
278	wtr_7.5	8.2	8.3	8.4	0.0	0.2	11.0	11.6	12.4	0.1	1.4	1089.0	1097.7	1104.5	8.7	15.5
279	wtr_1.25	6.4	6.8	7.1	0.0	0.8	10.0	10.2	10.3	0.0	0.3	586.6	594.3	605.3	11.5	18.7
279	wtr_2.5	6.2	6.6	7.0	0.0	0.8	10.0	10.2	10.3	0.0	0.3	582.7	598.9	623.1	58.2	40.4
279	wtr_3.75	6.4	6.8	7.0	0.0	0.5	9.2	9.3	9.5	0.0	0.4	638.5	673.5	704.7	248.6	66.2
279	wtr_5.0	6.7	7.0	7.2	0.0	0.5	8.0	8.4	8.9	0.0	0.9	733.8	751.7	770.9	81.1	37.1
279	wtr_6.25	8.4	8.6	8.8	0.0	0.4	12.8	13.3	13.7	0.1	0.9	990.8	1023.1	1040.8	108.8	50.0
279	wtr_7.5	8.2	8.3	8.4	0.0	0.2	10.7	11.5	12.2	0.1	1.5	1094.7	1104.1	1112.6	20.1	17.9
280	wtr_1.25	6.2	6.6	6.9	0.0	0.7	10.2	10.3	10.4	0.0	0.2	587.9	593.5	602.3	12.0	14.4
280	wtr_2.5	6.1	6.4	6.7	0.0	0.5	10.1	10.3	10.3	0.0	0.2	591.1	600.7	626.8	49.9	35.7
280	wtr_3.75	6.5	6.8	7.2	0.0	0.7	8.9	9.3	9.5	0.0	0.6	661.6	687.9	718.6	268.7	57.0
280	wtr_5.0	6.7	6.9	7.3	0.0	0.5	7.8	8.4	8.9	0.1	1.1	739.0	756.8	775.8	57.0	36.8
280	wtr_6.25	8.7	8.7	8.9	0.0	0.2	13.0	13.4	13.7	0.0	0.7	1017.0	1038.5	1052.6	33.9	35.6
280	wtr_7.5	8.2	8.3	8.4	0.0	0.2	10.7	11.2	11.6	0.1	0.9	1104.8	1109.0	1114.6	5.2	9.8
281	wtr_1.25	6.0	6.4	7.0	0.1	0.9	10.2	10.3	10.4	0.0	0.1	592.9	597.7	605.4	14.3	12.5
281	wtr_2.5	6.1	6.3	6.5	0.0	0.5	10.2	10.3	10.4	0.0	0.2	597.2	606.1	622.1	27.2	24.9
281	wtr_3.75	6.2	6.6	7.0	0.0	0.8	9.1	9.4	9.7	0.0	0.6	644.7	683.7	710.4	343.5	65.7
281	wtr_5.0	6.4	6.9	7.2	0.0	0.7	8.0	8.5	9.1	0.1	1.1	731.5	762.3	781.5	133.6	50.0
281	wtr_6.25	8.6	8.7	8.9	0.0	0.3	13.0	13.5	14.3	0.1	1.3	1030.6	1043.5	1056.0	32.3	25.4
281	wtr_7.5	8.2	8.3	8.4	0.0	0.2	10.6	11.2	11.9	0.1	1.3	1106.8	1111.0	1116.4	2.8	9.6

Day	Depth	Min temp	Mean temp	Max temp	Var temp	Temp Range	Min DO	Mean DO	Max DO	Var DO	DO range	Min CO	Mean CO	Max CO	Var CO	CO Range
282	wtr_1.25	5.9	6.4	6.8	0.1	0.8	8.9	10.3	10.5	0.1	1.6	600.7	603.0	606.8	2.9	6.1
282	wtr_2.5	5.9	6.3	6.7	0.0	0.8	10.2	10.3	10.5	0.0	0.2	603.9	610.6	626.2	22.6	22.3
282	wtr_3.75	6.0	6.4	6.8	0.0	0.8	9.2	9.5	9.8	0.0	0.7	635.0	673.4	698.9	357.5	63.9
282	wtr_5.0	6.4	6.7	7.1	0.0	0.7	8.1	8.7	9.3	0.1	1.2	738.4	762.9	795.3	136.9	56.9
282	wtr_6.25	8.5	8.7	8.9	0.0	0.4	12.7	13.6	14.3	0.1	1.5	1026.4	1048.2	1068.3	69.7	41.9
282	wtr_7.5	8.2	8.2	8.3	0.0	0.2	10.6	11.2	12.0	0.1	1.5	1107.7	1114.7	1119.3	6.6	11.6
283	wtr_1.25	6.0	6.2	6.5	0.0	0.5	10.3	10.4	10.5	0.0	0.2	606.2	610.0	614.7	4.8	8.5
283	wtr_2.5	5.9	6.2	6.5	0.0	0.6	10.3	10.4	10.6	0.0	0.3	607.9	615.5	625.2	11.3	17.3
283	wtr_3.75	5.9	6.3	6.5	0.0	0.6	9.5	9.7	9.9	0.0	0.5	631.1	660.9	703.9	270.3	72.8
283	wtr_5.0	6.4	6.7	7.1	0.0	0.7	8.2	9.1	10.3	0.2	2.1	739.2	768.6	800.8	123.9	61.6
283	wtr_6.25	8.2	8.5	8.7	0.0	0.5	12.8	13.2	13.9	0.1	1.1	982.3	1031.9	1074.4	416.0	92.1
283	wtr_7.5	8.2	8.3	8.4	0.0	0.2	10.4	11.2	12.0	0.1	1.6	1105.9	1117.7	1131.8	23.9	25.9
284	wtr_1.25	5.9	6.1	6.3	0.0	0.4	10.3	10.4	10.6	0.0	0.3	591.5	607.1	612.9	21.4	21.4
284	wtr_2.5	5.8	6.1	6.3	0.0	0.5	10.4	10.5	10.6	0.0	0.3	599.4	611.3	619.2	16.2	19.8
284	wtr_3.75	5.7	6.2	6.4	0.0	0.7	9.5	9.8	10.0	0.0	0.5	622.8	655.1	687.6	262.0	64.8
284	wtr_5.0	6.4	6.7	7.0	0.0	0.6	8.8	9.5	10.2	0.1	1.4	734.3	775.8	817.9	188.4	83.6
284	wtr_6.25	8.2	8.4	8.5	0.0	0.3	12.4	13.0	13.5	0.1	1.1	1001.7	1030.1	1059.8	127.3	58.1
284	wtr_7.5	8.1	8.2	8.4	0.0	0.3	10.3	10.9	11.7	0.1	1.4	1108.2	1120.3	1132.1	21.6	23.9
285	wtr_1.25	5.6	5.9	6.3	0.0	0.8	10.4	10.5	10.6	0.0	0.2	597.4	599.8	603.0	1.8	5.6
285	wtr_2.5	5.6	5.9	6.2	0.0	0.6	10.4	10.5	10.6	0.0	0.2	600.0	603.9	610.9	4.4	10.9
285	wtr_3.75	6.0	6.1	6.3	0.0	0.3	9.4	9.8	10.1	0.0	0.6	619.5	658.4	698.7	231.9	79.2
285	wtr_5.0	6.2	6.5	6.8	0.0	0.6	8.2	8.9	9.4	0.1	1.2	739.7	764.5	789.9	140.5	50.2
285	wtr_6.25	8.4	8.5	8.6	0.0	0.2	12.2	13.0	13.5	0.1	1.3	1017.5	1039.8	1054.0	33.6	36.5
285	wtr_7.5	8.0	8.2	8.3	0.0	0.2	10.1	10.7	11.2	0.1	1.1	1112.5	1119.2	1126.4	9.1	13.9
286	wtr_1.25	5.5	5.8	6.2	0.0	0.7	10.3	10.5	10.6	0.0	0.3	592.9	597.7	603.5	5.6	10.6
286	wtr_2.5	5.4	5.8	6.1	0.0	0.7	10.5	10.6	10.7	0.0	0.2	595.1	601.4	610.0	11.1	14.9
286	wtr_3.75	5.6	6.1	6.4	0.0	0.8	9.5	9.7	9.9	0.0	0.5	641.3	671.0	689.4	129.8	48.1
286	wtr_5.0	6.0	6.5	6.8	0.0	0.8	8.4	8.8	9.2	0.0	0.9	745.7	771.7	803.9	122.4	58.2
286	wtr_6.25	8.4	8.5	8.7	0.0	0.2	11.9	12.8	13.6	0.3	1.7	1039.5	1048.1	1065.0	27.2	25.5

Day	Depth	Min temp	Mean temp	Max temp	Var temp	Temp Range	Min DO	Mean DO	Max DO	Var DO	DO range	Min CO	Mean CO	Max CO	Var CO	CO Range
286	wtr_7.5	8.0	8.1	8.2	0.0	0.3	9.4	10.3	11.2	0.2	1.8	1112.5	1119.5	1123.7	4.6	11.2
287	wtr_1.25	5.4	5.7	6.0	0.0	0.6	10.5	10.6	10.9	0.0	0.4	593.1	594.7	598.1	1.4	5.0
287	wtr_2.5	5.4	5.6	5.9	0.0	0.5	10.5	10.6	10.7	0.0	0.2	595.3	598.9	604.3	3.3	9.0
287	wtr_3.75	5.8	6.0	6.4	0.0	0.6	9.5	9.7	10.0	0.0	0.5	655.1	685.4	707.6	162.1	52.5
287	wtr_5.0	6.3	6.6	6.7	0.0	0.4	8.6	9.1	9.8	0.1	1.2	771.7	788.3	801.9	47.2	30.2
287	wtr_6.25	8.0	8.5	8.6	0.0	0.6	12.0	12.8	13.5	0.2	1.5	1018.2	1049.0	1076.7	133.4	58.5
287	wtr_7.5	8.0	8.0	8.1	0.0	0.2	9.8	10.2	10.7	0.1	1.0	1115.0	1120.5	1127.6	6.5	12.6
288	wtr_1.25	5.3	5.7	6.1	0.0	0.8	10.5	10.6	10.7	0.0	0.2	595.6	597.8	602.7	2.3	7.1
288	wtr_2.5	5.3	5.6	5.9	0.0	0.6	10.5	10.6	10.7	0.0	0.2	599.9	601.7	608.3	2.8	8.4
288	wtr_3.75	5.6	5.9	6.2	0.0	0.6	9.6	9.8	10.0	0.0	0.4	652.1	676.8	703.3	120.8	51.2
288	wtr_5.0	6.1	6.6	6.8	0.0	0.7	8.3	9.2	9.8	0.1	1.4	765.5	798.6	816.6	84.3	51.1
288	wtr_6.25	8.2	8.4	8.6	0.0	0.5	11.9	12.6	13.3	0.1	1.4	1027.1	1052.4	1069.7	81.4	42.6
288	wtr_7.5	7.9	8.0	8.1	0.0	0.2	9.3	10.0	10.6	0.1	1.4	1119.7	1125.1	1132.7	7.9	13.0
289	wtr_1.25	5.1	5.5	5.9	0.0	0.7	10.6	10.6	10.7	0.0	0.2	594.8	597.1	601.2	1.1	6.4
289	wtr_2.5	5.1	5.5	5.8	0.0	0.6	9.2	10.7	10.8	0.0	1.6	598.7	600.7	603.4	1.0	4.7
289	wtr_3.75	5.5	5.8	6.1	0.0	0.6	9.6	9.8	10.2	0.0	0.6	637.9	679.3	704.5	191.6	66.6
289	wtr_5.0	5.9	6.3	6.8	0.0	0.9	8.1	9.0	9.7	0.1	1.6	767.3	790.6	814.3	95.8	47.0
289	wtr_6.25	8.3	8.4	8.5	0.0	0.2	11.5	12.5	13.3	0.3	1.8	1044.1	1056.4	1073.8	37.8	29.7
289	wtr_7.5	7.9	8.0	8.1	0.0	0.2	8.8	9.8	11.1	0.3	2.3	1124.2	1129.5	1139.1	8.1	14.9
290	wtr_1.25	5.0	5.4	5.9	0.0	0.9	10.5	10.7	10.8	0.0	0.2	597.9	599.8	602.8	1.2	4.9
290	wtr_2.5	5.0	5.4	5.7	0.0	0.7	9.2	10.7	11.1	0.1	2.0	601.1	603.6	610.1	1.6	9.0
290	wtr_3.75	5.4	5.7	6.0	0.0	0.6	9.6	9.8	10.4	0.0	0.7	624.3	676.2	701.0	207.1	76.7
290	wtr_5.0	6.0	6.3	6.6	0.0	0.6	8.7	9.2	9.7	0.1	1.0	777.3	800.3	830.2	84.6	52.9
290	wtr_6.25	8.3	8.5	8.8	0.0	0.5	12.0	12.5	13.5	0.2	1.5	1040.6	1069.3	1093.8	150.5	53.2
290	wtr_7.5	7.9	8.0	8.0	0.0	0.2	9.0	9.8	10.5	0.1	1.5	1128.2	1132.2	1140.9	6.2	12.7
291	wtr_1.25	4.8	5.2	5.6	0.0	0.8	10.6	10.7	10.8	0.0	0.2	599.0	600.9	602.3	0.7	3.3
291	wtr_2.5	4.8	5.2	5.5	0.0	0.6	10.6	10.8	11.1	0.0	0.5	602.5	604.4	606.2	0.7	3.7
291	wtr_3.75	5.3	5.6	5.9	0.0	0.7	9.7	9.9	10.1	0.0	0.5	651.7	675.5	694.3	119.1	42.6
291	wtr_5.0	6.1	6.3	6.6	0.0	0.6	5.8	9.0	10.0	1.0	4.2	786.7	807.8	836.3	91.0	49.6

Day	Depth	Min temp	Mean temp	Max temp	Var temp	Temp Range	Min DO	Mean DO	Max DO	Var DO	DO range	Min CO	Mean CO	Max CO	Var CO	CO Range
291	wtr_6.25	8.1	8.4	8.6	0.0	0.5	12.0	12.6	13.1	0.1	1.1	1043.4	1065.9	1088.1	84.0	44.7
291	wtr_7.5	7.8	7.9	8.0	0.0	0.2	9.2	9.8	10.4	0.1	1.2	1127.5	1135.3	1144.5	12.3	17.0
292	wtr_1.25	4.8	5.1	5.6	0.0	0.8	10.8	10.8	10.9	0.0	0.2	599.6	601.8	605.9	1.9	6.3
292	wtr_2.5	4.8	5.1	5.5	0.0	0.7	10.8	10.9	11.1	0.0	0.3	603.3	605.1	606.8	0.8	3.5
292	wtr_3.75	5.2	5.4	5.8	0.0	0.6	9.8	10.0	10.4	0.0	0.6	650.8	672.7	692.6	145.8	41.8
292	wtr_5.0	5.8	6.2	6.6	0.0	0.8	8.2	9.5	10.5	0.2	2.3	787.6	809.5	830.8	110.4	43.2
292	wtr_6.25	8.2	8.4	8.6	0.0	0.4	11.7	12.4	13.3	0.2	1.6	1059.9	1074.6	1090.4	40.3	30.5
292	wtr_7.5	7.8	7.9	8.0	0.0	0.1	8.8	9.7	10.3	0.2	1.5	1131.9	1138.8	1143.9	5.4	12.0
293	wtr_1.25	4.9	5.0	5.2	0.0	0.3	10.7	10.8	10.9	0.0	0.2	600.1	605.0	609.6	5.4	9.5
293	wtr_2.5	4.9	5.1	5.2	0.0	0.3	10.8	10.9	11.0	0.0	0.2	605.2	608.6	612.8	3.9	7.6
293	wtr_3.75	5.0	5.3	5.4	0.0	0.4	10.0	10.2	10.5	0.0	0.5	626.6	662.8	690.7	244.3	64.1
293	wtr_5.0	5.9	6.3	6.6	0.0	0.7	9.2	10.0	10.6	0.1	1.5	804.9	831.4	855.1	103.3	50.2
293	wtr_6.25	8.1	8.2	8.4	0.0	0.3	11.6	12.4	12.9	0.1	1.3	1038.0	1069.3	1086.9	100.8	48.9
293	wtr_7.5	7.7	7.9	7.9	0.0	0.2	9.1	9.4	9.9	0.0	0.8	1133.2	1139.3	1148.5	8.9	15.3
294	wtr_1.25	4.9	5.0	5.1	0.0	0.2	10.6	10.7	10.8	0.0	0.2	603.9	606.8	610.2	3.3	6.3
294	wtr_2.5	4.9	5.0	5.1	0.0	0.2	10.6	10.7	10.8	0.0	0.2	607.0	610.3	613.0	2.4	6.0
294	wtr_3.75	5.1	5.2	5.3	0.0	0.2	10.1	10.2	10.4	0.0	0.4	637.7	655.3	666.9	32.7	29.2
294	wtr_5.0	5.9	6.2	6.4	0.0	0.4	9.7	10.1	10.4	0.0	0.7	825.9	838.2	858.0	43.8	32.1
294	wtr_6.25	7.9	8.0	8.2	0.0	0.3	11.5	12.0	12.4	0.0	0.9	1041.0	1059.2	1075.1	49.1	34.1
294	wtr_7.5	7.8	7.8	7.9	0.0	0.2	8.5	8.9	9.7	0.1	1.2	1132.2	1141.0	1149.0	10.8	16.8
295	wtr_1.25	4.4	4.6	4.9	0.0	0.5	10.6	10.7	10.8	0.0	0.2	598.6	601.3	604.2	1.5	5.6
295	wtr_2.5	4.4	4.6	4.9	0.0	0.5	10.7	10.8	10.9	0.0	0.2	602.4	605.9	608.7	1.9	6.3
295	wtr_3.75	4.8	5.0	5.3	0.0	0.6	9.8	10.1	10.3	0.0	0.5	653.8	668.3	693.2	67.1	39.4
295	wtr_5.0	5.6	6.1	6.3	0.0	0.6	8.7	9.9	10.4	0.1	1.7	826.5	843.5	859.6	49.0	33.1
295	wtr_6.25	7.7	7.9	8.0	0.0	0.2	10.9	11.3	11.7	0.0	0.9	1018.6	1056.5	1071.6	68.9	53.0
295	wtr_7.5	7.6	7.8	7.9	0.0	0.2	8.1	8.5	9.1	0.0	0.9	1134.5	1141.0	1147.6	6.0	13.1
296	wtr_1.25	4.1	4.2	4.4	0.0	0.3	10.7	10.9	11.0	0.0	0.3	594.5	597.8	600.0	1.4	5.5
296	wtr_2.5	4.1	4.2	4.4	0.0	0.4	10.8	10.9	11.1	0.0	0.3	598.9	601.8	604.4	1.4	5.5
296	wtr_3.75	4.3	4.8	5.1	0.1	0.8	9.9	10.1	10.6	0.0	0.7	632.1	672.1	689.2	107.0	57.1

Day	Depth	Min temp	Mean temp	Max temp	Var temp	Temp Range	Min DO	Mean DO	Max DO	Var DO	DO range	Min CO	Mean CO	Max CO	Var CO	CO Range
296	wtr_5.0	5.5	5.8	6.2	0.0	0.7	9.1	9.6	10.4	0.1	1.3	810.3	839.3	868.6	116.5	58.3
296	wtr_6.25	7.9	8.0	8.1	0.0	0.3	10.3	11.2	11.9	0.2	1.6	1052.6	1068.7	1091.8	65.6	39.2
296	wtr_7.5	7.5	7.6	7.8	0.0	0.3	7.2	8.1	8.8	0.2	1.6	1132.8	1141.0	1153.7	11.2	20.9
297	wtr_1.25	3.7	3.8	4.1	0.0	0.4	11.0	11.0	11.2	0.0	0.2	596.7	598.7	601.2	1.2	4.5
297	wtr_2.5	3.7	3.9	4.1	0.0	0.5	11.0	11.1	11.2	0.0	0.2	600.4	602.3	606.1	1.5	5.7
297	wtr_3.75	4.0	4.3	4.8	0.0	0.8	9.8	10.3	10.8	0.0	0.9	621.1	665.1	697.1	265.8	76.0
297	wtr_5.0	5.4	5.8	6.2	0.0	0.8	9.6	10.1	10.8	0.1	1.2	825.2	848.0	883.1	148.5	57.9
297	wtr_6.25	7.7	7.9	8.1	0.0	0.4	11.3	11.6	11.9	0.0	0.6	1051.0	1071.9	1092.8	85.1	41.8
297	wtr_7.5	7.4	7.5	7.7	0.0	0.3	6.5	8.0	8.6	0.1	2.1	1132.6	1141.6	1157.0	24.6	24.4
298	wtr_1.25	3.5	3.6	3.8	0.0	0.3	11.1	11.1	11.3	0.0	0.2	594.7	597.6	600.6	1.7	5.9
298	wtr_2.5	3.5	3.7	3.9	0.0	0.4	11.1	11.2	11.3	0.0	0.1	598.4	601.3	603.7	1.2	5.3
298	wtr_3.75	3.7	4.0	4.2	0.0	0.4	10.1	10.4	10.9	0.0	0.8	617.5	667.5	696.7	296.2	79.2
298	wtr_5.0	5.2	5.7	6.1	0.0	0.9	9.7	10.3	11.2	0.1	1.5	831.0	858.1	895.9	177.1	64.9
298	wtr_6.25	7.7	7.8	7.9	0.0	0.2	11.1	11.5	11.9	0.0	0.8	1050.8	1072.7	1095.4	82.9	44.6
298	wtr_7.5	7.3	7.5	7.6	0.0	0.2	6.7	7.7	8.5	0.1	1.8	1133.4	1146.1	1155.6	26.2	22.2
299	wtr_1.25	3.4	3.6	3.7	0.0	0.4	11.1	11.2	11.2	0.0	0.1	597.3	598.8	600.8	0.5	3.5
299	wtr_2.5	3.4	3.6	3.8	0.0	0.4	11.2	11.2	11.3	0.0	0.1	600.9	602.2	604.2	0.5	3.3
299	wtr_3.75	3.5	3.9	4.0	0.0	0.5	10.2	10.5	11.0	0.0	0.7	617.1	658.2	684.8	159.6	67.7
299	wtr_5.0	5.4	5.7	6.1	0.0	0.7	10.2	10.5	11.0	0.0	0.8	843.0	868.6	918.3	186.9	75.3
299	wtr_6.25	7.7	7.8	7.9	0.0	0.1	10.8	11.3	11.5	0.0	0.8	1059.6	1076.3	1099.6	86.4	40.0
299	wtr_7.5	7.3	7.4	7.5	0.0	0.2	7.1	7.7	8.2	0.1	1.1	1138.9	1145.5	1153.3	9.1	14.4
300	wtr_1.25	3.3	3.5	3.7	0.0	0.4	11.2	11.2	11.3	0.0	0.2	599.9	603.2	607.6	5.7	7.7
300	wtr_2.5	3.3	3.5	3.7	0.0	0.4	11.2	11.3	11.4	0.0	0.2	603.0	606.5	611.2	6.4	8.2
300	wtr_3.75	3.4	3.8	3.9	0.0	0.5	10.4	10.8	11.1	0.0	0.7	618.1	642.7	674.9	153.3	56.8
300	wtr_5.0	5.1	5.5	6.0	0.0	0.9	10.1	10.6	11.1	0.0	1.0	818.0	869.8	918.9	338.3	100.9
300	wtr_6.25	7.7	7.8	7.8	0.0	0.1	10.6	11.0	11.4	0.0	0.8	1058.7	1082.7	1109.6	89.0	50.9
300	wtr_7.5	7.3	7.4	7.5	0.0	0.2	6.4	7.6	8.3	0.1	1.9	1141.1	1147.8	1156.8	11.3	15.7
301	wtr_1.25	3.4	3.5	3.6	0.0	0.2	11.2	11.2	11.3	0.0	0.0	606.3	607.9	609.1	0.5	2.8
301	wtr_2.5	3.4	3.5	3.6	0.0	0.2	11.3	11.3	11.4	0.0	0.0	610.5	611.7	612.9	0.5	2.4

Day	Depth	Min temp	Mean temp	Max temp	Var temp	Temp Range	Min DO	Mean DO	Max DO	Var DO	DO range	Min CO	Mean CO	Max CO	Var CO	CO Range
301	wtr_3.75	3.5	3.7	3.8	0.0	0.3	10.6	10.9	11.0	0.0	0.4	626.6	641.8	654.5	64.9	27.9
301	wtr_5.0	5.0	5.2	5.7	0.0	0.7	10.2	10.6	11.0	0.0	0.8	817.7	851.7	890.0	212.6	72.3
301	wtr_6.25	7.6	7.8	7.8	0.0	0.2	10.2	10.8	11.3	0.0	1.0	1060.6	1083.9	1100.0	66.1	39.4
301	wtr_7.5	7.3	7.4	7.5	0.0	0.2	6.9	7.4	7.9	0.0	1.0	1144.6	1149.6	1156.5	9.4	11.9



Henretta Lake Water Quality Profiles



Final

May 2023

Prepared by

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Prepared by:

We trust that this document provides adequate information to describe the water quality profiles of Henretta Lake from 2022 sampling efforts. Please do not hesitate to contact us with any inquiries about this document.



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1 Introduction

Henretta Lake is located on Teck Coal Ltd. (Teck) – Fording River Operations’ (FRO) mine site, 29 km northeast of Elkford, BC. The Henretta Creek system is a third order tributary to the Fording River. Historically Henretta Creek was diverted into culverts to allow for mining of the Henretta Pit. Once mining was completed new channels were constructed and Henretta Creek was diverted into the pit creating Henretta Lake and a reclaimed flow through lake system. Effectiveness monitoring was completed for seven years after Henretta Lake was created fulfilling permit requirements in 2006.

Henretta Lake provides one of the highest used overwintering habitats for Westslope Cutthroat Trout (*Oncorhynchus clarkii lewisi*) (WCT) in the upper Fording River (Cope *et al.* 2016). However, recent capture, snorkel, and Passive Integrated Telemetry data have also shown movement into and use of the lake during the summer months and early fall (Bransfield 2020; Penman *et al.* 2022). Therefore, it is believed that Henretta Lake provides high-value, year-round habitat for adult WCT, and potentially earlier life stages as well.

The importance of Henretta Lake as valuable fish habitat has consequently resulted in the completion of multiple Henretta Lake monitoring programs. Since Henretta Lake is a reclaimed flow through lake system there is interest in whether selenium bioaccumulation is occurring or not, and whether the lake is connected to groundwater sources in the area, and how groundwater may affect fish habitat and water quality. Furthermore, previously recorded overwintering temperatures and dissolved oxygen concentrations in Henretta Lake were lower than recommended fish guidelines (BCMoE 2021). This resulted in hypoxic conditions occurring at the bottom of Henretta Lake during the winter. Therefore, the combined low dissolved oxygen concentrations and temperatures may reduce the overwintering habitat available for WCT. Consequently, this Henretta Lake water quality profiling program occurred in conjunction with an existing *in-situ* profile monitoring program on Henretta Lake, as part of the FRO dewatering surveys program, which used continuous loggers at 11 sites. This Henretta Lake program involved collecting water quality grab samples and *in-situ* profiles at three sites: HEN1, HEN2 and HEN3 (Figure 1). *In-situ* profiles using a YSI ProDSS, and water samples were collected in the winter, summer, and fall of 2022 to monitor water quality in Henretta Lake.

1.1 Objectives

The purpose of this Henretta Lake water quality profiling program was to collect data to support ongoing studies on Henretta Lake and to understand the potential of stratification of constituents of interest within Henretta Lake. Key objectives for profiling the water quality in Henretta Lake were:

1. To determine if thermal and/or chemical stratification was evident in the lake.
2. To define temporal and spatial trends in the water quality parameters.
3. To determine selenium speciation found within the lake.
4. To compare water quality results to the BC ambient water quality guidelines for the protection of freshwater aquatic life, in regards of whether any exceedances occurred.
5. To compare water quality results to Teck’s specific water quality limits for total selenium, nitrate and sulphate from Permit 107517 (the Permit) for the FRO compliance point (FR_FRABCH) closest to Henretta Lake.

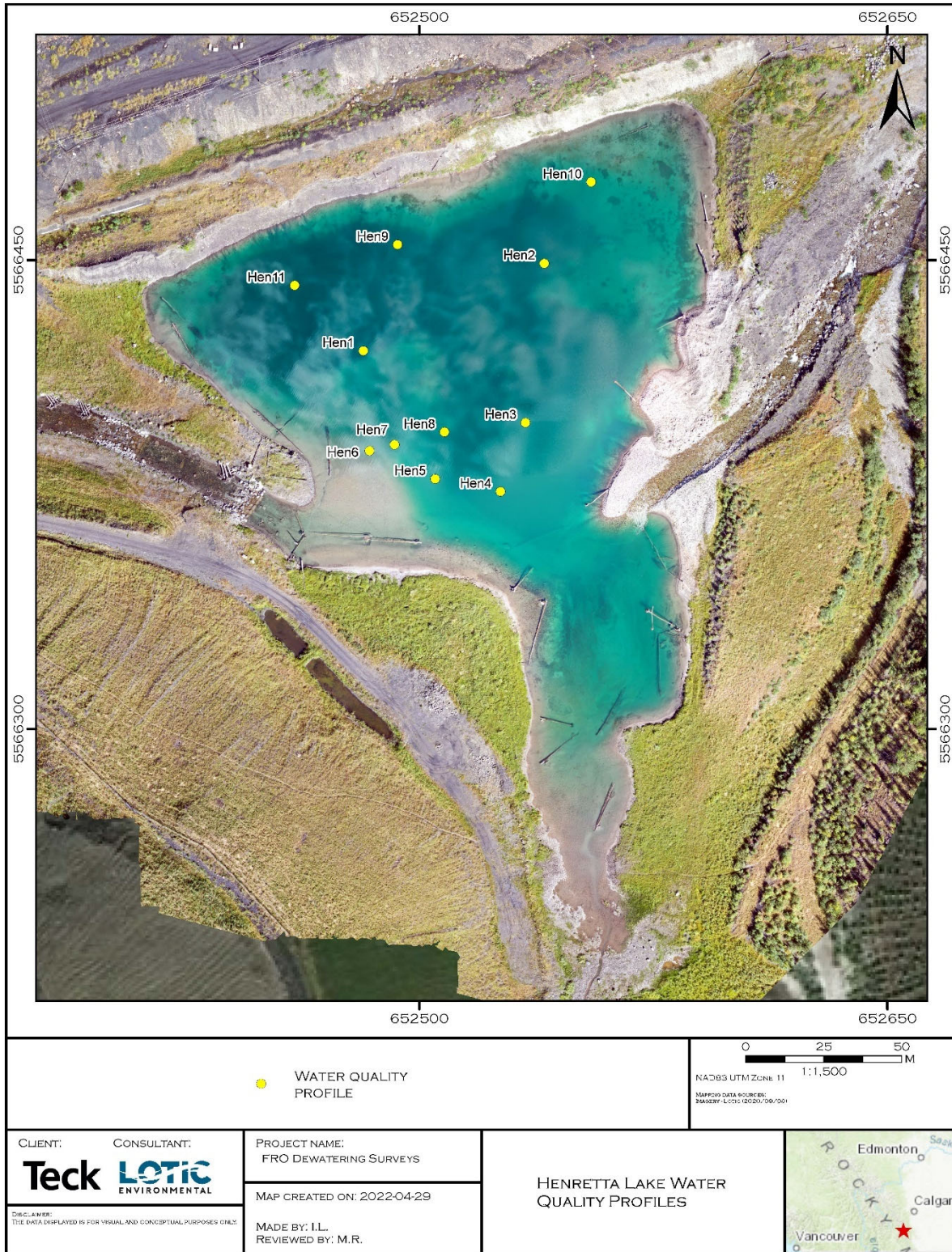


Figure 1. HEN1, HEN2, and HEN3 Henretta Lake water quality profile locations which overlap with sites from the FRO dewatering surveys.

2 Methods

Water samples were collected at three locations within Henretta Lake (Table 1) in the winter (February 17, 2022), summer (June 29, 2022), and fall (October 21, 2022). *In-situ* profiles were collected at each location with a YSI ProDSS (hand-held digital sampling system) at depth intervals of 0.5 m throughout the water column. *In-situ* parameters included temperature, dissolved oxygen (DO), specific conductivity (SPC), pH, and oxidation reduction potential (ORP).

Water samples were collected with a Kemmerer sampler at depths of 1 m, 3.5 m and 7m and shipped to and analyzed by ALS Environmental (ALS), Calgary, AB. All samples were analyzed for Teck’s routine parameters, total and dissolved organic carbon (TOC and DOC), total Kjeldahl nitrogen (TKN), total and dissolved metals, and total and dissolved mercury. Additional water samples were collected at HEN3 to determine selenium speciation at each depth. Selenium speciation samples were shipped to and analyzed by Brooks Applied Labs (Brooks), Bothell, WA, USA.

Table 1. Henretta Lake water quality sampling and profiling locations.

Site	UTM location	Maximum Lake Depth (m)		
		February	June	October
HEN1	11U 652482 5566421	6.2	7.5	7.7
HEN2	11U 652540 5566449	6.9	7.5	7.0
HEN3	11U 652534 5566398	7.5	8.5	7.7

To determine stratification, as well as spatial and temporal trends within Henretta Lake, water quality results were plotted by depth and by date using either Excel or R software (R Core Team 2022). Total selenium, nitrate, and sulphate were water quality parameters of interest for Teck. Therefore, those three parameters were exclusively analyzed for stratification and trends observed in Henretta Lake. Water quality parameters were manually compared to the BC ambient water quality guidelines (BCMoE 2021) and Teck’s specific limits with exceedances reported. If reoccurring exceedances were observed for any water quality parameter, then that parameter was analyzed for chemical stratification as well. As stated in the permit, Teck specific limits were compared to water quality results as follows: “for months where only one result is collected, that result shall be compared to both the monthly average and daily maximum limits. Daily maximums are defined as any single grab sample.”.

To maintain quality assurance and quality control (QA/QC) of the water samples, trip blanks, field blanks and duplicate samples were collected once per sampling event (i.e., one of each QA/QC sample during winter, summer and fall sampling events). The QA/QC methods and results are presented in Appendix 3. Quality assurance analyses indicated that field sampling and lab analysis procedures were accurate and precise There were no flagged results of concern from the QA/QC review process.

Results

All water quality *in-situ* field data and lab results of grab samples are listed in Appendix 1. Any exceedances of BC ambient water quality guidelines for the protection of freshwater aquatic life were bolded in the appended table.

2.1 *In-situ* water quality profiles

2.1.1 Temperature

Temperature profiles of Henretta Lake (Figure 2) indicated thermal stratification on February 17 and October 21, 2022. No thermal stratification was evident on June 29, 2022. This was indicative of ice free, high flow conditions post-freshet, resulting in isothermal conditions from spring turnover.

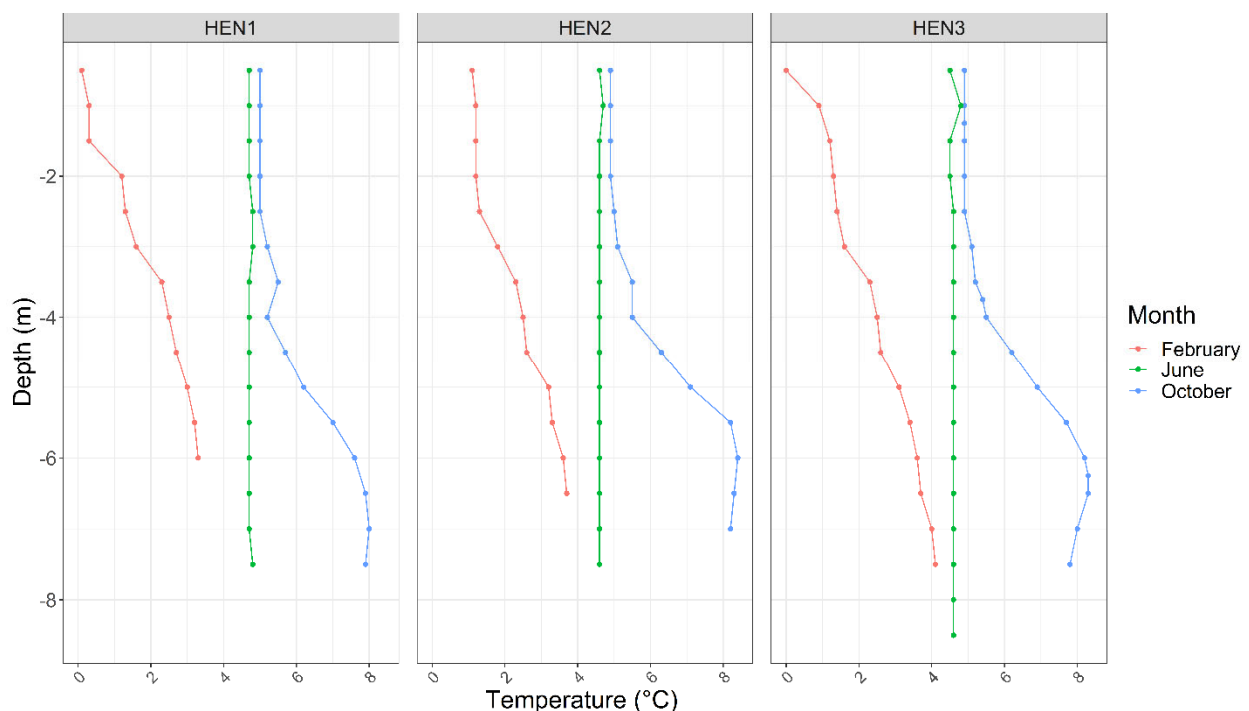


Figure 2. Temperature profiles of three Henretta Lake sites comparing seasonal data.

February 17, 2022 showed gradual thermal stratification of increasing temperatures moving from below the water surface to the bottom of the lake, but without distinct stratified layers. Increased temperature moving down through the water column occurred due to ice cover and cold winter conditions cooling the first 4 m of lake water to temperatures below 4 °C, which was less dense than water below 4 m deep. Therefore, the colder, less dense surface water floated on top of the more dense, deeper water with higher temperatures close to 4 °C. Freshwater is at its greatest density at 4 °C.

Temperature profiles from October showed distinct thermal stratification of increasing temperatures from the surface of the lake to the bottom. In October, all three sites' epilimnion extended from the water surface down to approximately 3 m as indicated by low temperature variability. The thermocline extended from approximately 3 m below the water surface to 6 m as indicated by the variability in increasing temperatures, and the hypolimnion extended from approximately 6 m to the bottom, 7 – 7.5 m depth, as shown by low water temperature variability at those depths. The increasing warmer temperatures with depth in October was unexpected, as more dense water (4.9 – 5.0 °C) was observed above less dense water (5.1 – 8.4 °C). It was suspected that groundwater influences may have caused the increased temperatures at lower lake depths. However, groundwater influences have not been verified. The same thermal stratification was found in October 2022 during the Henretta Lake profiling monitoring program using continuous loggers (Brooks and Gordon 2022). Brooks and Gordon (2022) also proposed groundwater influences as a potential explanation for the increasing temperature gradient moving down through the water column.

There were differences in total lake depth at each site (Table 1) due to site location and flow conditions. The start depth of each layer of stratification slightly varied between sites as HEN1 was the shallowest site, except for in October when HEN2 was shallowest, while HEN3 was the deepest site in all months. This resulted in an approximately 0.5 m maximum difference between the depths of each stratified layer amongst the three sites sampled.

There was little variability observed in temperature across all three sites of Henretta Lake (Figure 3). All three sites showed similar temperatures at each 0.5 m interval depth. Therefore, all three sites were representative of water temperatures observed in Henretta Lake at any given depth or location.

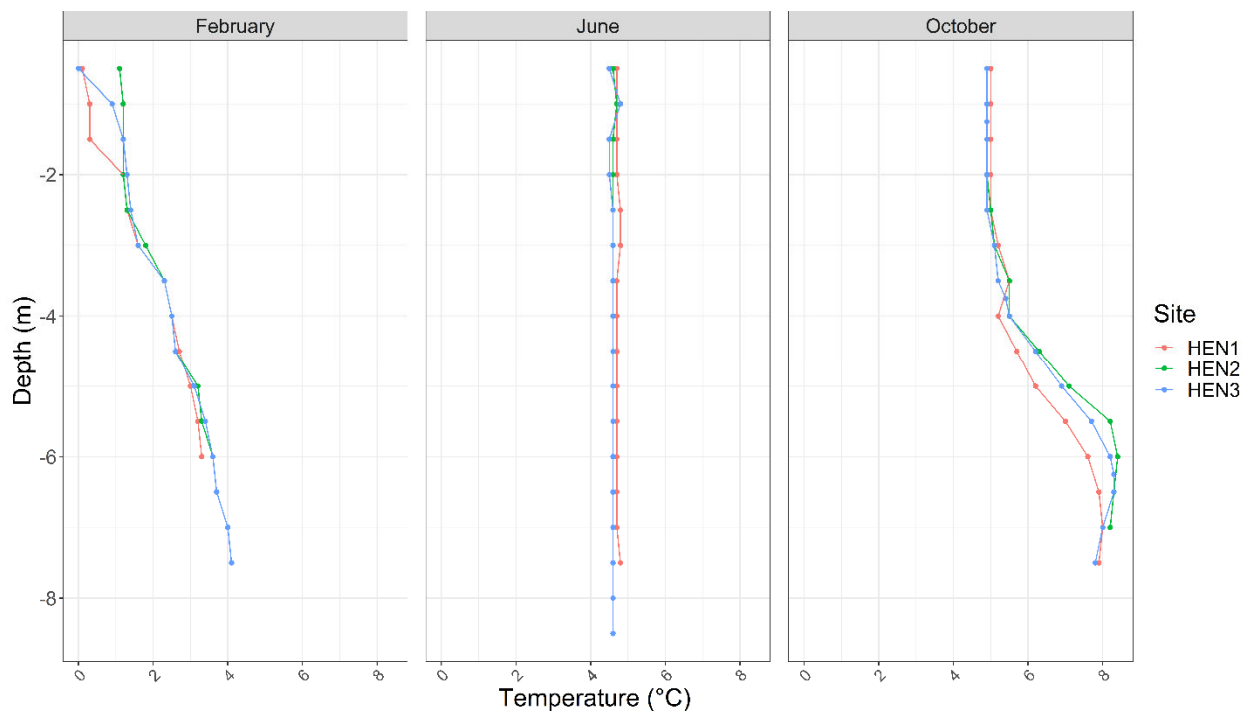


Figure 3. Seasonal temperature profiles comparing three Henretta Lake sites.

2.1.2 Dissolved Oxygen

Dissolved oxygen profiles at all three Henretta Lake sites (Figure 4) showed similar results as temperature profiles, in that both February and October showed lake stratification, whereas June did not. February had well oxygenated water in the epilimnion down to 2.5 – 3 m below surface. The thermocline observed in February extended from 2.5 – 3 m below surface to 5 – 5.5 m with dissolved oxygen rapidly decreasing to hypoxia owing to ice cover reducing light and blocking atmospheric oxygen and aeration by wind. The hypolimnion was hypoxic with DO ranging from 0.30 – 1.19 mg/L from approximately 5.5 m to the bottom of the lake.

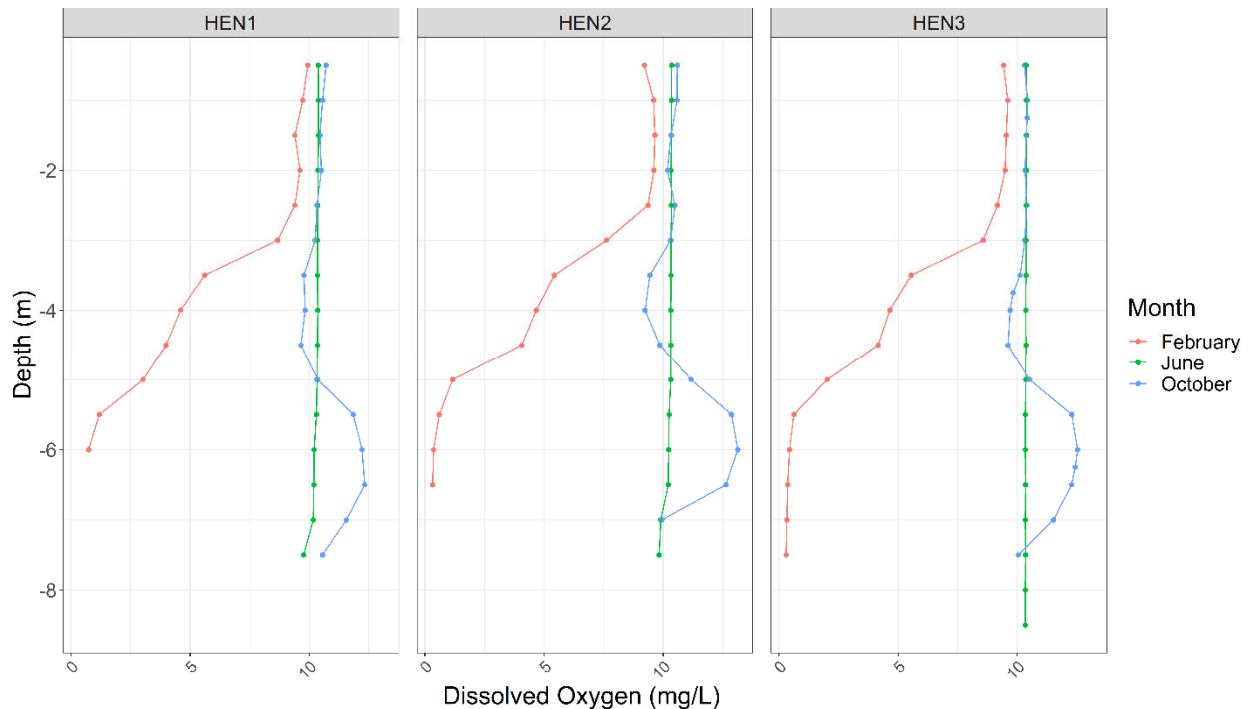


Figure 4. Dissolved oxygen profiles of three Henretta Lake sites comparing seasonal data.

June 29, 2022, had high DO concentrations ranging from 9.77 – 10.39 mg/L. DO stratification did not occur due to isothermal conditions from spring turnover. This resulted in optimal DO concentrations at all lake depths for rearing WCT life stages. BC water quality guidelines state that DO must be ≥ 5 mg/L for the protection of all rearing stages of freshwater aquatic life.

DO measurements from October showed high DO concentrations throughout the water column and similar lake stratification as indicated by temperature profiles. The epilimnion extended down to 3 m, the thermocline extended from 3 m in depth to 6 m in depth where DO decreased from 3 – 4.5 m and then increased from 4.5 – 6 m. The hypolimnion extended from 6 m to the bottom where the highest DO concentrations were recorded. The bottom 0.5 – 1 m layer of water in October had decreased DO (~ 1 – 3 mg/L) compared to the concentrations observed in the top layers of the hypolimnion, potentially as a result of Sediment Oxygen Demand. The increased DO in the hypolimnion showed similar trends to the increase in temperature observed in October. Higher DO concentrations measured in the hypolimnion were speculated to be caused by phytoplankton photosynthesizing and/or groundwater influences, as was proposed during the 2022 Henretta Lake profiling monitoring program using continuous loggers (Brooks and Gordon 2022).

As observed in the temperature data, there was minimal spatial variability observed in DO between all three sites of Henretta Lake (Figure 5). Similar DO concentrations were found at each 0.5 m interval depth at all three sites. Therefore, all three sites were representative of DO concentrations found in Henretta Lake at any give depth or location.

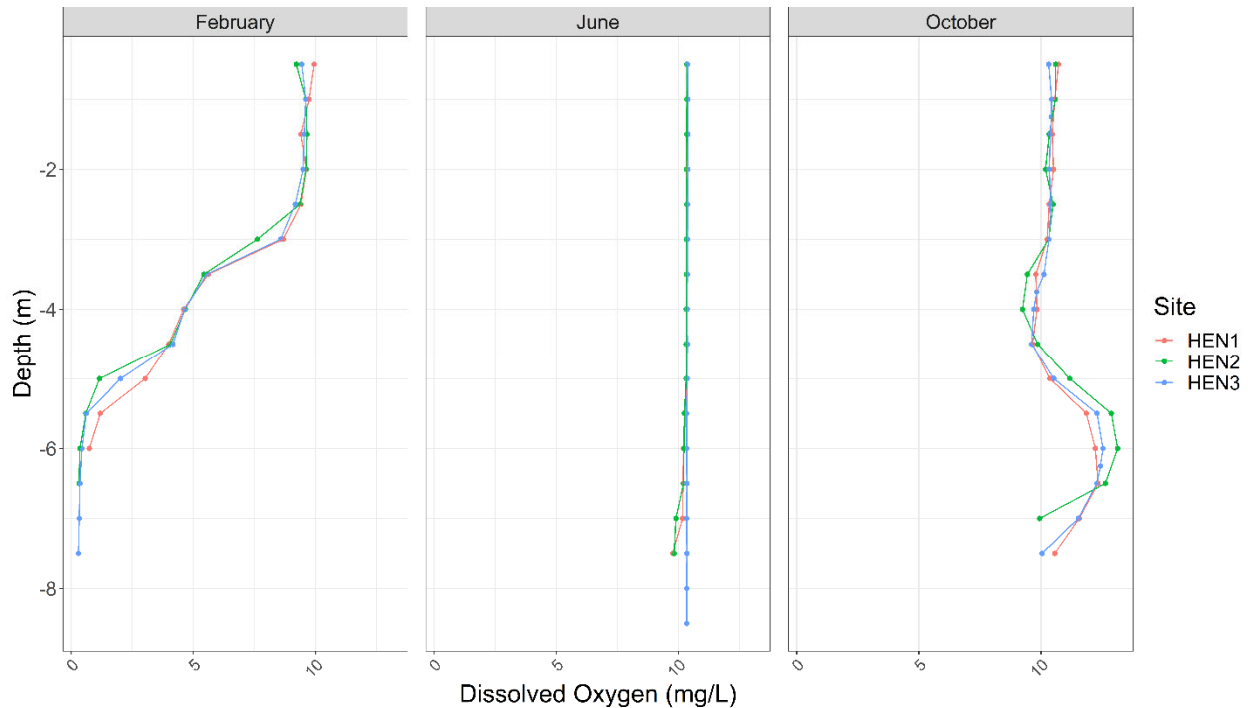


Figure 5. Seasonal dissolved oxygen profiles comparing three Henretta Lake sites.

2.1.3 pH

Henretta Lake pH profiles of all three sites (Figure 6) showed similar trends to as mentioned above. February and October showed lake stratification, while June did not. Both February's and October's epilimnion extended down to 2.5 m, the thermocline ranged from 2.5 – 3.5 m and the hypolimnion ranged from 3.5 m to the bottom. Throughout the thermocline and hypolimnion pH gradually decreased. All pH values recorded were neutral to slightly alkaline, ranging from 7.13 – 8.06, well within the BC water quality guidelines of 6.5 – 9.0 pH for the protection of freshwater aquatic life.

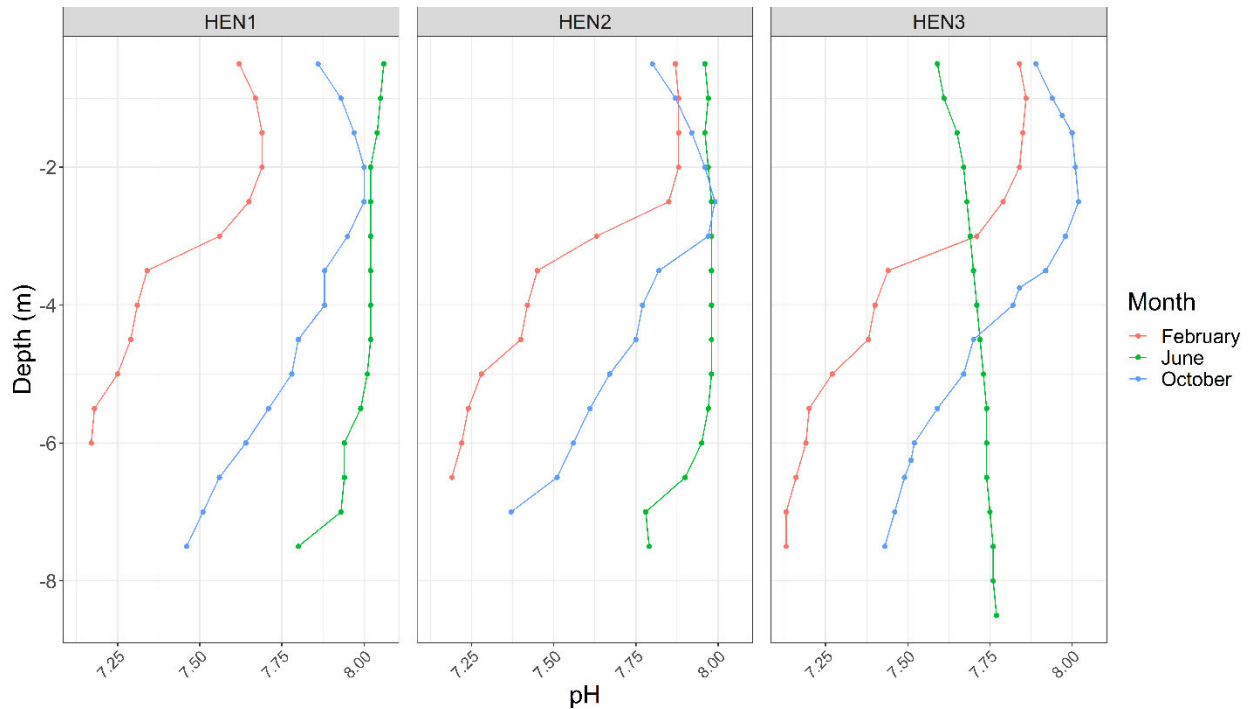


Figure 6. pH profiles of three Henretta Lake sites comparing seasonal data.

There was slight spatial variation observed in pH within the epilimnion and thermocline of HEN1 on February 17, 2022 compared to HEN2 and HEN3 (Figure 7). Both HEN2 and HEN3 had similar pH values in February. The largest difference observed was at the 0.5 m depth measurement where HEN1 pH was equal to 7.62, less alkaline than HEN2 = 7.86 and HEN3 = 7.84. On June 29, 2022 there was slight spatial variation between HEN3 and HEN1 and HEN2, where HEN3 was less alkaline than the other two sites down to a depth of 7 m. From 7 – 8.5 m, pH at HEN3 was similar to HEN1 and HEN2. Again, the largest difference observed was near the surface at 0.5 m where HEN1 was equal to 8.06, HEN2 = 7.96 and HEN3 = 7.59. October had minimal variation in pH values between the three sites at each 0.5 m interval depth. Overall, the spatial differences observed in February and June in pH did not indicate high spatial variability amongst the sites. Therefore, each of the three sites were representative of pH values recorded in Henretta Lake individually. All data ranged between 7.13 – 8.06 pH indicating slightly alkaline conditions throughout the whole lake.

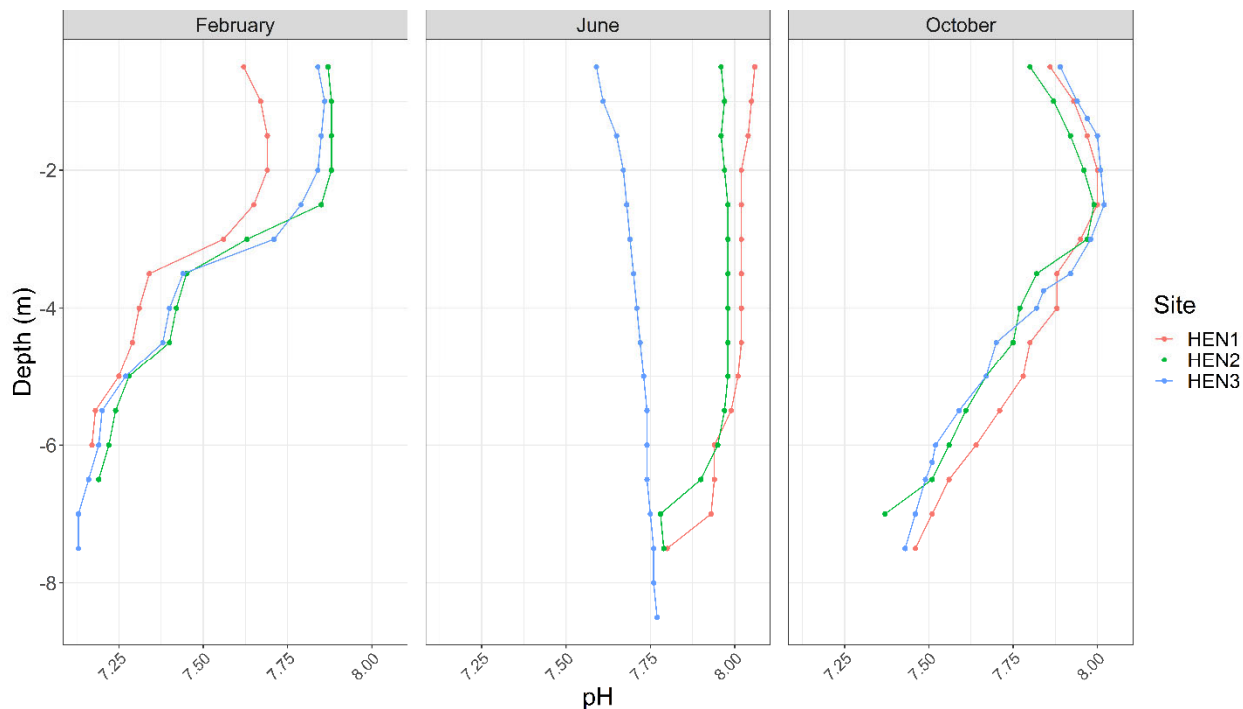


Figure 7. Seasonal pH profiles comparing three Henretta Lake sites.

2.1.4 Specific conductivity

Specific conductivity (SPC) showed the same trends as seen in the previously discussed *in-situ* water quality parameters. February and October experienced lake stratification while June did not (Figure 8). February had the highest SPC values recorded, followed by October, while June had the lowest SPC values recorded at all three sites. February had the most obvious stratification with the epilimnion extending down to 2.5 m. The thermocline extended from 2.5 – 4.5 m for HEN1, 2.5 - 5 m for HEN2, and 2.5 – 5.5 m for HEN3. The epilimnion had slight increases in SPC moving down through the water column. June had no stratification evident in SPC. October showed subtle SPC stratification where the epilimnion extended down to 3 m. The range in depth of the thermocline and epilimnion in October was dependent on site, where: HEN1 thermocline ranged from 3 – 6.5 m, HEN2 thermocline from 3 – 5.5 m and HEN3 thermocline from 3 – 6 m. The hypolimnion began in the range of 5.5 – 6.5 m. Lower SPC values observed in June were associated with lake turnover and high flow conditions, whereas higher SPC values recorded in February and October were associated with absence of mixing and low flow conditions.

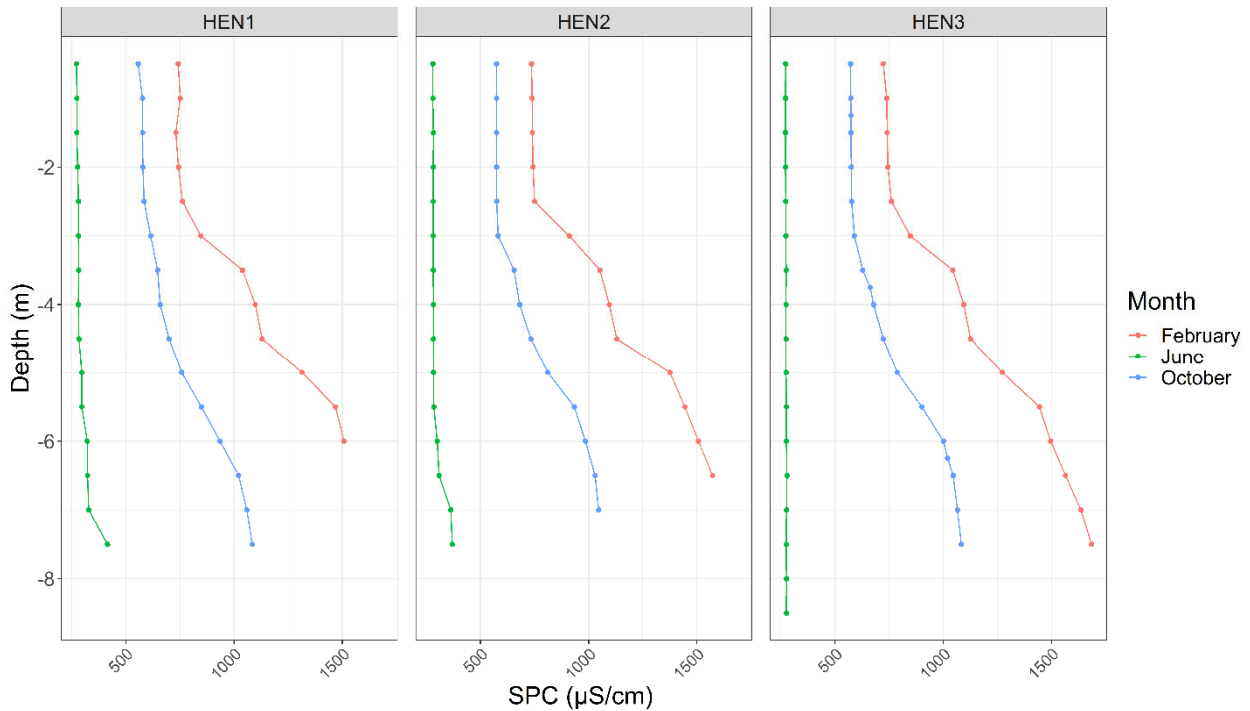


Figure 8. Specific conductivity profiles of three Henretta Lake sites comparing seasonal data.

There were no spatial differences observed in SPC between all three sites (Figure 9). The three sites showed similar SPC concentrations at each 0.5 m interval depth. Therefore, all three sites were representative of SPC concentrations found in Henretta Lake at any given depth or location.

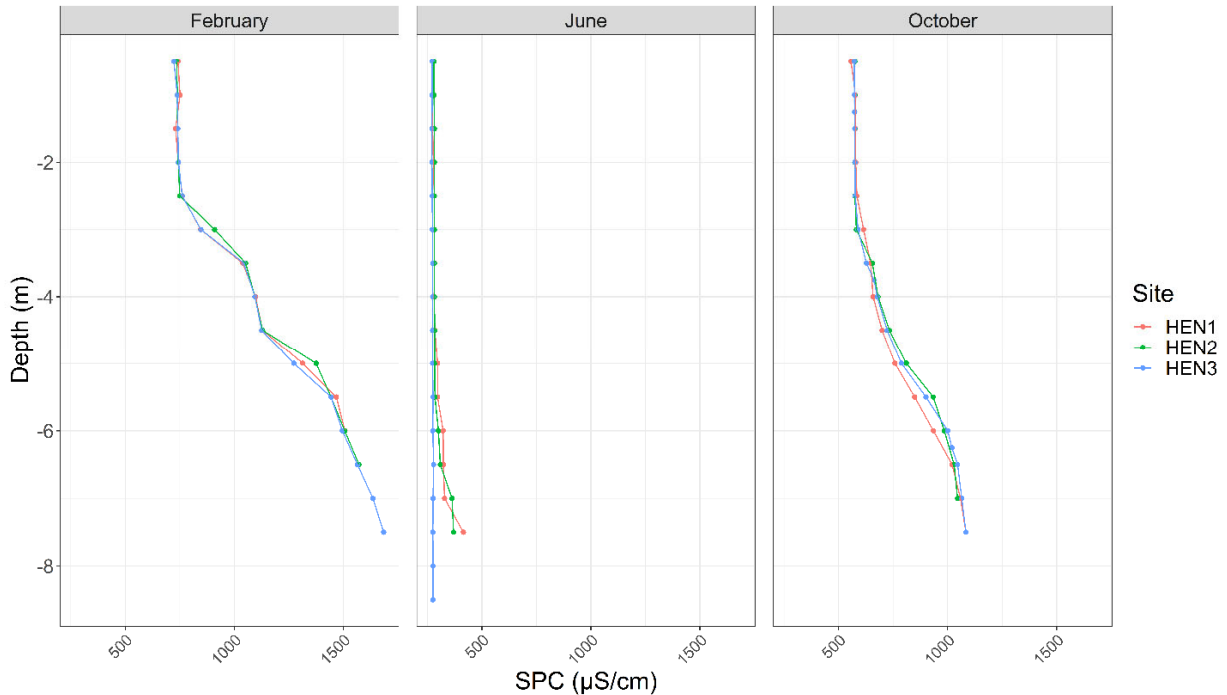


Figure 9. Seasonal specific conductivity profiles comparing three Henretta Lake sites.

2.1.5 Oxidation reduction potential

Oxidation reduction potential (ORP) profiles of Henretta Lake indicated minimal variability throughout most of the water column within any of the months sampled (Figure 10). As opposed to other *in-situ* water quality parameters, ORP showed the most variability in June, increasing at a mean rate of 4.2 mV moving down through the water column. However, no stratification was evident in June. HEN2 was the only site where ORP sharply decreased at the bottom 0.5 – 1 m of the lake. At HEN2 in February, ORP decreased from 219.4 mV to 193.7 mV from the 6 m to 6.5 m depth, in June from 277.1 mV to 225.1 mV from the 6.5 m to 7.5 m depth, and in October from 195.1 mV to 180.5 mV from the 6.5 m to 7 m depth. HEN2 was the only site where a sudden change in ORP was observed, and ORP was the only *in-situ* parameter that exhibited this.

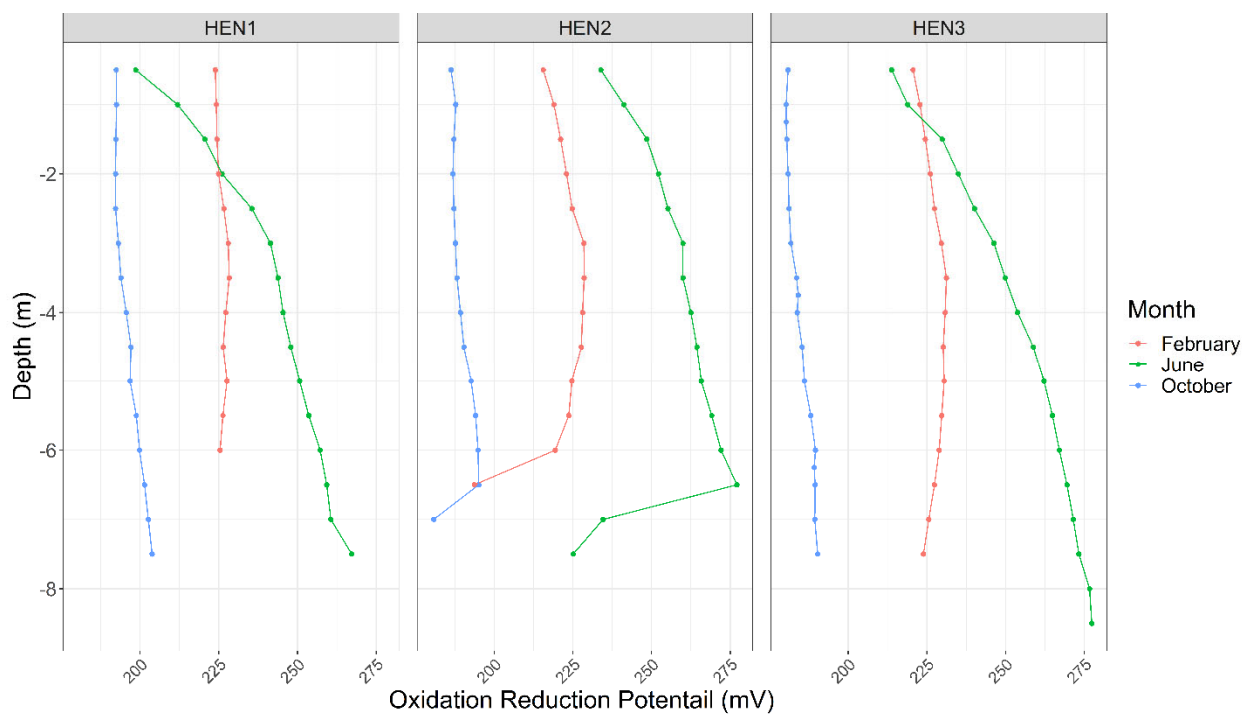


Figure 10. Oxidation reduction potential profiles of three Henretta Lake sites comparing seasonal data.

There were minimal spatial differences observed in ORP between all three sites of Henretta Lake (Figure 11). In February and October, similar SPC concentrations at each 0.5 m interval depth were observed at all three sites. June ORP showed slight spatial variability between the three sites where HEN1 had the lowest ORP values, and HEN2 had the highest ORP values. Except for the bottom two ORP records of HEN2 which were the lowest ORP values recorded in June. ORP had the largest range in June from 198.6 – 277.4 mV between the three sites. Regardless, ORP indicated that all three sites were oxidizing environments. Therefore, all three sites were considered representative of ORP measured at any given depth or location within Henretta Lake.

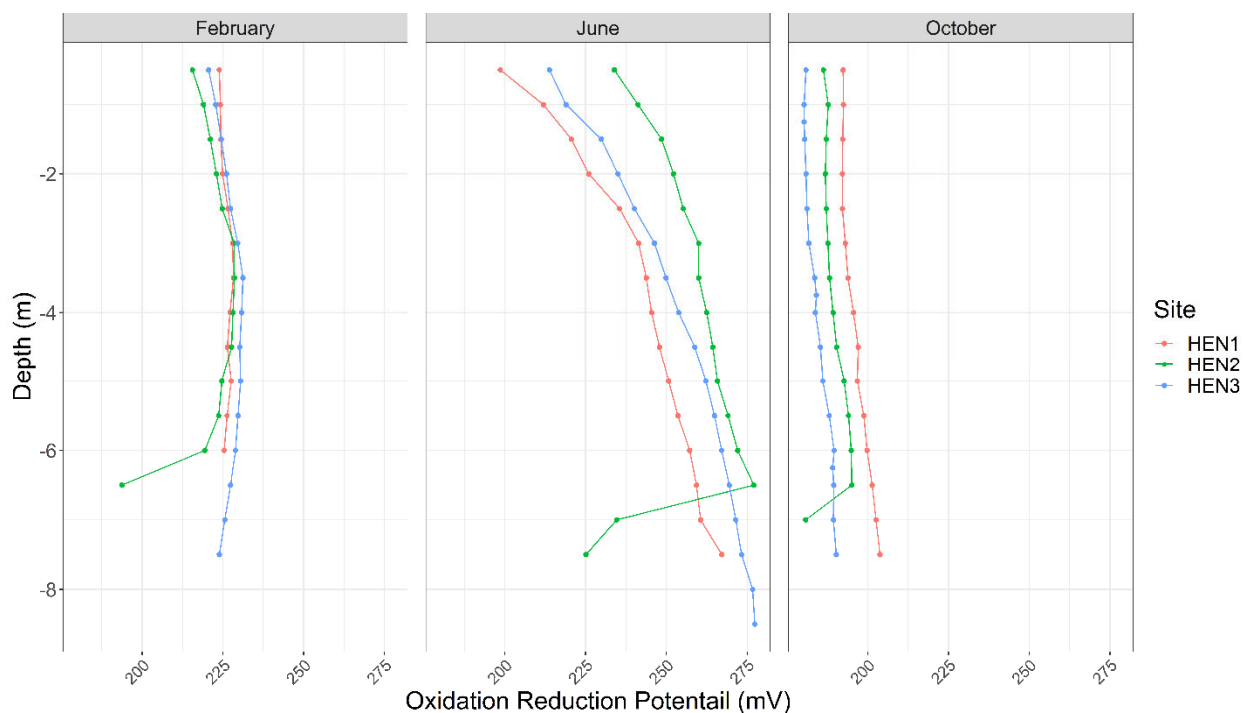


Figure 11. Seasonal oxidation reduction potential profiles comparing three Henretta Lake sites.

2.2 Water quality grab sample profiles

Total selenium, nitrate and sulphate were compared to Teck specific limits and BC water quality guidelines for both short- term acute (maximum) and long-term chronic (30-day average) limits (Table 2). The remaining water quality parameters were compared to the BC water quality guidelines for the protection of freshwater aquatic life (Appendix 1). All water quality results presented herein were analyzed by ALS unless otherwise stated. Site HEN3 selenium concentrations had both Brooks and ALS lab results presented.

Table 2. Teck specific water quality limits and BC water quality limits for the protection of freshwater aquatic life for total selenium, nitrate and sulphate.

Parameter	Teck Daily Maximum	Teck Monthly Average	BC Acute	BC Chronic
Total Selenium (µg/L)	100	85	-	2
Nitrate as N (mg/L)	21	18	32.8	3
Sulphate (mg/L)	-	577	-	429

Minimal spatial variation in water quality was observed amongst the three sites. Total selenium collected within the same month resulted in similar concentrations measured at each site (Figure 12). Slight spatial differences occurred at the 7 m depth only, in February and June. All sites measured the highest total selenium in February, followed by October and lowest concentrations measured in June. Dissolved selenium, nitrate and sulphate all showed the same seasonal trends and lack of spatial differences between sites. Therefore, for the sake of brevity, as HEN3 plots

were representative of all three water quality profiles, we have only included plots and discussions for HEN3 in the body of this report. Individual plots for HEN1 and HEN2 for total and dissolved selenium, nitrate and sulphate are found in Appendix 2.

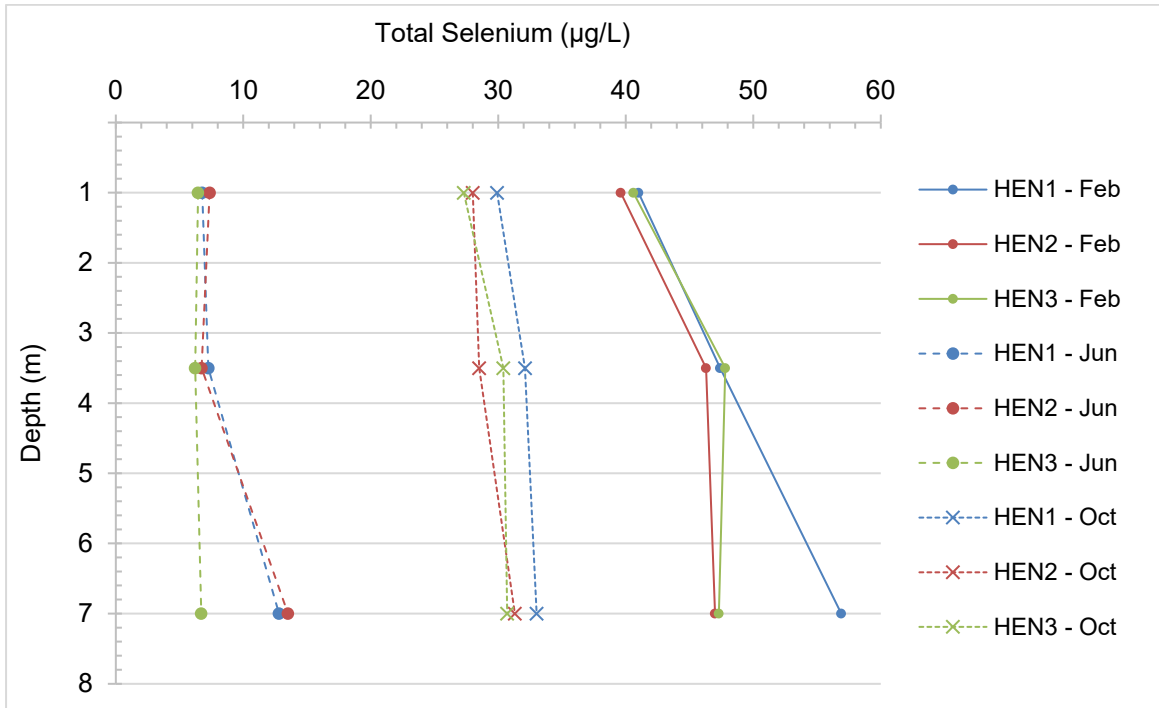


Figure 12. Seasonal total selenium profiles comparing three Henretta Lake sites.

2.2.1 Total and dissolved selenium

Higher dissolved selenium than total selenium concentrations were identified in October at all three sites, and at HEN3 in June from ALS results (Figure 13 and Appendix 2). The Brooks results for HEN3 also showed higher dissolved selenium than total selenium concentrations at varying depths in all months (Figure 14). Brooks dissolved selenium results had higher concentrations than total selenium at 7 m deep in February, at 3.5 m and 7 m deep in June, and at 1 m and 3.5 m deep in October. Brooks lab reports indicated that sample container labels were checked, and no mislabelling occurred, re-analysis of samples confirmed that dissolved selenium was greater than the corresponding total selenium, ultimately suggesting sample heterogeneity. Since both labs produced different results with higher dissolved selenium than total selenium concentrations, sampler error was ruled out.

It was unclear why dissolved selenium was higher than total selenium. The heterogeneity of the sampling environment may be the cause. However, Brooks confirmed the results were representative of the submitted samples.

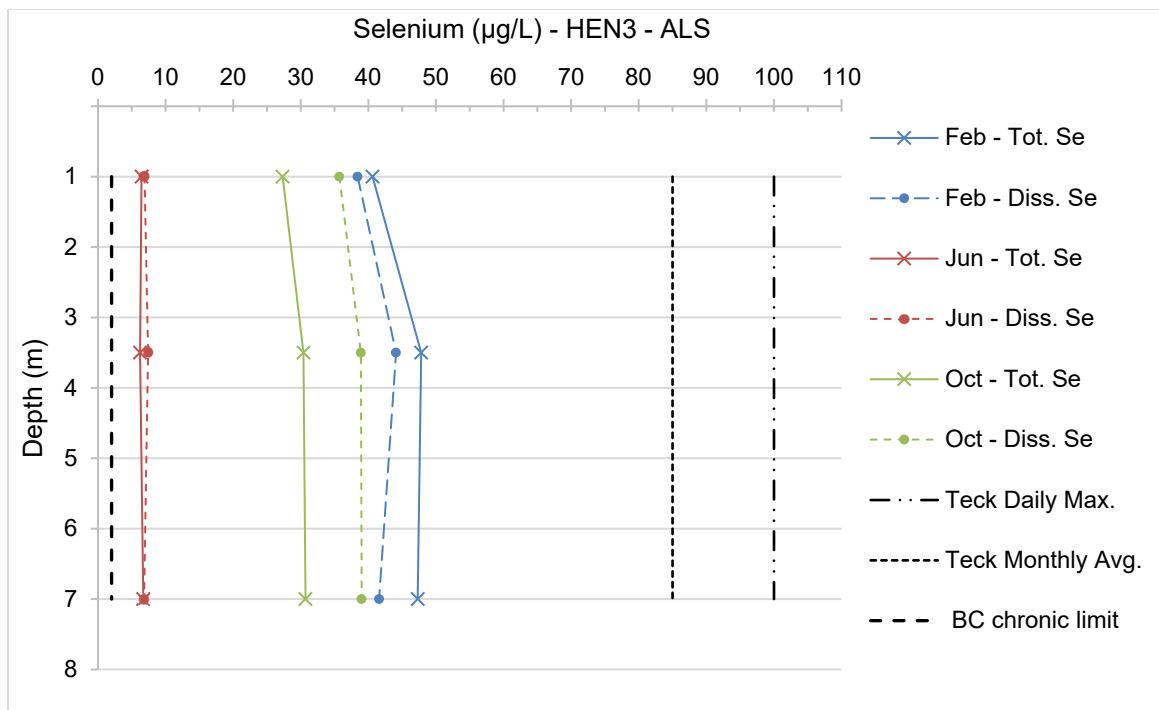


Figure 13. ALS total (Tot. Se) and dissolved selenium (Diss. Se) concentrations at site HEN3.

Chemical stratification of total and dissolved selenium was difficult to define with only three sample points (Figure 13 and Figure 14). ALS results indicated that February was the only month with chemical stratification in both total and dissolved selenium with increasing concentrations moving down through the water column at HEN3 (Figure 13). June and October had similar selenium concentrations at all three depths sampled with no chemical stratification evident. However, Brooks results indicated stratification in both February and October with increased selenium within the thermocline, which then decreased at 7 m deep back to concentrations similar to the 1 m depth (Figure 14).

One difference noted in stratification between sites was at HEN1, where selenium continued to increase at 7 m deep, ~ 10 µg/L more than concentrations at 3 m deep in HEN 2 and HEN3 (Appendix 2). The second stratification difference noted between sites was that HEN1 (12.8 µg/L total selenium) and HEN2 (13.5 µg/L total selenium) had two times higher total and dissolved selenium concentrations at 7 m deep in June than HEN 3 (6.7 µg/L total selenium) (Appendix 2). Although spatial differences amongst sites were noted, selenium concentrations exhibited similar stratification and seasonal trends at all sites.

Both ALS and Brooks total selenium concentrations measured at HEN3 exceeded the BC long-term chronic guideline for the protection of freshwater aquatic life for total selenium (2 µg/L). As well, both ALS and Brooks HEN3 total selenium concentrations were less than the Teck daily maximum (100 µg/L) and monthly average (85 µg/L) total selenium limits. The same results were observed at both HEN1 and HEN2 where total selenium exceeded the BC long-term chronic guideline for the protection of freshwater aquatic life and were less than the Teck specific total selenium limits.

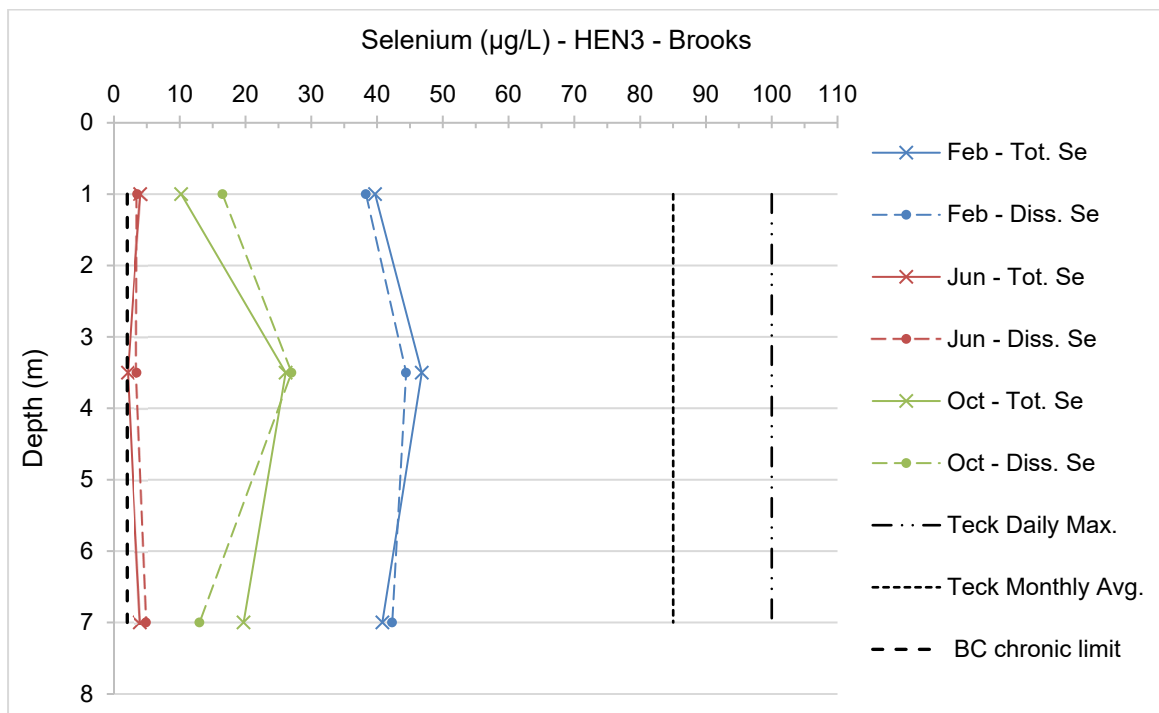


Figure 14. Brooks total (Tot. Se) and dissolved selenium (Diss. Se) concentrations at site HEN3.

The same seasonal variability was observed in total and dissolved selenium from both ALS and Brooks lab results (Figure 15). February had the highest selenium concentrations recorded likely owing to base flow conditions and ice cover, both of which prevent mixing and promote selenium accumulation. June had the lowest selenium concentrations recorded likely owing to spring turnover and high flow conditions reducing retention time of Henretta Lake and diluting concentrations with increased lake volume. October selenium increased from June owing to the onset of low flow conditions decreasing water volume and likely increasing retention time.

In-situ data indicated lake stratification in both February and October, but not in June. Lake stratification was indicative of separate layers of water that were not mixing, which supports the higher selenium concentrations measured in February and October than those measured in June. No lake stratification was evident from June *in-situ* data, which was indicative of a well-mixed homogenous environment that promoted lower selenium concentrations.

When comparing ALS and Brooks total and dissolved selenium results, ALS continuously had higher measured concentrations than Brooks. Minimal differences between February results from the two labs were observed. However, both total and dissolved selenium in June and October was noticeably higher in the ALS results than in the Brooks results.

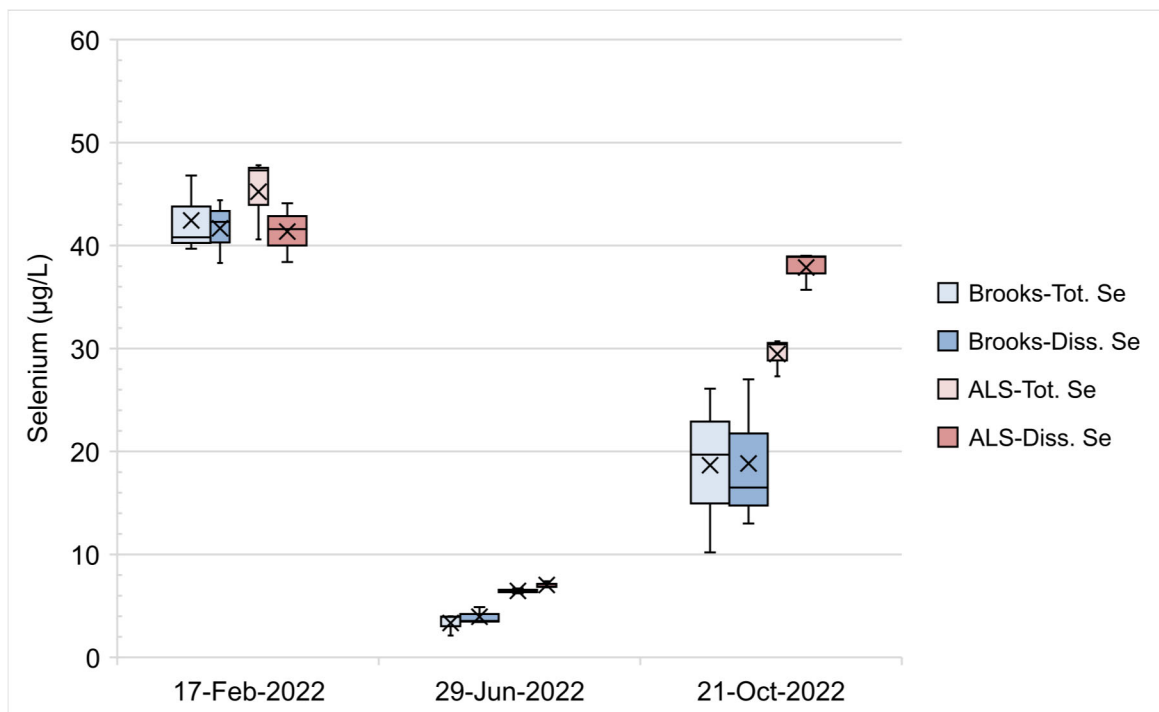


Figure 15. Seasonal variability of total and dissolved selenium measured at HEN3 by Brooks and ALS.

2.2.2 Selenium speciation

Selenium speciation analysis was performed by Brooks lab for site HEN3 only, which included dissolved forms of:

1. selenite [Se(IV)]
2. selenate [Se(VI)]
3. selenocyanate [SeCN]
4. methylseleninic acid [MeSe(IV)]
5. methaneselenonic acid [MeSe(VI)]
6. selenomethionine [SeMet]
7. selenosulfate [SeSO₃]
8. dimethylselenoxide [DMSeO]
9. unknown selenium species

Selenium speciation analyses resulted in four selenium species detected: two inorganic forms, 1) selenite, and 2) selenate, and two organic forms, 1) methylseleninic acid and 2) dimethylselenoxide. No unknown selenium species were detected.

The selenite profiles (Figure 16) indicated chemical stratification in February and October. June showed no chemical stratification for selenite with similar concentrations detected at each depth. February had more obvious selenite stratification than October with increasing concentrations moving down through the water column. October indicated selenite stratification below 3.5 m. February had the highest and most variable selenite concentrations, followed by October with June having the lowest concentrations (Figure 17). These were the same results reported for total and dissolved selenium.

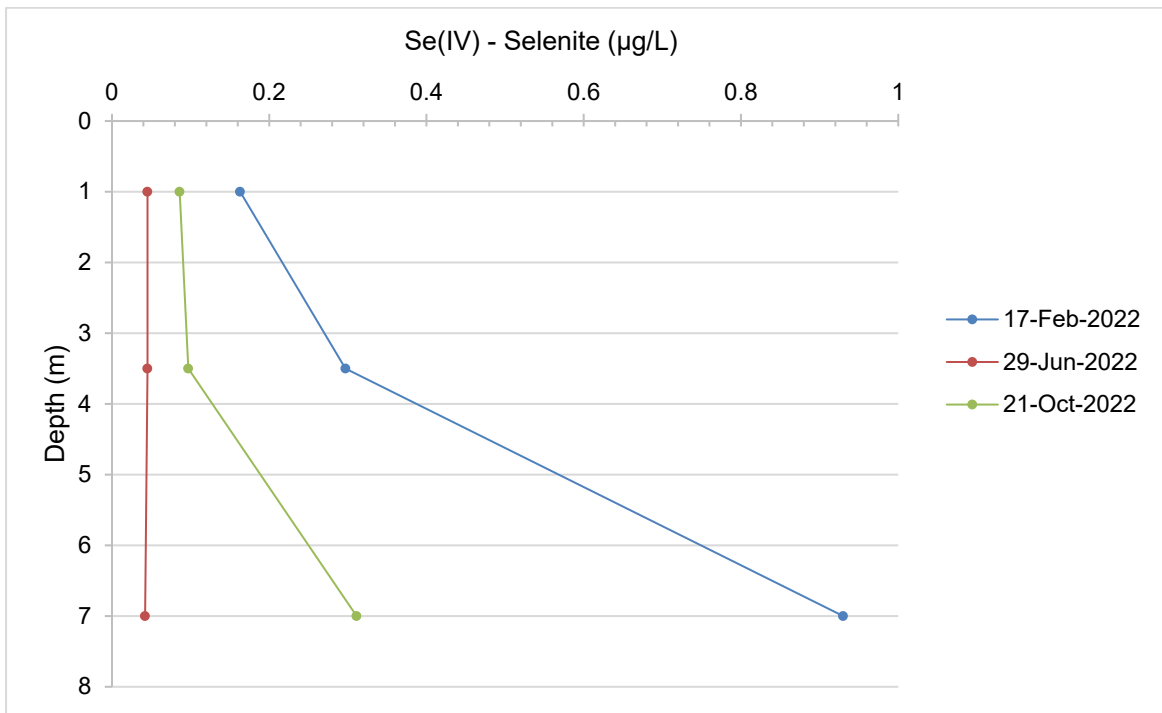


Figure 16. Selenite profiles measured at site HEN3.

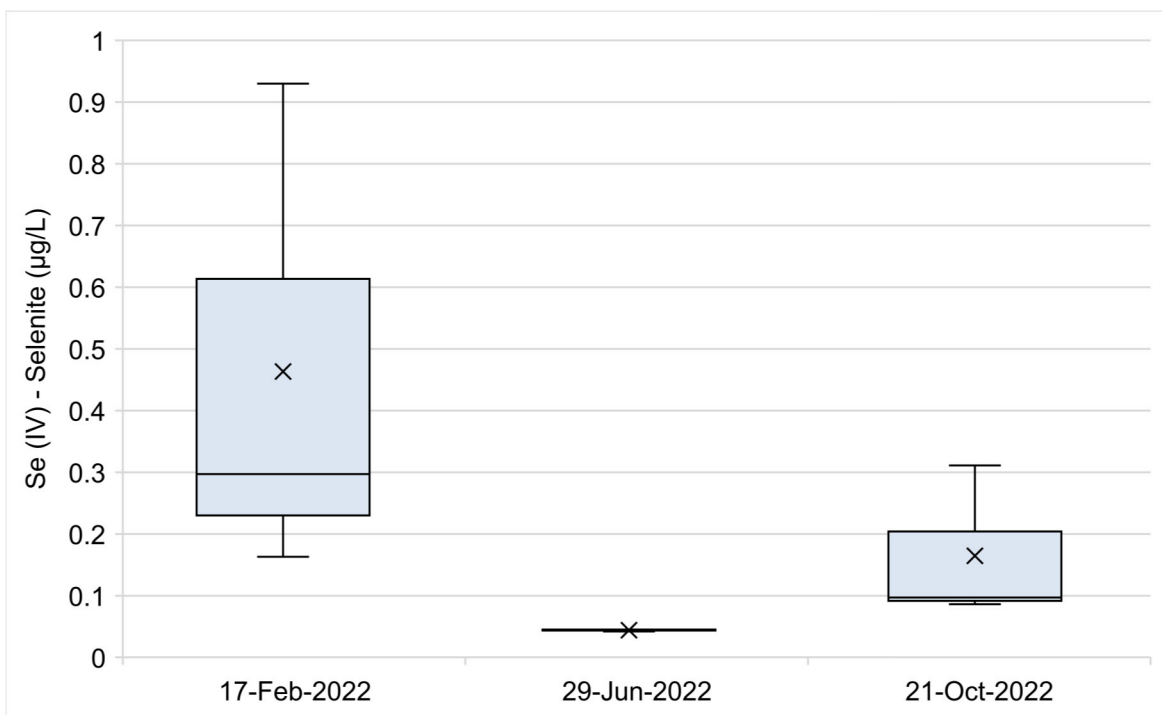


Figure 17. Seasonal variability of selenite measured at HEN3.

Selenate profiles indicated chemical stratification at the 3.5 m depth in February, where it increased by 5.2 µg/L from the surface, then decreased closer to surface concentrations at 7 m deep (Figure 18). June and October had no selenate stratification observed. Selenate concentrations were highest in February, followed by October and lowest in June (Figure 19), as was observed with selenite.

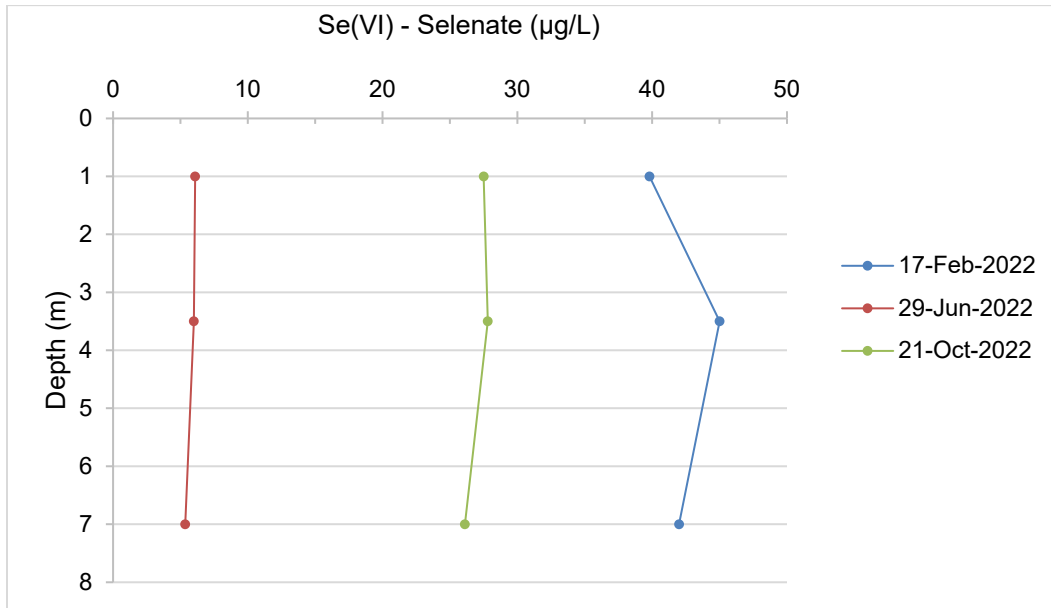


Figure 18. Selenate profiles measured at site HEN3.

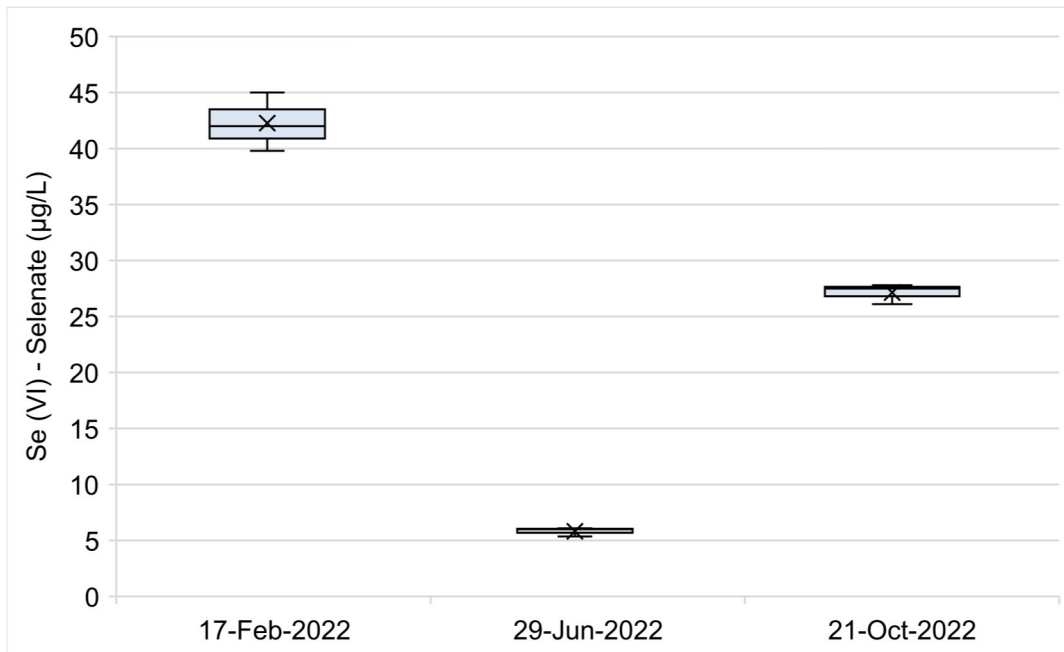


Figure 19. Seasonal variability of selenate measured at HEN3.

Methylselenenic acid profiles indicated stratification within all months sampled (Figure 20). However, each month had different stratification trends. February measured no methylselenenic acid at 1 m and 3.5 m deep. However, at 7 m deep methylselenenic acid measured 0.013 $\mu\text{g/L}$. June profiling indicated an increase in methylselenenic acid from 1 – 3.5 m deep, then decreased to zero at 7 m deep. October methylselenenic acid decreased from 1 – 3.5 m and increased to the highest concentration measured, 0.016 $\mu\text{g/L}$, at 7 m.

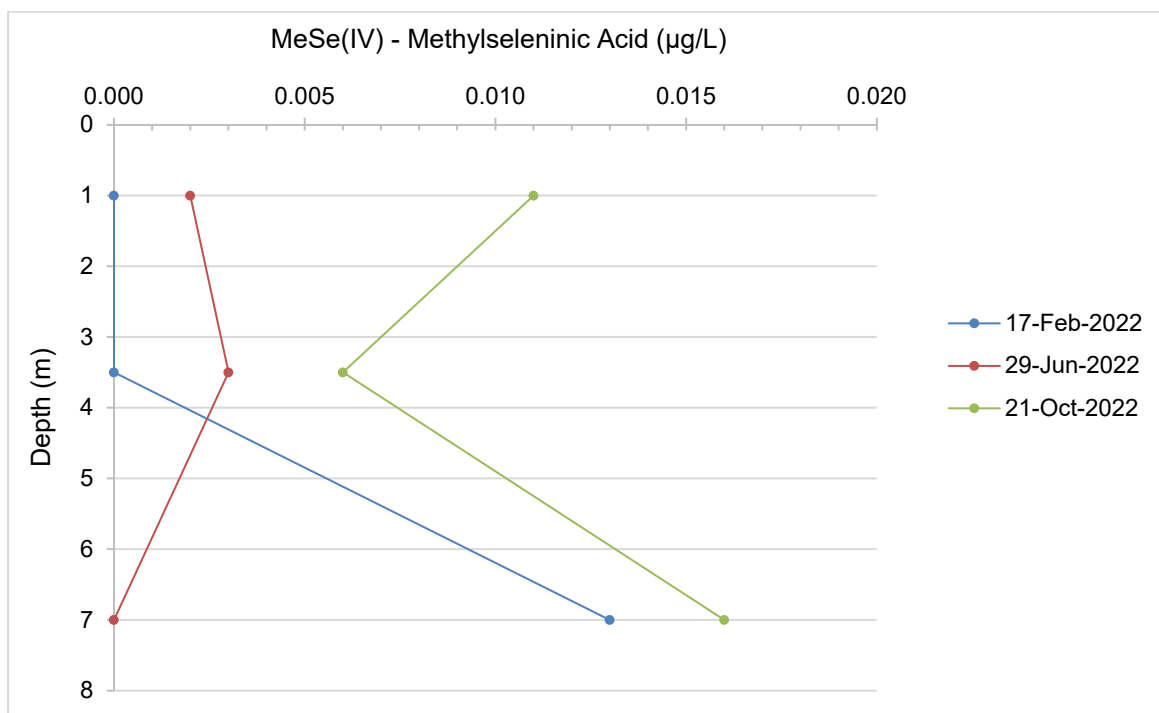


Figure 20. Methylselenenic acid profiles measured at site HEN3.

Methylselenenic acid seasonal variability was different from other water quality parameters measured. October had the highest concentrations recorded (Figure 21). Although June had methylselenenic acid concentrations detected at two depths out of three, and February only at one depth interval out of three, February’s variability in concentrations indicated it had higher overall concentrations than in June.

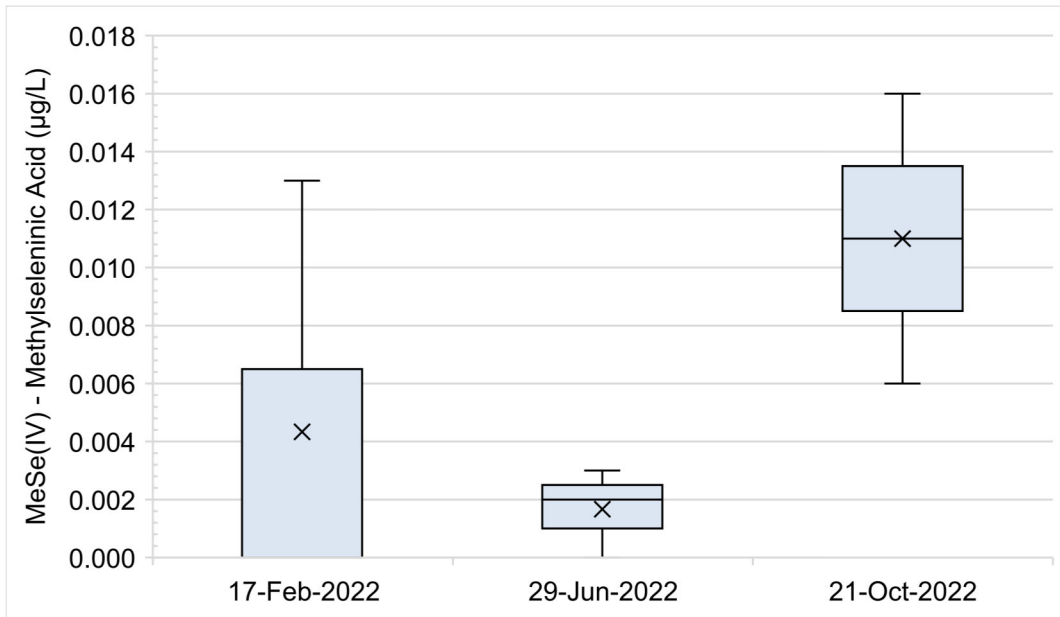


Figure 21. Seasonal variability of methylseleninic acid measured at HEN3.

Dimethylselenoxide profiles indicated stratification in February and October below 3.5 m from the surface (Figure 22). Dimethylselenoxide was not detected at any depth in June. No dimethylselenoxide was measured at 1 m in February. However, dimethylselenoxide increased moving down through the water column in February, with the highest concentrations measured at the 3.5 m and 7 m depths. October grab samples detected dimethylselenoxide at the bottom of the lake at 7 m deep only.

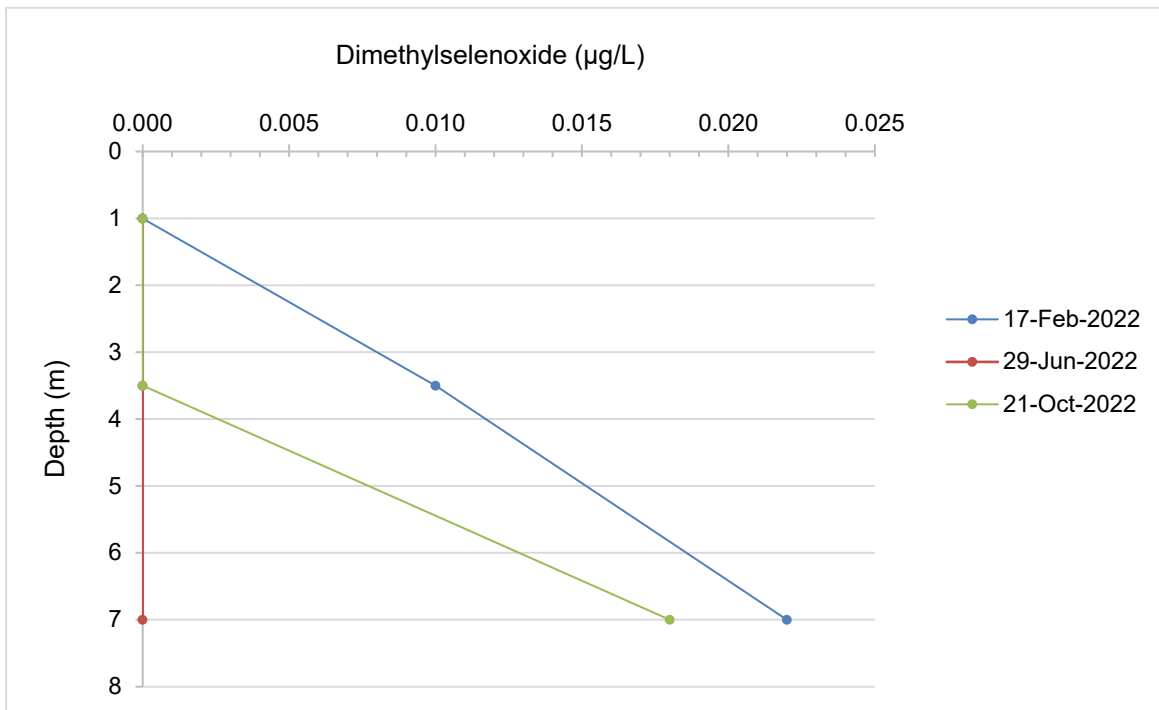


Figure 22. Dimethylselenoxide profiles measured at site HEN3.

The same seasonal variation found in total and dissolved selenium, selenite and selenate was also observed in dimethylselenoxide concentrations. February had the highest dimethylselenoxide concentrations measured, followed by October, with none detected in June (Figure 23).

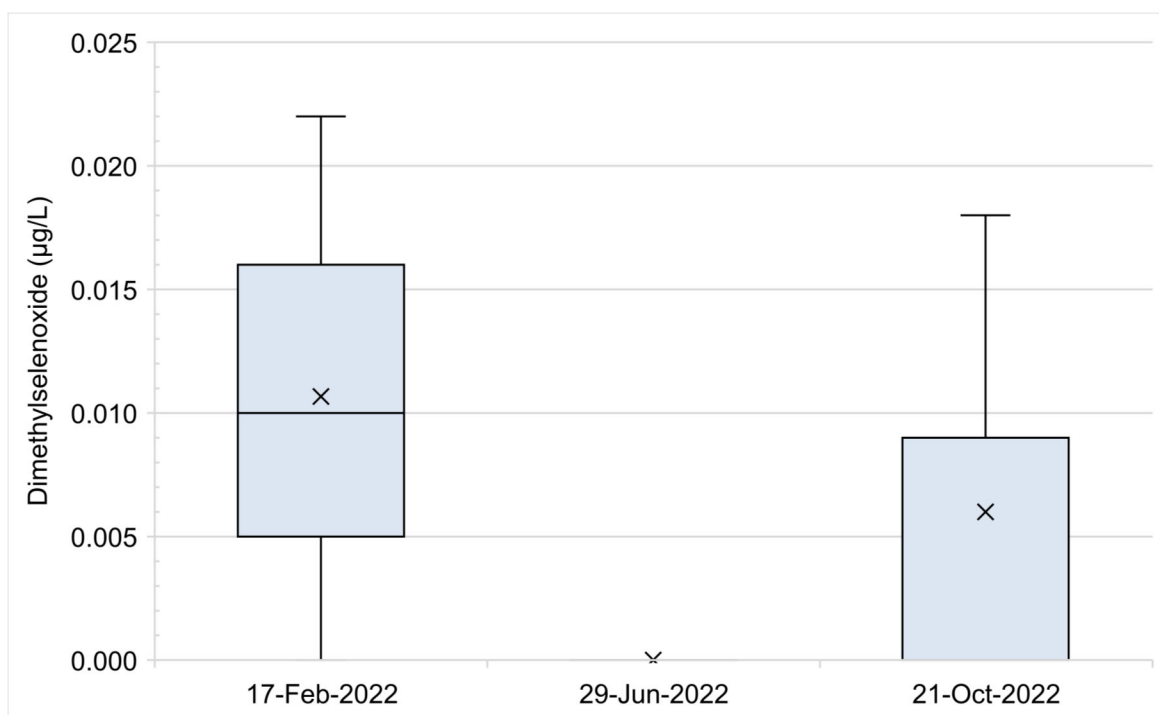


Figure 23. Seasonal variability of dimethylselenoxide measured at HEN3.

The dominant selenium species detected in Henretta Lake at all depths and within each season was selenate (Figure 24). Selenate concentrations in February were higher than dissolved selenium and were higher than total selenium at 1 m and 7 m deep. At 3.5 m deep in February total selenium was higher than selenate. In June and October, selenate concentrations were higher than both total and dissolved selenium.

Selenate concentrations ranged from 5.36 - 45 µg/L, whereas selenite ranged from 0.042 – 0.930 µg/L, methylseleninic acid from 0 – 0.016 µg/L, and dimethylselenoxide from 0 – 0.022 µg/L. Selenate and selenite were detected at all lake depths and in all months sampled. Methylseleninic acid was detected in six out of nine samples collected, at varying depths and within each month sampled. No trend in methylseleninic acid concentrations was observed. Dimethylselenoxide was identified in three out of nine samples in February and October at or below 3.5 m depth.

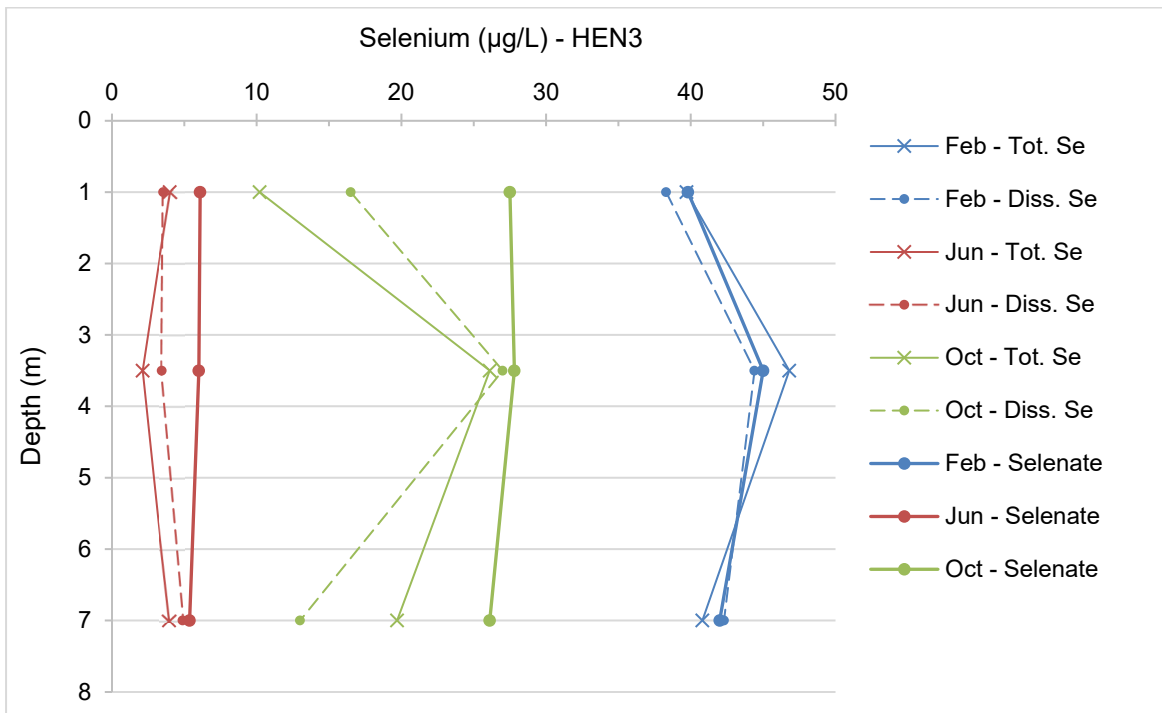


Figure 24. Comparison of total and dissolved selenium (Tot. Se and Diss. Se) profiles to selenate profiles at site HEN3.

2.2.3 Nitrate

Nitrate stratification was observed in February and October and was absent in June at all three sites in Henretta Lake (Figure 25 and Appendix 2). Nitrate stratification was more defined in February than in October with increasing concentrations moving down through the water column. The 7 m depth nitrate concentrations measured in February at all sites exceeded both Teck’s daily maximum (21 mg/L) and monthly average (18 mg/L) limits, as well as the BC long-term chronic guideline (3 mg/L). February nitrate concentrations at 1 m and 3.5 m deep exceeded the BC long-term chronic exposure guideline but fell below both Teck limits and the BC short-term acute exposure guideline. June nitrate concentrations fell below all BC and Teck limits, except at the 7 m depth at sites HEN1 (3.34 mg/L) and HEN2 (3.62 mg/L), where nitrate was slightly elevated above the BC chronic limit of 3 mg/L. October nitrate stratified below 3.5 m, where it increased by approximately 3.5 times at 7 m deep (14.1 mg/L). October nitrate concentrations exceeded the BC long-term chronic guideline but were less than both Teck limits and the BC short-term acute guideline.

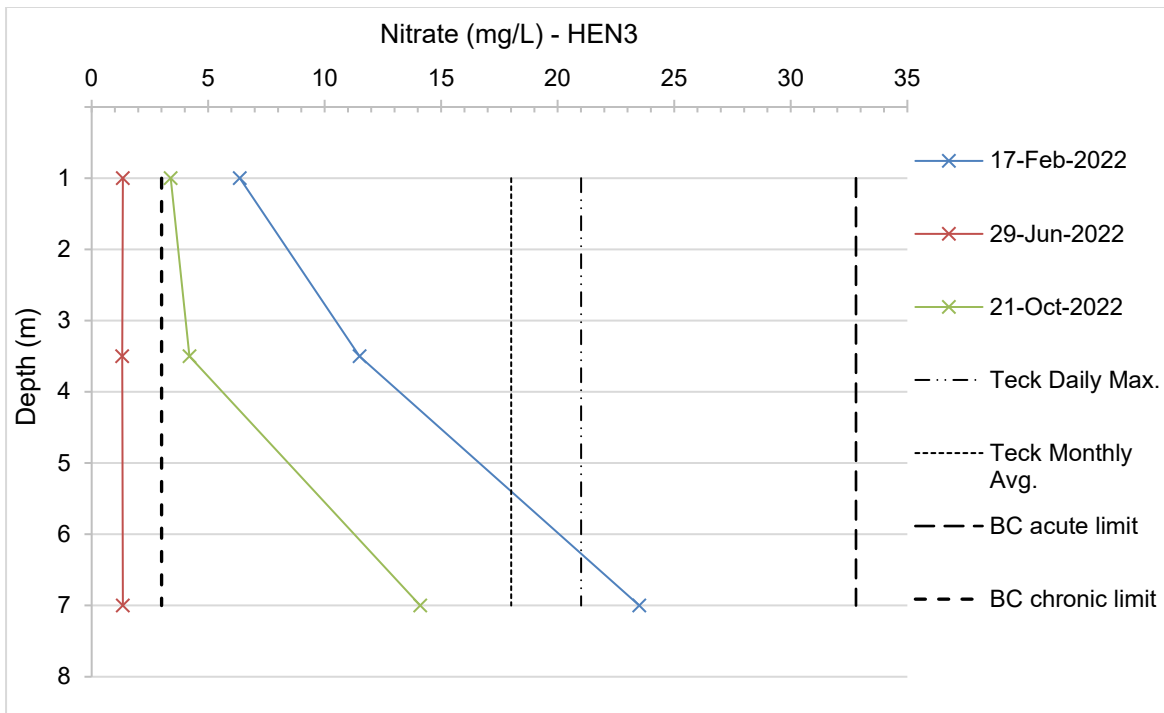


Figure 25. Nitrate profiles measured at site HEN3.

No spatial differences in nitrate concentrations occurred amongst the three sites. Temporal differences were observed in all seasons, with February having the highest nitrate concentrations detected, followed by October and June having the lowest concentrations (Figure 26).

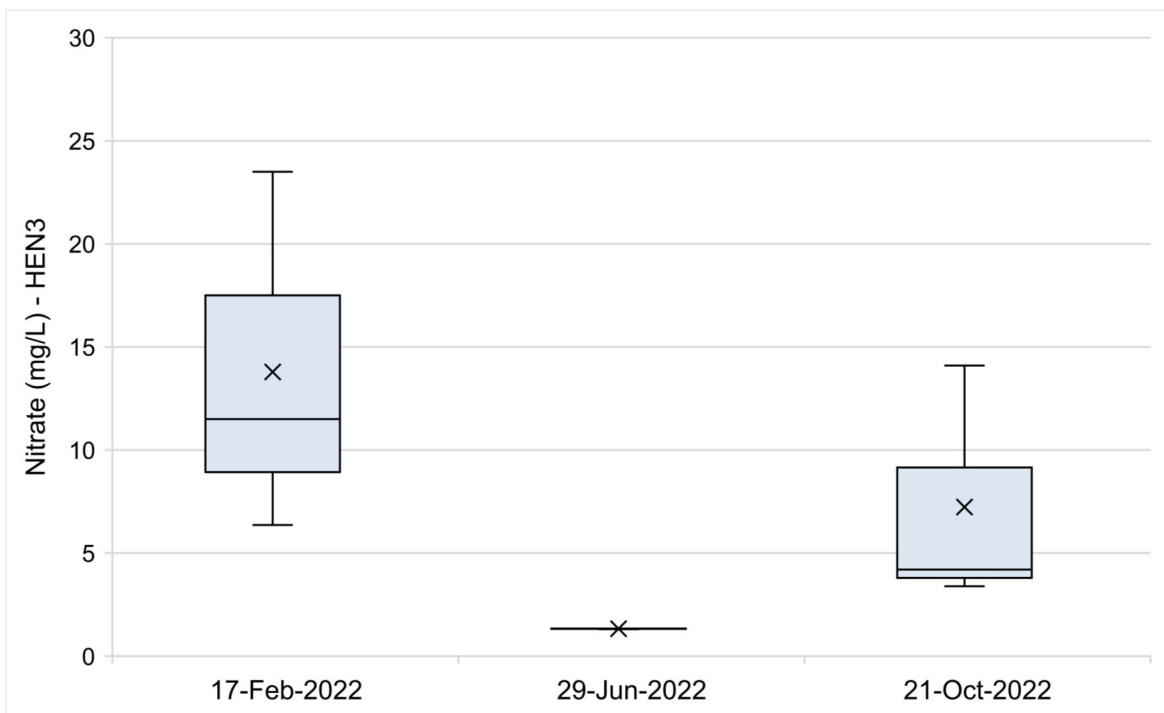


Figure 26. Seasonal variability of nitrate at HEN3.

2.2.4 Sulphate

Sulphate stratification was evident in February and October but absent in June at all sites (Figure 27 and Appendix 2). Sulphate levels increased with increasing depth in both February and October with defined stratification occurring between 3.5 – 7 m deep. February had one sulphate exceedance of the BC chronic limit (429 mg/L) at 7 m but was below the Teck monthly average limit (577 mg/L) for all sites. The 1 m and 3.5 m sulphate concentrations in February for all sites were both below the BC chronic and Teck monthly average limits. Sulphate measured in June and October were less than both the BC chronic and Teck monthly average limits at all three Henretta Lake sites. Seasonal variability detected the highest sulphate concentrations in February, followed by October, and the lowest concentrations in June (Figure 28). There were no spatial differences measured in sulphate amongst the three sites.

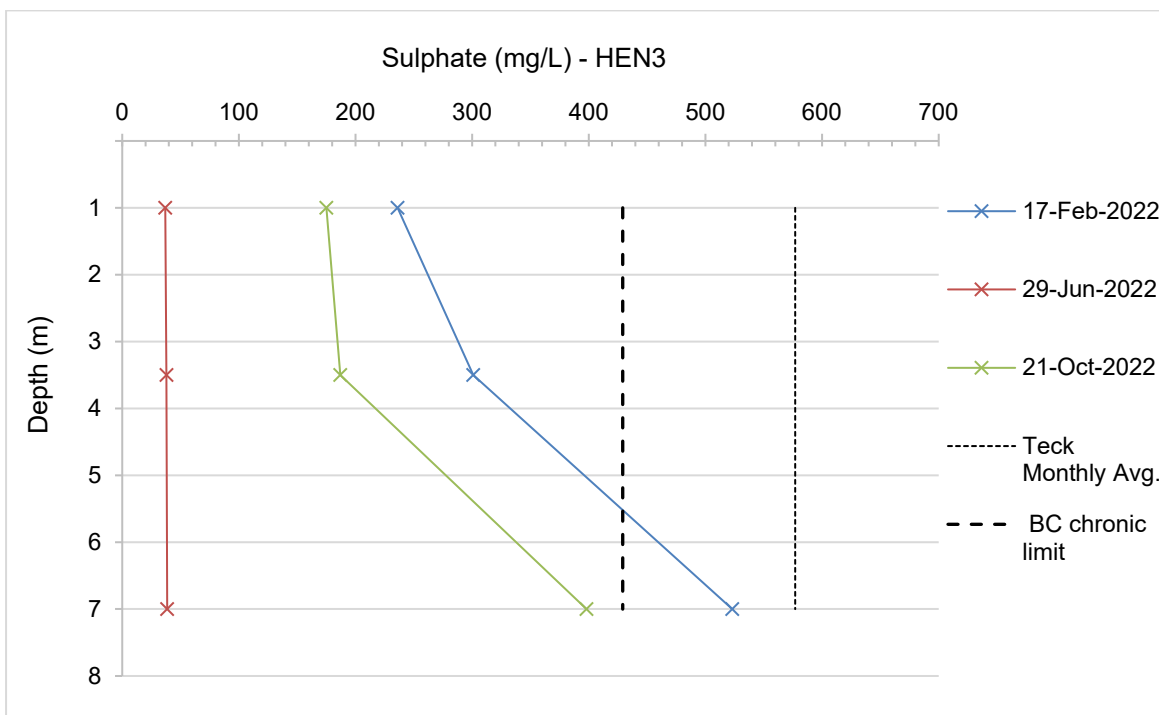


Figure 27. Sulphate profiles measured at site HEN3.

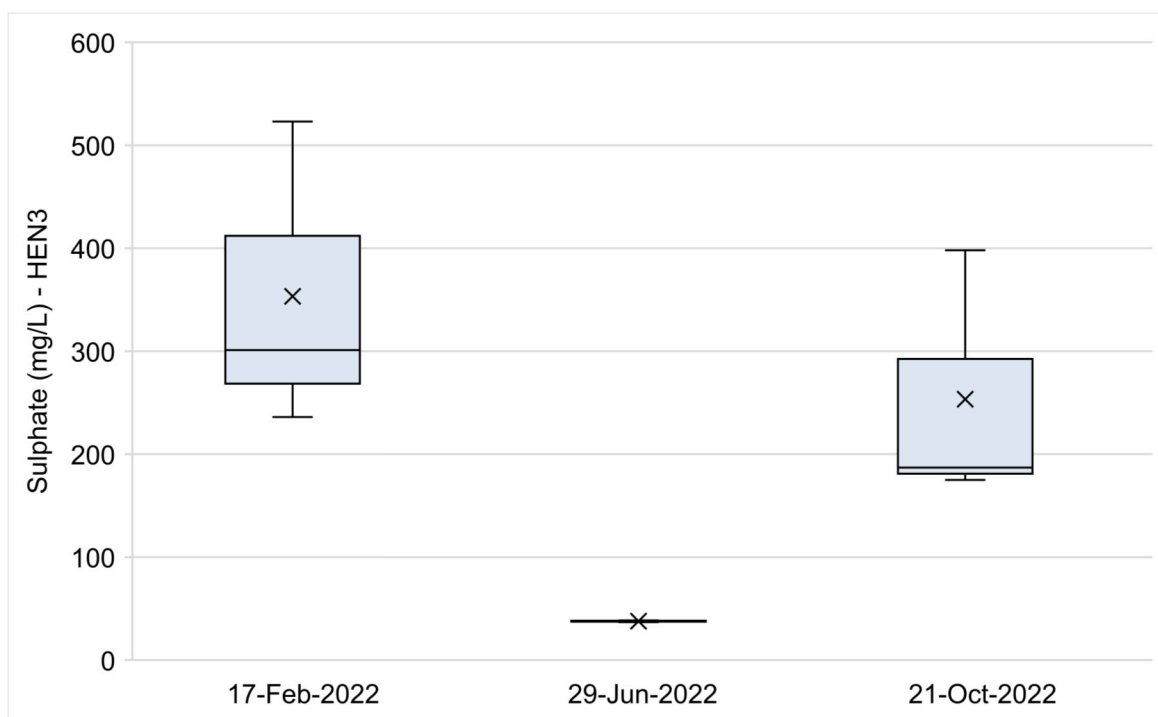


Figure 28. Seasonal variability of sulphate at site HEN3.

2.3 BC ambient water quality guideline exceedances

Five water quality parameters: temperature, DO, nitrate, sulphate, and total selenium had exceedances of the BC ambient water quality guidelines for the protection of freshwater aquatic life (Appendix 1). Temperature, nitrate, and total selenium had multiple exceedances within all sites and months sampled. DO and sulphate had exceedances only in February at 7 m deep in all three sites.

The most relevant temperature guideline, +/- 1 °C from 7.0 ° - 16.0°C, for the protection of rearing WCT was chosen for comparison to Henretta Lake temperatures. All lake temperatures recorded in February and June were < 6.0 °C and therefore did not meet the BC water quality guideline. All sites' temperatures recorded in October, at the 1 m and 3.5 m depths, were < 6.0 °C and therefore did not meet the BC water quality guideline. Only the 7 m temperatures in October fell within the temperature range for the protection of rearing WCT. Temperature in Henretta Lake was outside of the recommended range for rearing WCT in 89% of the readings collected. Since adult WCT are known to reside in Henretta Lake, the effects of those temperature exceedances of the BC water quality guideline were negligible. However, the lower than recommended temperatures may affect WCT fry and juvenile rearing in Henretta Lake.

Nitrate exceeded the BC long-term chronic water quality guideline (≤ 3 mg/L) in 74% of the samples collected. Nitrate exceeded the BC chronic guideline in all February and October samples, and at 7 m deep in June at HEN1 and HEN2. All nitrate concentrations collected in Henretta lake met the BC short-term acute water quality guideline for nitrate (≤ 32.8 mg/L).

Total selenium concentrations measured in Henretta Lake exceeded the BC long-term chronic exposure guideline ($\leq 2 \mu\text{g/L}$) in 100% of the samples collected. The mean total selenium for February was $46.0 \mu\text{g/L}$, for June = $8.2 \mu\text{g/L}$, and October = $30.1 \mu\text{g/L}$. The mean of all three Henretta Lake sites' total selenium concentrations was $28.1 \mu\text{g/L}$. All means exceeded the BC chronic guideline for total selenium. All total selenium concentrations and means met the Teck specific limits.

DO did not meet the BC water quality guideline ($\geq 5 \text{ mg/L DO}$) in 11% of the samples collected. The BC criteria for DO was not met in February at the lowest depth sampled at all sites, where hypoxic conditions persisted at $\text{DO} < 1 \text{ mg/L}$. Same as DO, sulphate exceeded the BC water quality guideline ($\leq 429 \text{ mg/L}$) in 11% of the samples collected, and only in February at the lowest depth sampled at all sites.

3 Conclusions

Objective 1: To determine if thermal and/or chemical stratification was evident in the lake.

Stratification occurred in Henretta Lake in February and October 2022. Isothermal conditions attributable to spring turnover produced no thermal or chemical stratification in June. *In-situ* parameters indicated that the epilimnion was approximately 2.5 – 3 m deep, the thermocline ranged from 1 – 3 m deep and the hypolimnion ranged from 1 – 2.5 m deep. ORP was the only water quality parameter that exhibited no stratification in any month sampled.

Water sample concentrations generally increased with lake depth when chemical stratification was observed. Total and dissolved selenium, and selenate had the highest concentrations recorded in the thermocline. Whereas, selenite, dimethylselenoxide, nitrate and sulphate had the highest concentrations measured near the bottom of the lake.

Methylseleninic acid, an organic species of selenium, was the single water quality parameter that exhibited stratification in June. Methylseleninic acid was detected in the upper layers of the lake and absent from the bottom in June. Highest concentrations were detected in October, followed by February which is opposite from all other water samples.

Objective 2: To define temporal and spatial trends in the water quality parameters.

February had the highest concentrations of any water quality parameter detected, likely as a result of base flow conditions and ice cover preventing mixing and concentrating water quality parameters. June had the lowest concentrations of any water quality parameter recorded, likely owing to mixing of the lake from spring turnover, and high flow conditions reducing retention time of Henretta Lake and diluting concentrations with increased lake volume. October water quality parameters increased from June, likely owing to the onset of low flow conditions decreasing water volume, increasing retention time and reducing mixing.

There were no spatial trends observed in Henretta Lake water quality. Water quality parameters had similar concentrations between all three sites. Therefore, minimal to no spatial differences in concentrations were observed between the three sites.

Objective 3: To determine selenium speciation found within the lake.

Selenite and selenate were the only two inorganic forms of selenium detected during selenium speciation. Two organic forms, methylseleninic acid and dimethylselenoxide, were also identified. No unknown selenium species were detected. Selenate and selenite were detected at all lake depths and in all months sampled. Methylseleninic acid was detected in 67% of samples collected, at varying depths and within each month sampled. No trend in methylseleninic acid concentrations was observed. Dimethylselenoxide was identified in 33% of samples collected and was only found in February and October at or below 3.5 m depth. The dominant selenium species detected in Henretta Lake at all depths and within each season was selenate.

Objective 4: To compare water quality results to the BC ambient water quality guidelines for the protection of freshwater aquatic life, in regards of whether any exceedances occurred.

There were five water quality parameters that did not meet the criteria for BC ambient water quality guidelines for the protection of freshwater aquatic life. Total selenium exceeded the BC guideline in 100% of the samples. Temperature did not meet the optimal criteria in 89% of the samples. Nitrate exceeded the BC guideline in 74% of the samples. DO and sulphate exceeded BC water quality guidelines in 11% of the samples collected.

Objective 5: To compare water quality results to Teck's specific water quality limits for total selenium, nitrate and sulphate from Permit 107517 (the Permit) for the FRO compliance point (FR FRABCH) closest to Henretta Lake.

Total selenium and sulphate met both the daily maximums and monthly averages of the Teck specific limits in all months sampled. Nitrate exceeded both the daily maximum and monthly average Teck specific limits at all sites in February at the 7 m depth. The remaining nitrate concentrations measured met the Teck specific limits.

4 Literature Cited

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Appendix 1. Water Quality Data

Appendix 1. Water Quality Data

Date	Site	Depth (m)	<i>In Situ</i>	Time	Temperature	Dissolved Oxygen	Specific Conductance	Conductivity	pH	Oxidation Reduction Potential	Routine and Nutrients	Time	conductivity	acidity (as CaCO3)	alkalinity, bicarbonate (as CaCO3)	alkalinity, bicarbonate (as HCO3)
		RDL		n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	2	2	1	1
		units		n/a	°C	mg/L	µS/cm	µS/cm	N/A	mV		n/a	µS/cm	mg/L	mg/L	mg/L
17-Feb-2022	HEN1	1		10:41	0.3	9.73	751	395.4	7.67	224.2		14:50	740	3.4	156	190
		3.5		11:00	2.3	5.61	1039	588	7.34	228.3		15:02	1020	6.9	195	238
		7		11:22	3.3	0.74	1508	884	7.17	225.4		15:12	1420	8.9	249	304
	HEN2	1		14:00	1.2	9.60	739	403	7.88	219		11:09	735	2.9	161	197
		3.5		14:19	2.3	5.43	1052	597	7.45	228.6		11:50	1000	4.8	190	232
		7		14:46	3.7	0.32	1572	933	7.19	193.7		12:15	1440	10.2	259	316
	HEN3	1		11:34	0.9	9.60	739	400.2	7.86	222.8		13:05	736	3.2	159	194
		3.5		11:51	2.3	5.55	1044	591	7.44	231.2		13:38	914	5.1	183	224
		7		12:15	4.0	0.33	1636	979	7.13	225.6		14:10	1410	9.5	262	320
29-Jun-2022	HEN1	1		13:55	4.7	10.39	274.1	167.6	8.05	211.9		13:50	267	<2.0	108	132
		3.5		15:03	4.7	10.35	282.6	173.1	8.02	243.8		14:05	270	<2.0	113	138
		7		15:25	4.7	10.17	328.7	201.5	7.93	260.6		15:00	344	<2.0	133	162
	HEN2	1		12:28	4.7	10.35	280	171.3	7.97	241.2		12:30	270	<2.0	126	154
		3.5		12:43	4.6	10.33	282	172.3	7.98	260		13:00	272	<2.0	127	155
		7		13:11	4.6	9.90	363	221	7.78	234.6		13:10	356	<2.0	134	164
	HEN3	1		10:28	4.8	10.39	271.2	165.2	7.61	218.9		10:30	261	<2.0	118	144
		3.5		10:43	4.6	10.37	274.3	167.2	7.70	249.9		10:55	264	<2.0	113	138
		7		11:06	4.6	10.34	276	168.2	7.75	271.5		11:15	267	<2.0	108	132
21-Oct-2022	HEN1	1		14:30	5.0	10.56	577	356.6	7.93	192.5		14:20	585	<2.0	152	185
		3.5		14:41	5.5	9.78	647	405.8	7.88	193.9		14:38	637	<2.0	156	191
		7		14:59	8.0	11.56	1059	715	7.51	202.6		15:00	1020	3.4	207	252
	HEN2	1		12:50	4.9	10.58	574.6	354.7	7.87	187.8		12:50	578	<2.0	136	166
		3.5		13:02	5.5	9.44	655.3	411.4	7.82	188.2		13:25	613	<2.0	148	181
		7		13:18	8.2	9.94	1046	710	7.37	180.8		13:35	1050	3	226	275
	HEN3	1		11:13	4.9	10.43	573	352.8	7.94	180.3		11:00	580	<2.0	139	170
		3.5		11:26	5.2	10.12	628.1	390.4	7.92	183.6		11:35	612	<2.0	138	169
		7		11:45	8.0	11.52	1065	719	7.46	189.4		11:59	1060	2.8	218	266
BC water quality guidelines for the protection of freshwater aquatic life					WCT: +/- 1°C of 9.0 - 12.0°C for incubation/ spawning and 7.0 - 16.0°C for rearing	≥ 5 mg/L all life stages or ≥ 9 mg/L embryo/ alevin stages	-	-	6.5 - 9.0	-		-	-	-	-	-

Bolded values represent exceedances of BC water quality guidelines.

Appendix 1. Water Quality Data

Date	Site	Depth (m)	alkalinity, carbonate (as CO3)	alkalinity, carbonate (as CaCO3)	alkalinity, hydroxide (as CaCO3)	alkalinity, hydroxide (as OH)	alkalinity, total (as CaCO3)	hardness (as CaCO3), dissolved	oxidation-reduction potential [ORP]	pH	solids, total dissolved [TDS]	solids, total suspended [TSS]	turbidity	Kjeldahl nitrogen, total [TKN]	ammonia, total (as N)	bromide	chloride
		RDL	1	1	1	1	1	0.5	0.1	0.1	10	1	0.1	0.05	0.005	0.05	0.1
		units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mV	pH units	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L
17-Feb-2022	HEN1	1	<1.0	<1.0	<1.0	<1.0	156	396	406	8.01	512	<1.0	0.16	0.318	0.0133	<0.050	0.36
		3.5	<1.0	<1.0	<1.0	<1.0	195	575	325	7.82	757	1.7	0.21	0.467	0.071	<0.250	0.57
		7	<1.0	<1.0	<1.0	<1.0	249	852	333	7.68	1140	19.4	7.9	0.517	0.169	<0.250	0.76
	HEN2	1	<1.0	<1.0	<1.0	<1.0	161	395	379	8.02	512	<1.0	0.12	0.463	0.0126	<0.050	0.38
		3.5	<1.0	<1.0	<1.0	<1.0	190	554	342	7.87	735	<1.0	0.22	0.197	0.0641	<0.250	0.60
		7	<1.0	<1.0	<1.0	<1.0	259	721	316	7.66	1100	1.4	0.47	<0.050	0.264	<0.250	0.83
	HEN3	1	<1.0	<1.0	<1.0	<1.0	159	382	384	8.02	528	<1.0	0.36	0.212	0.0133	<0.050	0.37
		3.5	<1.0	<1.0	<1.0	<1.0	183	496	295	7.90	661	<1.0	0.18	0.292	0.0428	<0.050	0.43
		7	<1.0	<1.0	<1.0	<1.0	262	794	321	7.66	1100	1.2	0.32	0.639	0.33	<0.250	0.87
29-Jun-2022	HEN1	1	<1.0	<1.0	<1.0	<1.0	108	139	380	7.63	176	3.4	2.64	0.101	0.0064	<0.050	<0.10
		3.5	<1.0	<1.0	<1.0	<1.0	113	143	335	7.66	180	2.9	2.76	0.139	0.0061	<0.050	<0.10
		7	<1.0	<1.0	<1.0	<1.0	133	185	291	7.75	236	2.3	2.8	0.361	<0.0050	<0.050	<0.10
	HEN2	1	<1.0	<1.0	<1.0	<1.0	126	146	344	7.65	182	3.2	2.94	0.319	<0.0050	<0.050	<0.10
		3.5	<1.0	<1.0	<1.0	<1.0	127	147	345	7.70	185	3.3	3.32	0.23	<0.0050	<0.050	<0.10
		7	<1.0	<1.0	<1.0	<1.0	134	186	340	7.74	240	5.5	3.19	0.322	0.0057	<0.050	0.10
	HEN3	1	<1.0	<1.0	<1.0	<1.0	118	137	328	7.70	171	3.6	2.89	0.171	<0.0050	<0.050	<0.10
		3.5	<1.0	<1.0	<1.0	<1.0	113	138	347	6.91	170	3.4	3.03	0.146	<0.0050	<0.050	<0.10
		7	<1.0	<1.0	<1.0	<1.0	108	140	343	7.80	172	2.9	2.72	0.131	<0.0050	<0.050	<0.10
21-Oct-2022	HEN1	1	<1.0	<1.0	<1.0	<1.0	152	331	305	8.23	364	<1.0	0.16	0.31	<0.0050	<0.050	0.28
		3.5	<1.0	<1.0	<1.0	<1.0	156	362	306	8.26	422	<1.0	0.23	0.34	<0.0050	<0.050	0.29
		7	<1.0	<1.0	<1.0	<1.0	207	617	307	8.20	730	3.3	1.28	0.695	0.0469	<0.250	0.64
	HEN2	1	3.6	6	<1.0	<1.0	142	312	307	8.31	373	<1.0	0.2	0.324	<0.0050	<0.050	0.28
		3.5	2.2	3.6	<1.0	<1.0	152	342	308	8.27	390	<1.0	0.22	0.267	0.0051	<0.050	0.29
		7	<1.0	<1.0	<1.0	<1.0	226	644	270	8.16	770	2.5	1.18	0.63	0.0809	<0.250	0.62
	HEN3	1	5	8.4	<1.0	<1.0	148	320	276	8.36	406	2.9	0.2	0.27	<0.0050	<0.050	0.33
		3.5	4.7	7.8	<1.0	<1.0	146	353	280	8.34	405	<1.0	0.19	0.284	<0.0050	<0.050	0.28
		7	<1.0	<1.0	<1.0	<1.0	218	659	285	8.26	787	2.9	1.5	0.724	0.122	<0.250	0.69
BC water quality guidelines for the protection of freshwater aquatic life			-	-	-	-	≥ 20 mg/L	-	-	6.5 - 9.0	-	Δ from background ≤ 25 mg/L	Δ from background ≤ 8 NTU	-	Calculated based on pH and temperature: range ≤ 4.95 - 20.4 mg/L	-	≤ 600 mg/L

Bolded values represent exceedances of BC water quality guidelines.

Appendix 1. Water Quality Data

Date	Site	Depth (m)	fluoride	nitrate (as N)	nitrite (as N)	phosphate, ortho-, dissolved (as P)	phosphorus, total	Sulphate (as SO4)	carbon, dissolved organic [DOC]	carbon, total organic [TOC]	anion sum	cation sum	ion balance (APHA)	ion balance (cations/anions)
		RDL	0.02	0.005	0.001	0.001	0.002	0.3	0.5	0.5	0.1	0.1	0.01	0.01
		units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%	%
17-Feb-2022	HEN1	1	0.222	6.36	0.0039	<0.0010	<0.0020	235	<0.50	<0.50	8.49	7.98	3.1	94
		3.5	0.222	14.5	0.0146	<0.0010	0.0025	349	<0.50	<0.50	12.2	11.6	2.52	95.1
		7	0.237	26.3	0.0268	<0.0010	0.0268	538	<0.50	0.54	18.1	17.2	2.55	95
	HEN2	1	0.223	6.35	0.0052	<0.0010	<0.0020	235	<0.50	<0.50	8.59	7.97	3.74	92.8
		3.5	0.215	14.4	0.0136	<0.0010	0.0022	354	<0.50	<0.50	12.2	11.2	4.27	91.8
		7	0.238	26.1	0.036	<0.0010	0.0053	559	<0.50	<0.50	18.7	14.6	12.3	78.1
	HEN3	1	0.220	6.36	0.0046	<0.0010	0.0027	236	<0.50	<0.50	8.57	7.69	5.41	89.7
		3.5	0.227	11.5	0.0092	<0.0010	<0.0020	301	<0.50	<0.50	10.8	10	3.85	92.6
		7	0.230	23.5	0.0312	<0.0010	0.004	523	<0.50	<0.50	17.8	16	5.32	89.9
29-Jun-2022	HEN1	1	0.156	1.34	0.0014	0.0011	0.0054	37.2	1.63	1.23	3.04	2.8	4.11	92.1
		3.5	0.152	1.44	0.001	0.0011	0.0048	39.2	1.79	2.41	3.18	2.89	4.78	90.9
		7	0.157	3.34	0.0016	<0.0010	0.0044	65.9	1.85	2.74	4.28	3.74	6.73	87.4
	HEN2	1	0.150	1.48	<0.0010	0.0017	0.005	39.8	2	2.22	3.46	2.95	7.96	85.3
		3.5	0.154	1.54	<0.0010	<0.0010	0.006	40.5	1.64	2.27	3.5	2.97	8.19	84.8
		7	0.158	3.62	<0.0010	<0.0010	0.0056	69.8	1.12	1.24	4.4	3.76	7.84	85.4
	HEN3	1	0.149	1.34	0.0046	0.0016	0.0056	36.9	1.22	1.28	3.23	2.77	7.67	85.8
		3.5	0.146	1.31	0.0162	0.0021	0.0058	37.9	1.18	1.22	3.15	2.8	5.88	88.9
		7	0.152	1.34	0.0181	0.0018	0.0027	38.5	1.25	1.17	3.06	2.82	4.08	92.2
21-Oct-2022	HEN1	1	0.254	3.47	0.0035	<0.0010	<0.0020	176	<0.50	<0.50	6.97	6.66	2.27	95.6
		3.5	0.257	4.76	0.0041	<0.0010	<0.0020	197	<0.50	<0.50	7.58	7.3	1.88	96.3
		7	0.261	13.5	0.0161	<0.0010	0.0075	377	0.96	1.17	13	12.4	2.36	95.4
	HEN2	1	0.253	3.39	0.0033	<0.0010	<0.0020	175	<0.50	<0.50	6.74	6.27	3.61	93
		3.5	0.252	4.20	0.0039	<0.0010	<0.0020	189	<0.50	<0.50	7.29	6.89	2.82	94.5
		7	0.265	14.1	0.017	<0.0010	0.0074	397	1.07	1.33	13.8	13	2.98	94.2
	HEN3	1	0.254	3.39	0.0034	<0.0010	<0.0020	175	<0.50	<0.50	6.87	6.44	3.23	93.7
		3.5	0.251	4.20	0.0037	<0.0010	<0.0020	187	<0.50	<0.50	7.13	7.11	0.14	99.7
		7	0.263	14.1	0.0172	<0.0010	0.0097	398	1.1	1.6	13.7	13.3	1.48	97.1
BC water quality guidelines for the protection of freshwater aquatic life			Calculated based on hardness: range ≤ 1.46 - 2.2 mg/L	short-term acute ≤ 32.8 mg/L long-term chronic ≤ 3 mg/L	≤ 0.06 mg/L	-	-	Calculated based on hardness: range ≤ 309 - ≤ 429 mg/L	30-day median ± 20% of the median background levels	30-day median ± 20% of the median background levels	-	-	-	-

Bolded values represent exceedances of BC water quality guidelines.

Appendix 1. Water Quality Data

Date	Site	Depth (m)	Total Metals	aluminum, total	antimony, total	arsenic, total	barium, total	beryllium, total	bismuth, total	boron, total	cadmium, total	calcium, total	chromium, total	cobalt, total	copper, total	iron, total	lead, total
		RDL		0.003	0.0001	0.0001	0.0001	0.02	0.00005	0.01	0.005	0.05	0.0001	0.1	0.0005	0.01	0.00005
		units		mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	µg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L
17-Feb-2022	HEN1	1		<0.0030	0.0001	0.00018	0.0346	<0.020	<0.000050	0.011	0.0407	102	0.00016	<0.10	<0.00050	<0.010	<0.000050
		3.5		<0.0030	0.00015	0.00023	0.0300	<0.020	<0.000050	0.017	0.0677	132	0.00028	0.18	<0.00050	0.032	<0.000050
		7		0.0978	0.00017	0.00032	0.0305	<0.020	<0.000050	0.027	0.121	190	0.0005	0.56	<0.00050	0.266	0.000132
	HEN2	1		<0.0030	0.0001	0.0002	0.0329	<0.020	<0.000050	0.01	0.0412	95	0.00014	<0.10	0.0006	<0.010	0.000059
		3.5		<0.0030	0.00015	0.0002	0.0294	<0.020	<0.000050	0.016	0.0627	129	0.00013	0.15	<0.00050	0.029	<0.000050
		7		0.0136	0.00015	0.00026	0.0348	<0.020	<0.000050	0.022	0.0957	169	0.00026	0.52	<0.00050	0.083	<0.000050
	HEN3	1		0.0043	0.00011	0.00021	0.0335	<0.020	<0.000050	<0.010	0.035	101	0.00017	<0.10	<0.00050	0.012	<0.000050
		3.5		<0.0030	0.00014	0.00021	0.0322	<0.020	<0.000050	0.015	0.0535	125	0.00014	0.12	<0.00050	0.020	<0.000050
		7		<0.0030	0.00015	0.00025	0.0371	<0.020	<0.000050	0.025	0.0951	194	0.00042	0.45	<0.00050	0.051	0.000062
29-Jun-2022	HEN1	1		0.022	<0.00010	0.0001	0.0178	<0.020	<0.000050	<0.010	0.0216	39.1	0.00013	<0.10	<0.00050	0.020	<0.000050
		3.5		0.0231	<0.00010	0.00011	0.0181	<0.020	<0.000050	<0.010	0.0176	39.1	0.00016	<0.10	<0.00050	0.018	<0.000050
		7		0.0193	<0.00010	0.0001	0.0176	<0.020	<0.000050	<0.010	0.0164	46	0.00019	<0.10	<0.00050	0.019	<0.000050
	HEN2	1		0.0239	<0.00010	<0.00010	0.0174	<0.020	<0.000050	<0.010	0.0123	39.3	0.00014	<0.10	<0.00050	0.021	<0.000050
		3.5		0.0208	<0.00010	0.00012	0.0175	<0.020	<0.000050	<0.010	0.0159	40	0.00014	<0.10	<0.00050	0.019	<0.000050
		7		0.0258	<0.00010	0.0001	0.0177	<0.020	<0.000050	<0.010	0.016	48.8	0.00017	<0.10	<0.00050	0.030	<0.000050
	HEN3	1		0.0242	<0.00010	0.00012	0.017	<0.020	<0.000050	<0.010	0.0154	38.7	0.00016	<0.10	<0.00050	0.02	<0.000050
		3.5		0.0226	<0.00010	0.00012	0.0169	<0.020	<0.000050	<0.010	0.0142	38.5	0.00011	<0.10	<0.00050	0.024	0.000056
		7		0.0258	<0.00010	0.00012	0.0174	<0.020	<0.000050	<0.010	0.011	39.6	0.00015	<0.10	<0.00050	0.022	<0.000050
21-Oct-2022	HEN1	1		<0.0030	<0.00010	0.00015	0.0316	<0.020	<0.000050	<0.010	0.0355	81	0.00013	<0.10	<0.00050	<0.010	<0.000050
		3.5		0.0031	<0.00010	0.00017	0.0308	<0.020	<0.000050	<0.010	0.0473	87.2	0.00014	<0.10	<0.00050	<0.010	<0.000050
		7		0.004	0.00013	0.00014	0.0353	<0.020	<0.000050	0.018	0.0708	135	0.00013	0.12	<0.00050	0.035	<0.000050
	HEN2	1		0.0031	<0.00010	0.00011	0.0316	<0.020	<0.000050	<0.010	0.0258	80.1	0.00025	<0.10	<0.00050	<0.010	<0.000050
		3.5		0.0042	<0.00010	0.00015	0.0324	<0.020	<0.000050	<0.010	0.036	82.8	0.00012	<0.10	<0.00050	<0.010	<0.000050
		7		<0.0030	0.00013	0.0002	0.0374	<0.020	<0.000050	0.017	0.0899	144	0.00018	<0.10	<0.00050	0.032	<0.000050
	HEN3	1		0.0036	<0.00010	0.00012	0.0307	<0.020	<0.000050	<0.010	0.0294	79.8	0.00012	<0.10	<0.00050	<0.010	<0.000050
		3.5		0.0035	<0.00010	0.0001	0.0315	<0.020	<0.000050	<0.010	0.0299	84.4	0.00016	<0.10	<0.00050	<0.010	<0.000050
		7		0.0032	0.00015	0.00015	0.0393	<0.020	<0.000050	0.018	0.0668	154	0.0001	0.14	<0.00050	0.047	<0.000050
BC water quality guidelines for the protection of freshwater aquatic life				-	≤ 9 µg/L for Antimony (III)	≤ 5 µg/L	≤ 1 mg/L	≤ 0.13 µg/L	-	≤ 1.2 mg/L	-	-	Cr (III) ≤ 8.9 µg/L Cr(VI) ≤ 1 µg/L	Short-term acute ≤ 110 µg/L Long-term chronic ≤ 4 µg/L	-	≤ 1 mg/L	Calculated based on hardness: range of ≤ 8.06 - ≤ 52 µg/L for Long-term chronic

Bolded values represent exceedances of BC water quality guidelines.

Appendix 1. Water Quality Data

Date	Site	Depth (m)	lithium, total	magnesium, total	manganese, total	mercury, total	molybdenum, total	nickel, total	potassium, total	selenium, total	silicon, total	silver, total	sodium, total	strontium, total	sulfur, total
		RDL	0.001	0.005	0.0001	0.000005	0.00005	0.0005	0.05	0.05	0.1	0.00001	0.05	0.0002	0.5
		units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L
17-Feb-2022	HEN1	1	0.0173	44.3	0.00989	<0.00050	0.00107	0.00137	1.26	41.0	1.59	<0.000010	0.849	0.154	85.5
		3.5	0.0325	66.1	0.04	<0.00050	0.00109	0.00396	2.15	47.4	1.75	<0.000010	1.09	0.154	123
		7	0.0535	101	0.125	<0.00050	0.00115	0.00778	3.23	56.9	2.32	<0.000010	1.35	0.178	187
	HEN2	1	0.0161	41.9	0.00908	<0.00050	0.000948	0.0015	1.2	39.6	1.56	<0.000010	0.834	0.148	82.1
		3.5	0.0303	65.1	0.0376	<0.00050	0.00109	0.0038	2.09	46.3	1.71	<0.000010	1.06	0.151	123
		7	0.0425	89.6	0.151	<0.00050	0.00108	0.00685	2.79	47.0	2.26	<0.000010	1.31	0.17	168
	HEN3	1	0.0169	43.4	0.00943	<0.00050	0.00103	0.00143	1.23	40.6	1.59	<0.000010	0.845	0.152	83.2
		3.5	0.0288	59.9	0.0263	<0.00050	0.00119	0.00294	1.89	47.8	1.74	<0.000010	1.01	0.16	113
		7	0.0482	99.5	0.171	<0.00050	0.00118	0.0077	3.04	47.3	2.51	<0.000010	1.39	0.187	193
29-Jun-2022	HEN1	1	0.0044	12.1	0.00265	<0.0000050	0.000519	0.00056	0.419	6.78	1.38	<0.000010	0.365	0.0658	14.3
		3.5	0.0046	12.3	0.00266	<0.0000050	0.000616	0.00063	0.448	7.26	1.37	<0.000010	0.369	0.0681	14.9
		7	0.0088	17.7	0.00325	<0.0000050	0.000598	0.00097	0.629	12.8	1.35	<0.000010	0.416	0.0724	24.1
	HEN2	1	0.0045	12.4	0.00284	<0.0000050	0.000538	0.0006	0.427	7.36	1.39	<0.000010	0.369	0.0671	14.8
		3.5	0.0046	12.2	0.00279	<0.0000050	0.000594	0.0006	0.427	6.73	1.38	<0.000010	0.362	0.0668	14.8
		7	0.0093	18.8	0.0045	<0.0000050	0.000588	0.00108	0.631	13.5	1.37	<0.000010	0.418	0.073	26.2
	HEN3	1	0.0041	12	0.00248	<0.0000050	0.000557	0.00063	0.403	6.45	1.34	<0.000010	0.357	0.0672	13.8
		3.5	0.0042	11.6	0.00274	<0.0000050	0.000516	0.00063	0.397	6.22	1.29	<0.000010	0.347	0.0647	13.3
		7	0.0044	12.7	0.00278	<0.0000050	0.000594	0.00064	0.423	6.70	1.37	<0.000010	0.366	0.0679	14.8
21-Oct-2022	HEN1	1	0.0111	37.4	0.00285	<0.0000050	0.000984	0.00101	0.856	29.9	1.58	<0.000010	0.714	0.131	67.7
		3.5	0.0143	41.1	0.00375	<0.0000050	0.000952	0.00117	1.02	32.1	1.58	<0.000010	0.753	0.139	75.3
		7	0.0331	81.6	0.0163	<0.0000050	0.00106	0.00378	1.99	33.0	1.44	<0.000010	1.19	0.148	137
	HEN2	1	0.0108	35.2	0.00261	<0.0000050	0.000984	0.00105	0.812	28.0	1.55	<0.000010	0.67	0.134	65.4
		3.5	0.0122	38.3	0.00355	<0.0000050	0.000951	0.00126	0.954	28.5	1.54	<0.000010	0.742	0.132	70.5
		7	0.0331	76.1	0.0109	<0.0000050	0.000989	0.00406	1.98	31.3	1.48	<0.000010	1.18	0.154	144
	HEN3	1	0.0108	35.4	0.0027	<0.0000050	0.000968	0.00112	0.808	27.3	1.52	<0.000010	0.698	0.138	65.2
		3.5	0.0131	38.3	0.00335	<0.0000050	0.000961	0.00128	0.97	30.4	1.6	<0.000010	0.735	0.138	72.7
		7	0.0345	81.1	0.0169	<0.0000050	0.00115	0.00438	2.04	30.7	1.49	0.000359	1.23	0.166	150
BC water quality guidelines for the protection of freshwater aquatic life			-	-	Calculated based on hardness: range of ≤ 1.21 - ≤ 4.35 mg/L for Long-term chronic	≤ 0.02 µg/L	Short-term acute ≤ 46 mg/L Long-term chronic ≤ 7.6 mg/L	Calculated based on hardness: range of ≤ 121 - ≤ 150 µg/L	-	≤ 2 µg/L	-	Calculated based on hardness: Short-term acute ≤ 3 µg/L Long-term chronic ≤ 1.5 µg/L	-	-	-

Bolded values represent exceedances of BC water quality guidelines.

Appendix 1. Water Quality Data

Date	Site	Depth (m)	thallium, total	tin, total	titanium, total	uranium, total	vanadium, total	zinc, total	Selenium Speciation	Time	Dimethyl-selenoxide	MeSe(IV) - methyl-seleninic acid	Methane-selenonic Acid	Se(IV) - selenite	Se(VI) - selenate	SeCN - seleno-cyanate
		RDL	0.00001	0.0001	0.0003	0.00001	0.0005	0.003		n/a	0.01	0.01	0.01	0.02	0.01	0.01
		units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	n/a	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
17-Feb-2022	HEN1	1	<0.000010	<0.00010	<0.00030	0.00186	<0.00050	<0.0030		-	-	-	-	-	-	-
		3.5	0.000011	<0.00010	<0.00030	0.00278	<0.00050	0.0034		-	-	-	-	-	-	-
		7	0.000021	<0.00010	<0.00240	0.00431	<0.00050	0.0078		-	-	-	-	-	-	-
	HEN2	1	<0.000010	0.00011	<0.00030	0.00174	<0.00050	0.0089		-	-	-	-	-	-	-
		3.5	0.000012	<0.00010	<0.00030	0.00265	<0.00050	0.0053		-	-	-	-	-	-	-
		7	0.000018	<0.00010	<0.00030	0.00362	<0.00050	0.0072		-	-	-	-	-	-	-
	HEN3	1	<0.000010	<0.00010	<0.00030	0.00185	<0.00050	0.0032		13:10	0.00	0.00	0.00	0.163	39.8	0.00
		3.5	<0.000010	<0.00010	<0.00030	0.00251	<0.00050	0.0034		13:38	0.010	0.00	0.00	0.297	45.0	0.00
		7	0.000024	<0.00010	<0.00030	0.00432	<0.00050	0.0081		14:10	0.022	0.013	0.00	0.930	42.0	0.00
29-Jun-2022	HEN1	1	<0.000010	<0.00010	<0.00060	0.000589	<0.00050	<0.0030		-	-	-	-	-	-	-
		3.5	<0.000010	<0.00010	0.00043	0.000613	<0.00050	<0.0030		-	-	-	-	-	-	-
		7	<0.000010	<0.00010	<0.00030	0.000824	<0.00050	<0.0030		-	-	-	-	-	-	-
	HEN2	1	<0.000010	<0.00010	<0.00060	0.000611	<0.00050	<0.0030		-	-	-	-	-	-	-
		3.5	<0.000010	<0.00010	<0.00030	0.000621	<0.00050	<0.0030		-	-	-	-	-	-	-
		7	<0.000010	<0.00010	<0.00060	0.000856	<0.00050	<0.0030		-	-	-	-	-	-	-
	HEN3	1	<0.000010	<0.00010	<0.00060	0.000577	<0.00050	<0.0030		10:30	0.00	0.002	0.00	0.045	6.09	0.00
		3.5	<0.000010	<0.00010	<0.00030	0.000574	<0.00050	<0.0030		10:55	0.00	0.003	0.00	0.045	6.00	0.00
		7	<0.000010	<0.00010	0.00039	0.000602	<0.00050	<0.0030		11:15	0.00	0.00	0.00	0.042	5.36	0.00
21-Oct-2022	HEN1	1	<0.000010	<0.00010	<0.00030	0.00144	<0.00050	<0.0030		-	-	-	-	-	-	-
		3.5	<0.000010	<0.00010	<0.00030	0.00155	<0.00050	<0.0030		-	-	-	-	-	-	-
		7	0.000014	<0.00010	<0.00030	0.00284	<0.00050	0.0049		-	-	-	-	-	-	-
	HEN2	1	<0.000010	<0.00010	<0.00030	0.00141	<0.00050	<0.0030		-	-	-	-	-	-	-
		3.5	<0.000010	<0.00010	<0.00030	0.00146	<0.00050	<0.0030		-	-	-	-	-	-	-
		7	0.000017	<0.00010	<0.00030	0.00289	<0.00050	0.0047		-	-	-	-	-	-	-
	HEN3	1	<0.000010	<0.00010	<0.00030	0.00144	<0.00050	<0.0030		11:00	0.00	0.011	0.00	0.086	27.5	0.00
		3.5	<0.000010	<0.00010	<0.00030	0.00155	<0.00050	<0.0030		11:35	0.00	0.006	0.00	0.097	27.8	0.00
		7	0.000015	<0.00010	<0.00030	0.00296	<0.00050	0.005		11:59	0.018	0.016	0.00	0.311	26.1	0.00
BC water quality guidelines for the protection of freshwater aquatic life			≤ 0.8 µg/L	-	-	≤ 8.5 µg/L	-	Calculated based on hardness: Short-term acute ≤ 68.2 - 341 µg/L Long-term chronic ≤ 42.8 - 188 µg/L		-	-	-	-	-	-	-

Bolded values represent exceedances of BC water quality guidelines.

Appendix 1. Water Quality Data

Date	Site	Depth (m)	SeMe - seleno-methionine	Seleno-Sulphate	Unknown Selenium Species	Total Selenium	Dissolved Selenium	Dissolved Metals	aluminum, dissolved	antimony, dissolved	arsenic, dissolved	barium, dissolved	beryllium, dissolved	bismuth, dissolved	boron, dissolved	cadmium, dissolved	calcium, dissolved	
		RDL	0.01	0.01	0.01	0.165	0.165		0.001	0.0001	0.0001	0.0001	0.02	0.00005	0.01	0.005	0.05	
		units	ug/L	ug/L	ug/L	ug/L	ug/L		mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	µg/L	mg/L	
17-Feb-2022	HEN1	1	-	-	-	-	-		0.001	<0.00010	<0.00010	0.0338	<0.020	<0.000050	<0.010	0.0314	93.2	
		3.5	-	-	-	-	-		<0.0010	0.00014	<0.00010	0.0304	<0.020	<0.000050	0.017	0.0614	129	
		7	-	-	-	-	-		0.001	0.00014	<0.00010	0.0306	<0.020	<0.000050	0.026	0.0787	184	
	HEN2	1	-	-	-	-	-	-		0.0011	<0.00010	<0.00010	0.0336	<0.020	<0.000050	<0.010	0.039	91.2
		3.5	-	-	-	-	-	-		0.0011	0.00014	<0.00010	0.0299	<0.020	<0.000050	0.015	0.0475	122
		7	-	-	-	-	-	-		<0.0010	0.00012	<0.00010	0.0322	<0.020	<0.000050	0.02	0.0548	154
	HEN3	1	0.00	0.00	0.00	39.7	38.3		<0.0010	<0.00010	<0.00010	0.0331	<0.020	<0.000050	<0.010	0.0217	88.9	
		3.5	0.00	0.00	0.00	46.8	44.4		0.0012	0.00011	<0.00010	0.0311	<0.020	<0.000050	0.014	0.0478	111	
		7	0.00	0.00	0.00	40.8	42.3		<0.0010	0.00013	<0.00010	0.0345	<0.020	<0.000050	0.022	0.0787	175	
29-Jun-2022	HEN1	1	-	-	-	-	-		0.0033	<0.00010	<0.00010	0.0164	<0.020	<0.000050	<0.010	0.0108	36.8	
		3.5	-	-	-	-	-		0.0029	<0.00010	<0.00010	0.0165	<0.020	<0.000050	<0.010	0.011	37.6	
		7	-	-	-	-	-		0.0036	<0.00010	<0.00010	0.017	<0.020	<0.000050	<0.010	0.0117	46.2	
	HEN2	1	-	-	-	-	-	-		0.003	<0.00010	<0.00010	0.0168	<0.020	<0.000050	<0.010	0.015	38.2
		3.5	-	-	-	-	-	-		0.0033	<0.00010	<0.00010	0.0166	<0.020	<0.000050	<0.010	0.0105	38.5
		7	-	-	-	-	-	-		0.0033	<0.00010	<0.00010	0.0167	<0.020	<0.000050	<0.010	0.0196	45.8
	HEN3	1	0.00	0.00	0.00	3.99	3.54		0.0039	<0.00010	<0.00010	0.0164	<0.020	<0.000050	<0.010	0.0127	36.3	
		3.5	0.00	0.00	0.00	2.12	3.44		0.0035	<0.00010	<0.00010	0.0162	<0.020	<0.000050	<0.010	0.0087	36.5	
		7	0.00	0.00	0.00	3.94	4.88		0.0035	<0.00010	<0.00010	0.0163	<0.020	<0.000050	<0.010	0.01	36.9	
21-Oct-2022	HEN1	1	-	-	-	-	-		<0.0010	<0.00010	<0.00010	0.0324	<0.020	<0.000050	<0.010	0.0299	79.4	
		3.5	-	-	-	-	-		<0.0010	<0.00010	<0.00010	0.0326	<0.020	<0.000050	<0.010	0.0408	85.1	
		7	-	-	-	-	-		<0.0010	0.00014	0.00011	0.0353	<0.020	<0.000050	0.017	0.0505	139	
	HEN2	1	-	-	-	-	-	-		<0.0010	<0.00010	<0.00010	0.0297	<0.020	<0.000050	<0.010	0.0287	75
		3.5	-	-	-	-	-	-		<0.0010	<0.00010	<0.00010	0.0327	<0.020	<0.000050	<0.010	0.0375	80
		7	-	-	-	-	-	-		<0.0010	0.00013	0.00011	0.039	<0.020	<0.000050	0.017	0.0602	142
	HEN3	1	0.00	0.00	0.00	10.2	16.5		<0.0010	<0.00010	<0.00010	0.0303	<0.020	<0.000050	<0.010	0.0256	77.3	
		3.5	0.00	0.00	0.00	26.1	27.0		<0.0010	<0.00010	<0.00010	0.0329	<0.020	<0.000050	<0.010	0.0285	82.5	
		7	0.00	0.005	0.00	19.7	13.0		<0.0010	0.00014	0.0001	0.0403	<0.020	<0.000050	0.017	0.0561	147	
BC water quality guidelines for the protection of freshwater aquatic life			-	-	-	≤ 2 µg/L			Calculated based on pH: Short-term acute ≤ 0.1 mg/L Long-term chronic ≤ 0.05 mg/L	-	-	-	-	-	-	Calculated based on hardness: Short-term acute ≤ 0.813 - 2.8 µg/L Long-term chronic ≤ 0.267 - 0.46 µg/L	-	

Bolded values represent exceedances of BC water quality guidelines.

Appendix 1. Water Quality Data

Date	Site	Depth (m)	chromium, dissolved	cobalt, dissolved	copper, dissolved	iron, dissolved	lead, dissolved	lithium, dissolved	magnesium, dissolved	manganese, dissolved	mercury, dissolved	molybdenum, dissolved
		RDL	0.0001	0.1	0.0002	0.01	0.00005	0.001	0.005	0.0001	0.000005	0.00005
		units	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Feb-2022	HEN1	1	<0.00010	<0.00010	<0.00020	<0.010	<0.000050	0.0158	39.7	0.00877	<0.0000050	0.000961
		3.5	<0.00010	0.00015	<0.00020	<0.010	<0.000050	0.0334	61.4	0.0376	<0.0000050	0.00109
		7	<0.00010	0.00039	<0.00020	0.011	<0.000050	0.0538	95.3	0.112	<0.0000050	0.00108
	HEN2	1	<0.00010	<0.00010	0.0006	<0.010	0.000057	0.0161	40.7	0.00873	<0.0000050	0.000957
		3.5	0.00015	0.00014	0.00025	0.01	<0.000050	0.0307	60.5	0.0353	<0.0000050	0.00106
		7	<0.00010	0.00046	<0.00020	0.025	<0.000050	0.041	81.8	0.138	<0.0000050	0.00102
	HEN3	1	<0.00010	<0.00010	0.00022	<0.010	<0.000050	0.0155	38.8	0.00874	<0.0000050	0.000921
		3.5	<0.00010	<0.00010	0.00043	<0.010	<0.000050	0.0264	53.2	0.0228	<0.0000050	0.00103
		7	<0.00010	0.00037	0.00021	0.017	<0.000050	0.046	86.7	0.155	<0.0000050	0.00103
29-Jun-2022	HEN1	1	<0.00010	<0.10	<0.00020	<0.010	<0.000050	0.0043	11.4	0.00136	<0.0000050	0.000522
		3.5	<0.00010	<0.10	<0.00020	<0.010	<0.000050	0.0046	12	0.00152	<0.0000050	0.000562
		7	0.0001	<0.10	<0.00020	<0.010	<0.000050	0.0087	17	0.00208	<0.0000050	0.000552
	HEN2	1	<0.00010	<0.10	<0.00020	<0.010	<0.000050	0.0047	12.3	0.00158	<0.0000050	0.000538
		3.5	<0.00010	<0.10	<0.00020	<0.010	<0.000050	0.0047	12.4	0.00159	<0.0000050	0.000544
		7	0.00011	<0.10	<0.00020	<0.010	<0.000050	0.0091	17.5	0.00303	<0.0000050	0.000578
	HEN3	1	<0.00010	<0.10	0.00044	<0.010	<0.000050	0.0042	11.3	0.00139	<0.0000050	0.00053
		3.5	<0.00010	<0.10	<0.00020	<0.010	<0.000050	0.0043	11.5	0.00145	<0.0000050	0.000547
		7	<0.00010	<0.10	<0.00020	<0.010	<0.000050	0.0044	11.6	0.00141	<0.0000050	0.000544
21-Oct-2022	HEN1	1	<0.00010	<0.10	<0.00020	<0.010	<0.000050	0.0116	32.2	0.00241	<0.0000050	0.000916
		3.5	0.00012	<0.10	<0.00020	<0.010	<0.000050	0.0143	36.4	0.00317	<0.0000050	0.000966
		7	<0.00010	<0.10	<0.00020	<0.010	<0.000050	0.034	65.5	0.00222	<0.0000050	0.000972
	HEN2	1	0.00011	<0.10	<0.00020	<0.010	<0.000050	0.0106	30.2	0.00221	<0.0000050	0.000864
		3.5	<0.00010	<0.10	<0.00020	<0.010	<0.000050	0.0127	34.6	0.00286	<0.0000050	0.000902
		7	<0.00010	<0.10	<0.00020	<0.010	0.00188	0.0329	70.3	0.00333	<0.0000050	0.000998
	HEN3	1	0.00011	<0.10	<0.00020	<0.010	<0.000050	0.011	30.8	0.00218	<0.0000050	0.000876
		3.5	0.00013	<0.10	<0.00020	<0.010	<0.000050	0.0134	35.7	0.00256	<0.0000050	0.00095
		7	<0.00010	<0.10	<0.00020	<0.010	<0.000050	0.034	70.9	0.00364	<0.0000050	0.000994
BC water quality guidelines for the protection of freshwater aquatic life			-	-	-	≤ 0.35 mg/L	-	-	-	-	-	-

Bolded values represent exceedances of BC water quality guidelines.

Appendix 1. Water Quality Data

Date	Site	Depth (m)	nickel, dissolved	potassium, dissolved	selenium, dissolved	silicon, dissolved	silver, dissolved	sodium, dissolved	strontium, dissolved	sulfur, dissolved	thallium, dissolved	tin, dissolved	titanium, dissolved	uranium, dissolved	vanadium, dissolved	zinc, dissolved
		RDL	0.0005	0.05	0.05	0.05	0.00001	0.05	0.0002	0.5	0.00001	0.0001	0.0003	0.00001	0.0005	0.001
		units	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Feb-2022	HEN1	1	0.00138	1.21	38.4	1.52	<0.000010	0.838	0.142	83.8	<0.000010	<0.00010	<0.00030	0.00166	<0.00050	0.0018
		3.5	0.00363	2.13	44.7	1.67	<0.000010	1.11	0.15	126	0.000014	<0.00010	<0.00030	0.00252	<0.00050	0.0041
		7	0.00676	3.33	55.8	2.01	<0.000010	1.4	0.166	192	0.000019	<0.00010	<0.00030	0.00382	<0.00050	0.0063
	HEN2	1	0.00156	1.23	38.5	1.48	<0.000010	0.858	0.14	84.2	<0.000010	0.00015	<0.00030	0.00164	<0.00050	0.0097
		3.5	0.00358	2.07	45.1	1.6	<0.000010	1.08	0.147	124	<0.000010	0.00012	<0.00030	0.0025	<0.00050	0.0081
		7	0.00604	2.71	45.6	2.1	<0.000010	1.25	0.158	169	0.000015	<0.00010	<0.00030	0.00316	<0.00050	0.0061
	HEN3	1	0.00136	1.19	38.4	1.46	<0.000010	0.823	0.139	81.8	<0.000010	<0.00010	<0.00030	0.0016	<0.00050	0.0039
		3.5	0.00263	1.83	44.1	1.58	<0.000010	0.977	0.144	109	<0.000010	<0.00010	<0.00030	0.00218	<0.00050	0.0043
		7	0.0064	2.94	41.6	2.21	<0.000010	1.34	0.168	182	0.000019	<0.00010	<0.00030	0.00362	<0.00050	0.0078
29-Jun-2022	HEN1	1	<0.00050	0.44	6.66	1.26	<0.000010	0.379	0.0639	13.9	<0.000010	<0.00010	<0.00030	0.000591	<0.00050	<0.0010
		3.5	0.00051	0.468	6.6	1.21	<0.000010	0.368	0.0676	14.6	<0.000010	<0.00010	<0.00030	0.000648	<0.00050	0.0012
		7	0.00085	0.683	12.1	1.26	<0.000010	0.42	0.0711	24.3	<0.000010	<0.00010	<0.00030	0.000855	<0.00050	0.0011
	HEN2	1	0.0005	0.492	6.53	1.21	<0.000010	0.413	0.0679	13.7	<0.000010	<0.00010	<0.00030	0.000647	<0.00050	0.0019
		3.5	0.00052	0.476	7.06	1.26	<0.000010	0.381	0.0667	15.3	<0.000010	<0.00010	<0.00030	0.000652	<0.00050	0.0013
		7	0.00094	0.699	13	1.26	<0.000010	0.423	0.0717	26	<0.000010	<0.00010	<0.00030	0.000846	<0.00050	0.003
	HEN3	1	0.00051	0.443	6.89	1.24	<0.000010	0.361	0.0649	14.7	<0.000010	<0.00010	<0.00030	0.000614	<0.00050	0.0025
		3.5	0.0005	0.448	7.4	1.4	<0.000010	0.373	0.0654	15.8	<0.000010	<0.00010	<0.00030	0.000618	<0.00050	0.0017
		7	<0.00050	0.451	6.81	1.25	<0.000010	0.363	0.0666	14.8	<0.000010	<0.00010	<0.00030	0.000629	<0.00050	0.0013
21-Oct-2022	HEN1	1	0.00092	0.895	36.4	1.61	<0.000010	0.664	0.134	69	<0.000010	<0.00010	<0.00030	0.00138	<0.00050	0.0014
		3.5	0.0013	1.05	38.8	1.61	<0.000010	0.72	0.134	75.9	<0.000010	<0.00010	<0.00030	0.00153	<0.00050	0.0017
		7	0.00356	2.02	42.1	1.49	<0.000010	1.06	0.151	144	0.000017	<0.00010	<0.00030	0.00277	<0.00050	0.0039
	HEN2	1	0.00085	0.833	32.9	1.44	<0.000010	0.618	0.124	61.2	<0.000010	<0.00010	<0.00030	0.00127	<0.00050	0.0015
		3.5	0.00123	0.993	36.1	1.55	<0.000010	0.696	0.126	70.8	<0.000010	<0.00010	<0.00030	0.00137	<0.00050	0.0022
		7	0.00378	2.1	37.7	1.52	<0.000010	1.14	0.153	147	0.000017	<0.00010	<0.00030	0.00277	<0.00050	0.0047
	HEN3	1	0.0009	0.838	35.7	1.58	<0.000010	0.637	0.129	66.1	<0.000010	<0.00010	<0.00030	0.00131	<0.00050	0.0017
		3.5	0.00106	1.01	38.9	1.6	<0.000010	0.712	0.133	72.1	<0.000010	<0.00010	<0.00030	0.00146	<0.00050	0.0015
		7	0.00392	2.11	39	1.6	<0.000010	1.15	0.16	154	0.000019	<0.00010	<0.00030	0.00289	<0.00050	0.005
BC water quality guidelines for the protection of freshwater aquatic life			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Bolded values represent exceedances of BC water quality guidelines.

Appendix 2. Total and Dissolved Selenium, Nitrate and Sulphate Profiles for HEN1 and HEN2.

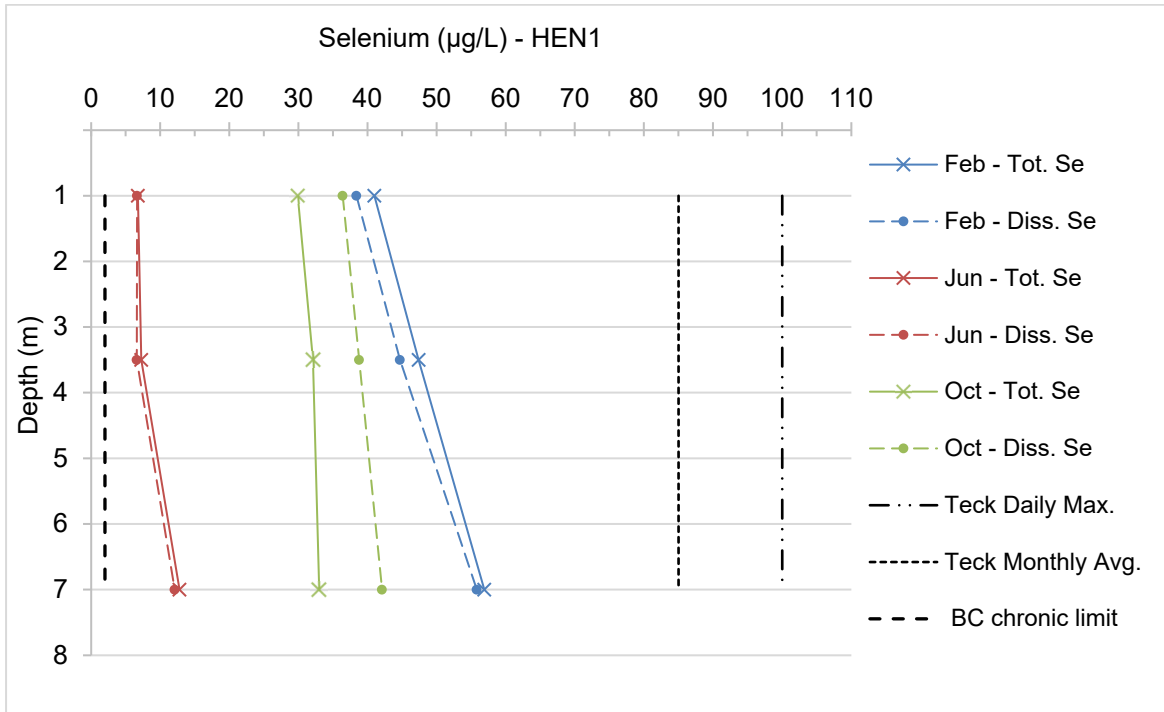


Figure 1. Total and dissolved selenium profiles collected at site HEN1.

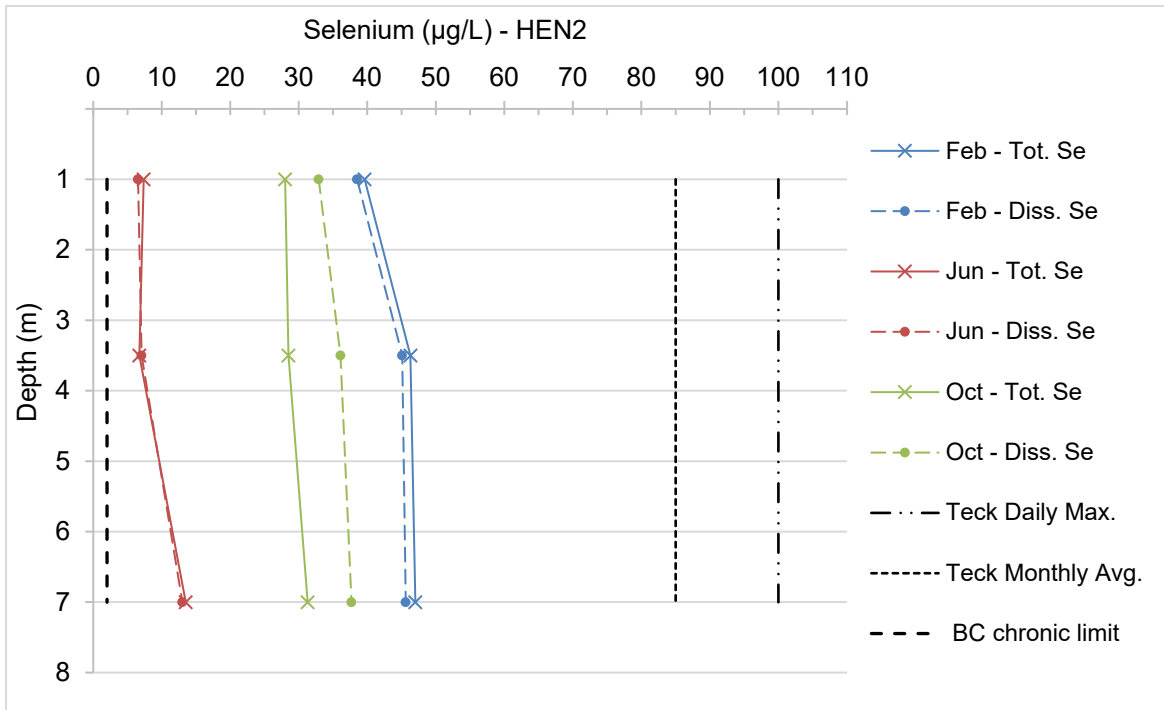


Figure 2. Total and dissolved selenium profiles collected at site HEN2.

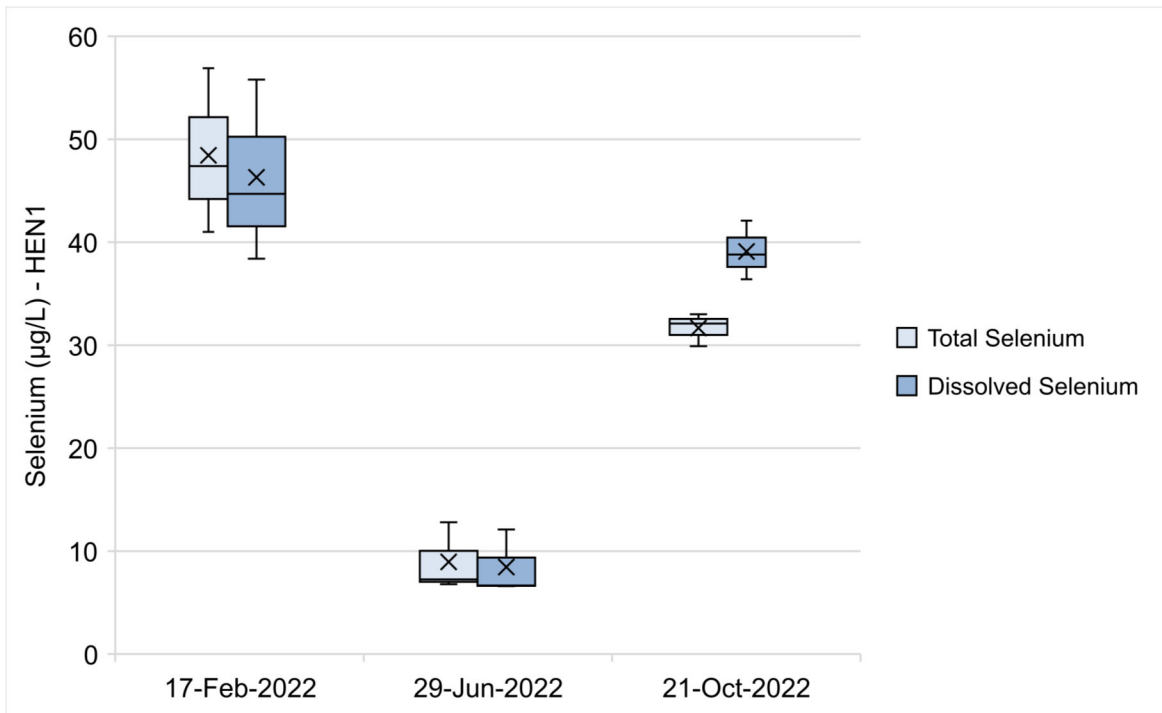


Figure 3. Seasonal variability of total and dissolved selenium measured at HEN1.

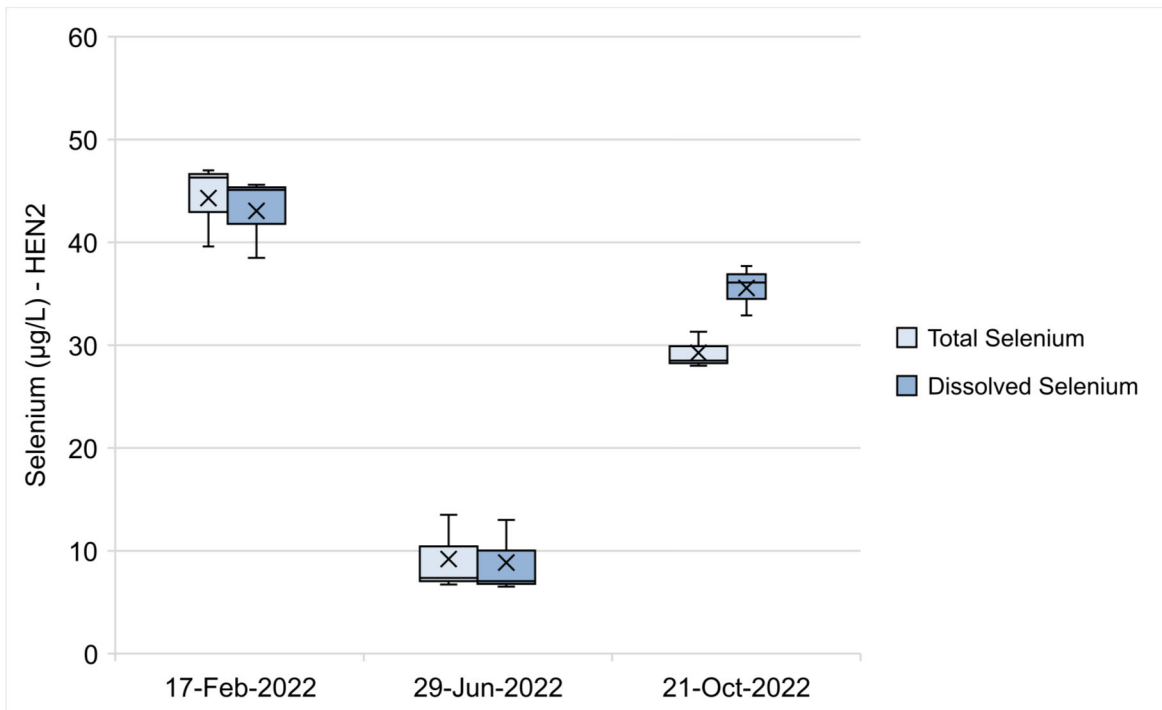


Figure 4. Seasonal variability of total and dissolved selenium measured at HEN2.

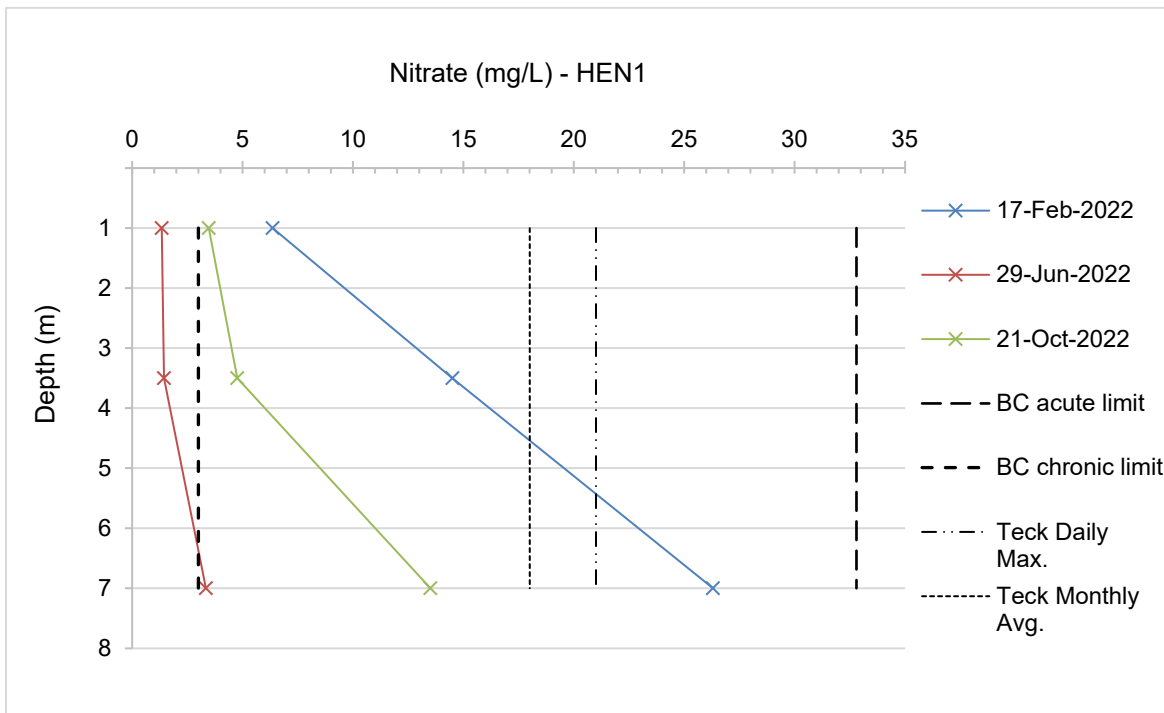


Figure 5. Nitrate profiles collected at site HEN1.

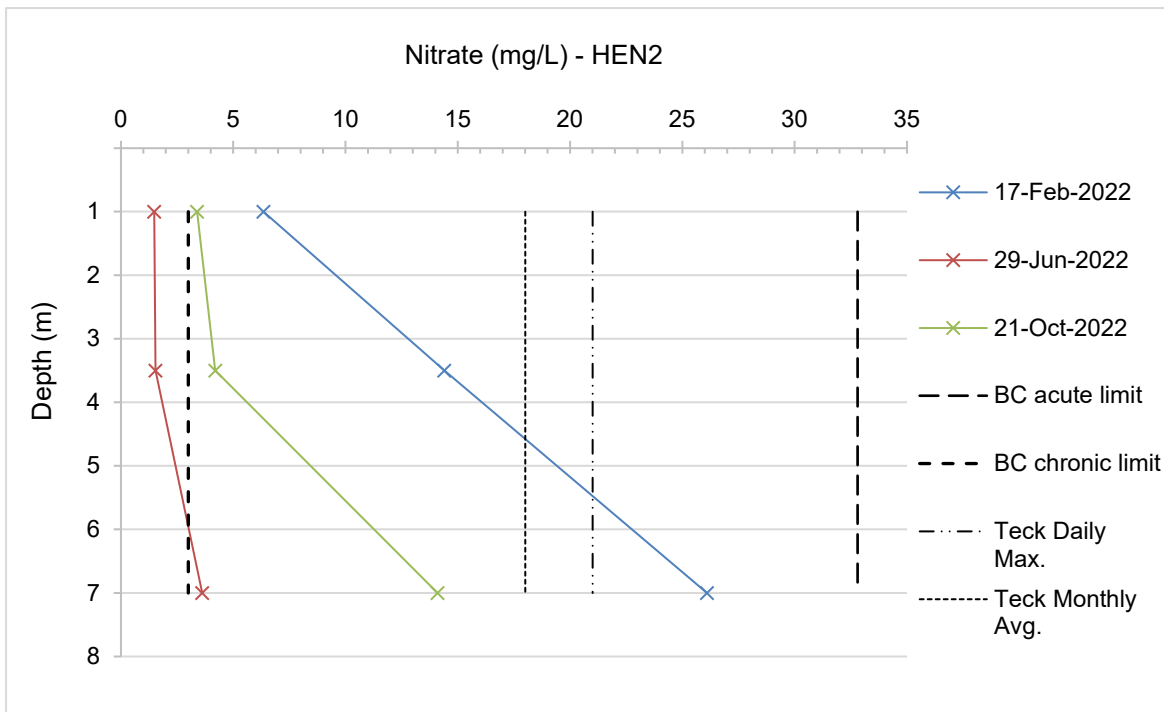


Figure 6. Nitrate profiles collected at site HEN2.

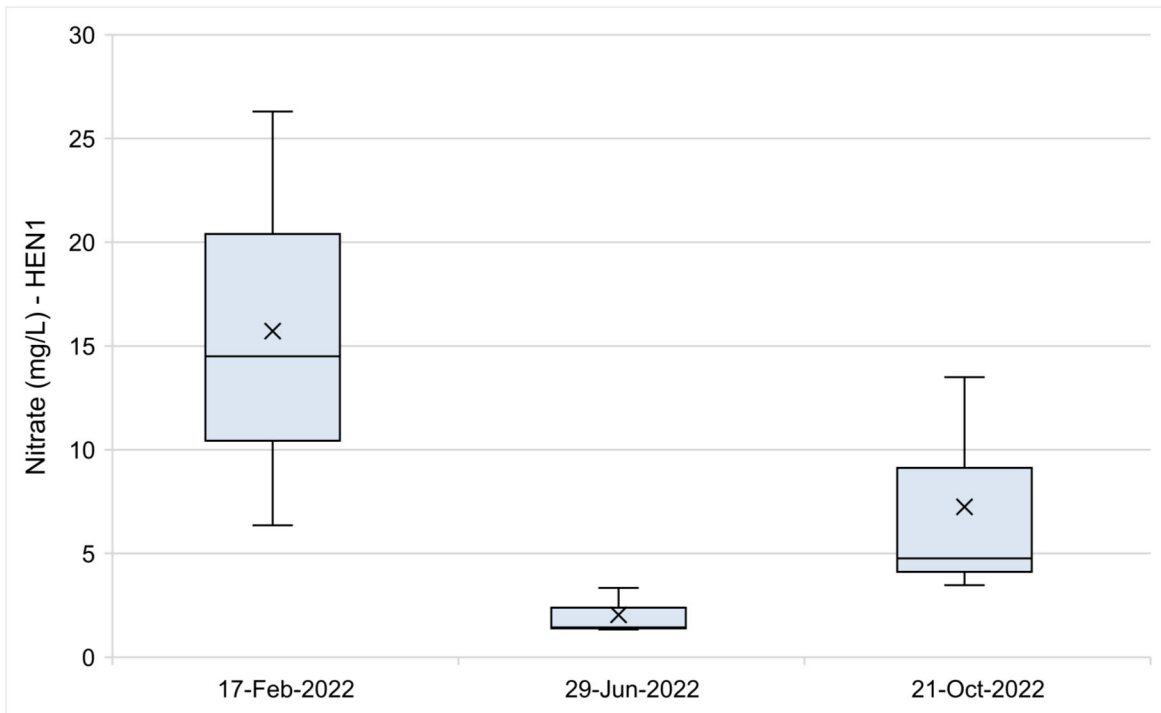


Figure 7. Seasonal variability of nitrate measured at HEN1.

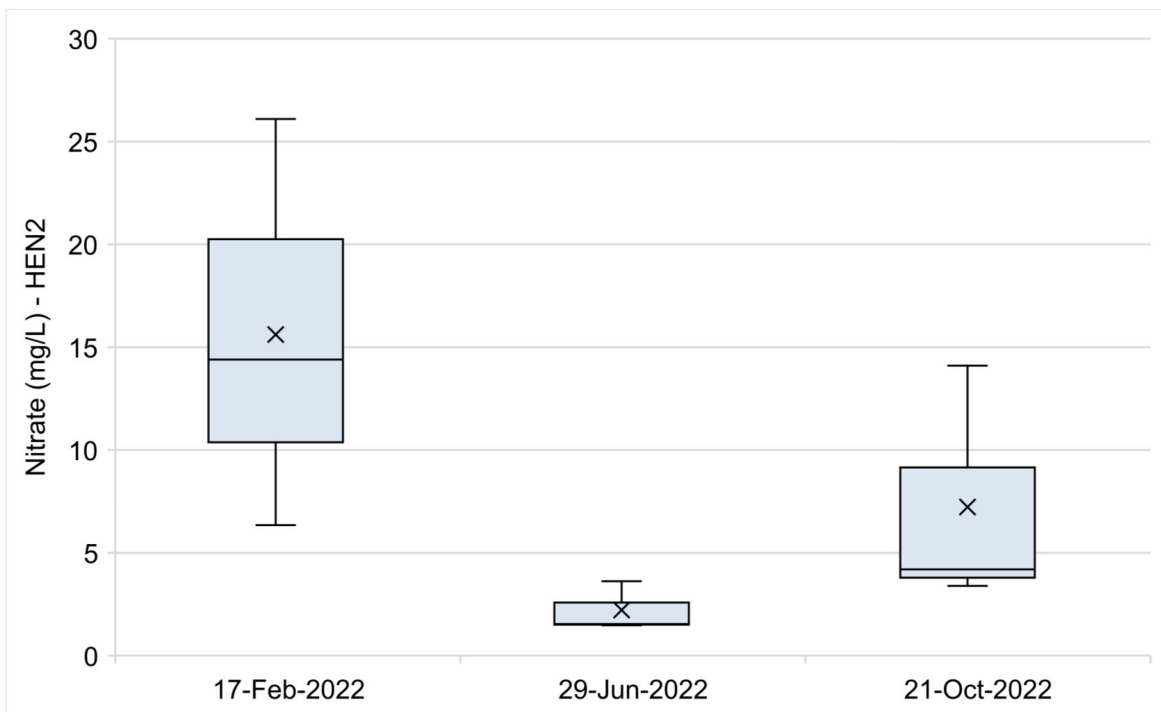


Figure 8. Seasonal variability of nitrate measured at HEN2.

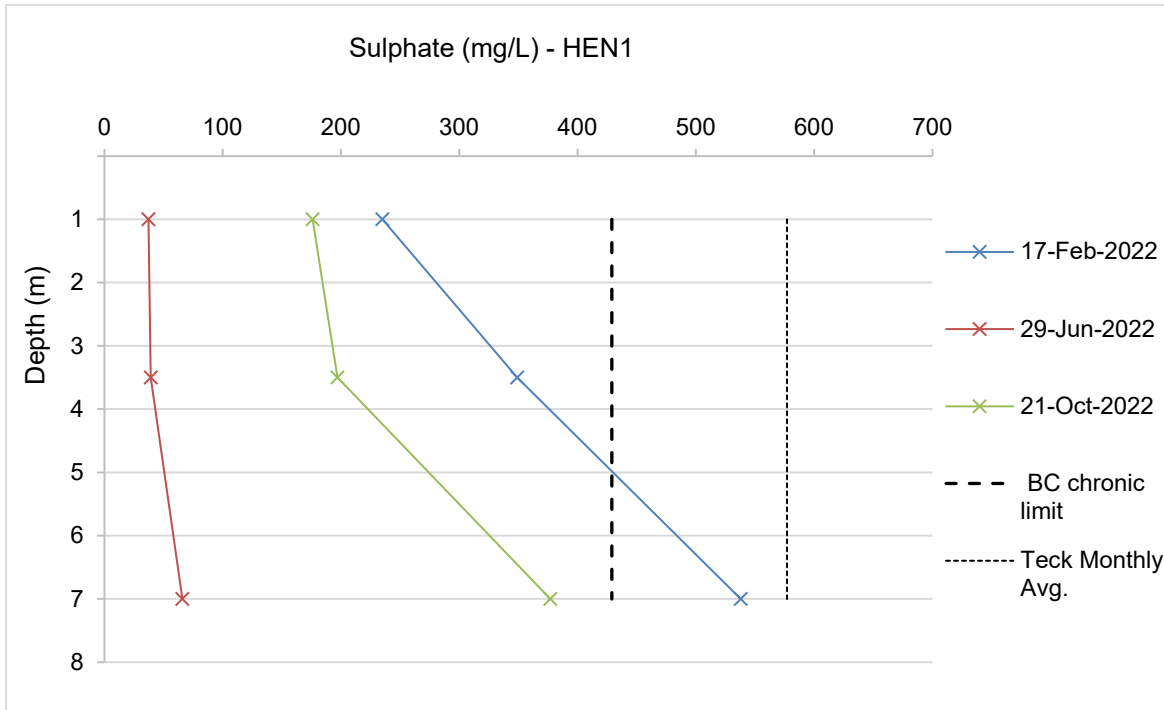


Figure 9. Sulphate profiles collected at site HEN1.

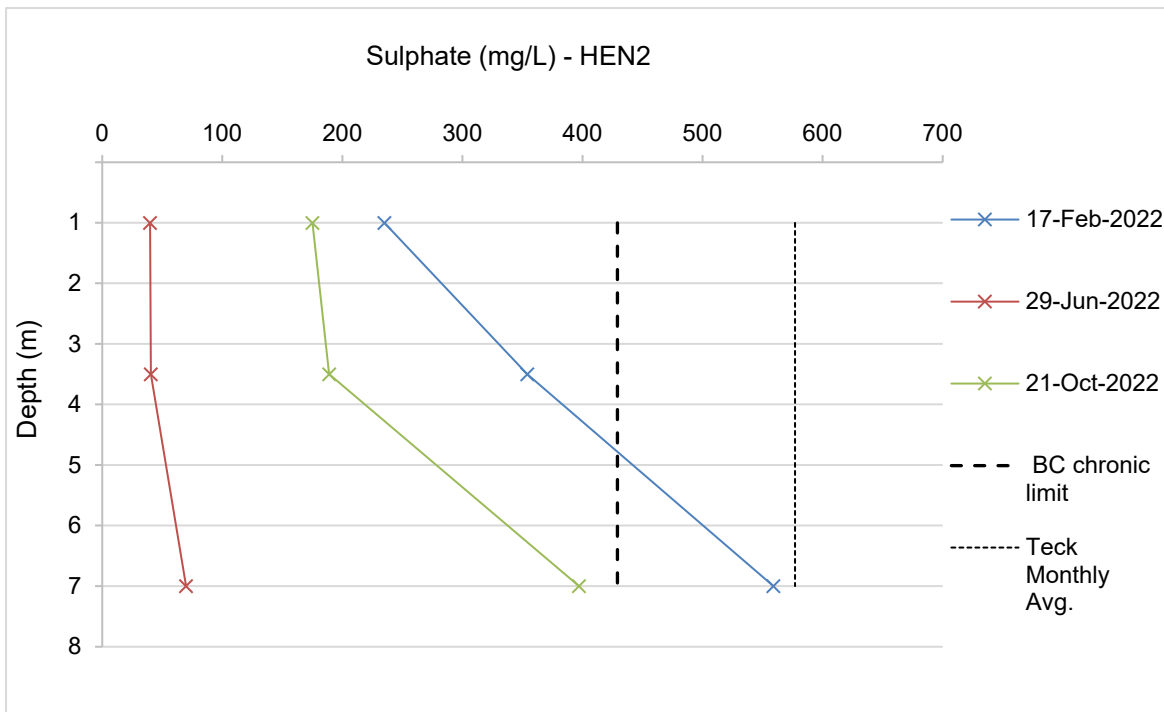


Figure 10. Sulphate profiles collected at site HEN2.

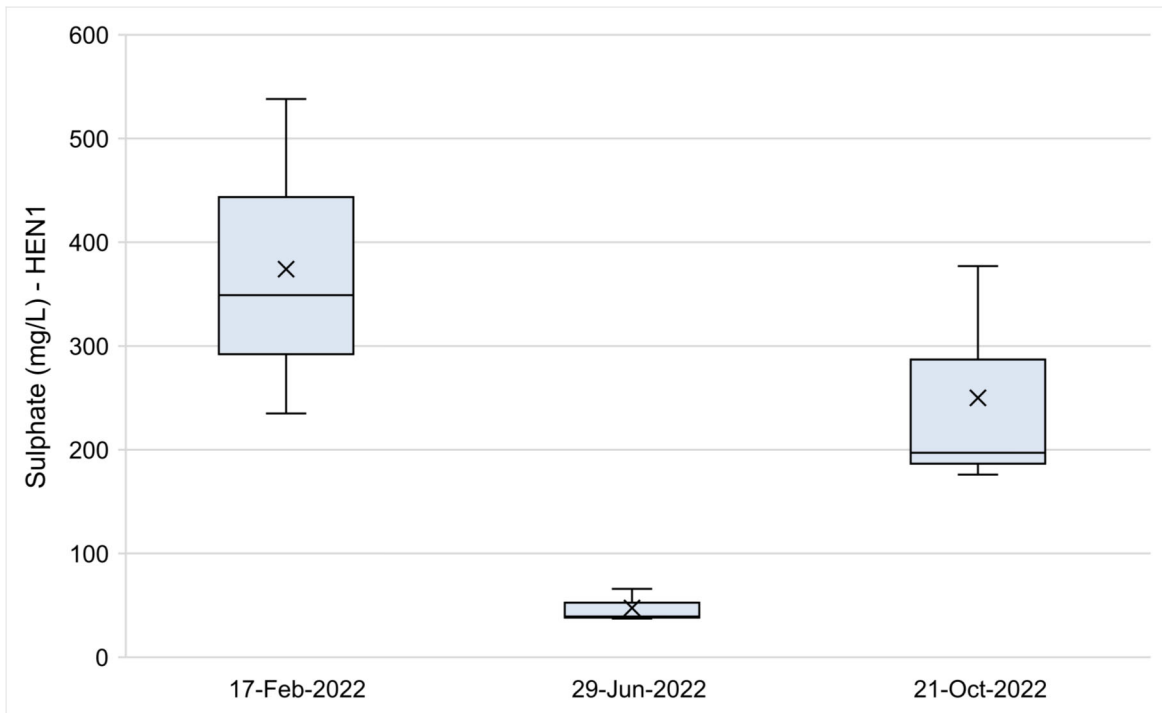


Figure 11. Seasonal variability of sulphate measured at HEN1.

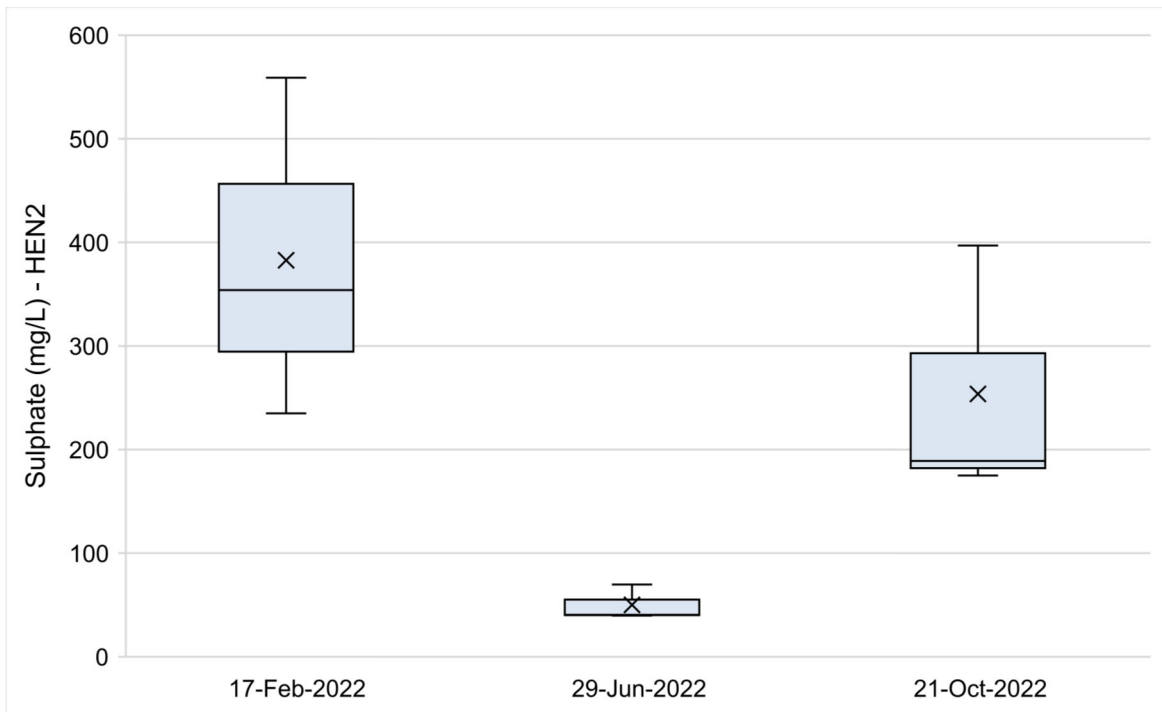


Figure 12. Seasonal variability of sulphate measured at HEN2.

Appendix 3. Water Quality Data Quality Assurance and Quality Control Review

QA/QC Methods

To maintain quality assurance and quality control (QA/QC) of the water quality grab samples, trip blanks, field blanks and duplicate samples were collected once per sampling event (i.e., one of each QA/QC sample during winter, summer and fall sampling events). Water quality field blanks were collected using laboratory issued de-ionized water. Field and trip blank values three times greater than the reportable detection limit (RDL) were considered an alert level (Province of BC 2013), indicating possible sample contamination during field collection, lab analysis, or from the sample containers used.

Duplicate water samples were collected to detect heterogeneity within the environment and to allow the precision of the measurement process to be estimated. Duplicate sampling involved collecting and field processing water from the same location at the same time. One of two approaches were used to analyse the duplicate results:

1. When at least one set of duplicate values were ≥ 5 times the RDL, the relative percent difference (RPD) of each set of duplicate results was calculated (Equation 1). RPD values $>20\%$ indicated a possible problem, whereas $>50\%$ indicated a definite problem, most likely due to either contamination or lack of sample representativeness (Province of BC 2013). Both ranges, 20 – 50% and $>50\%$ were distinguished separately.

Equation 1: Relative percent difference (RPD)

$$RPD = \left(\frac{\text{Duplicate 1} - \text{Duplicate 2}}{[(\text{Duplicate 1} + \text{Duplicate 2}) \div 2]} \right) \times 100$$

2. When at least one set of duplicate values were < 5 times the RDL, the difference between the sample and duplicate values was flagged if it exceeded twice the RDL (BC MOE 2013).

QA/QC Results

Quality assurance analyses indicated that field sampling and lab analysis procedures were accurate and precise (Appendix 3). Trip blank data review was conducted for 195 lab analysed samples, of these, 100% were contaminant free and analysed with precision. Field blank data review was conducted for 285 lab analysed samples, of these, 99.6% were contaminant free and/or analysed with precision. Of the 291 field duplicate sets reviewed, 97.9% had a RPD below 20% indicating a high degree of precision in data collection and lab procedures. Of the 2.1% of duplicate results flagged, 1.4% had a RPD within the 20 - 50% potential concern level, and 0.7% had a $> 50\%$ RPD indicating an issue. Four of the six flagged incidences of RPD $>20\%$ occurred in February, with none in June and two in October. Five parameters were flagged: total Kjeldahl nitrogen (TKN) twice, once in February and once in October, total lithium, total manganese and total uranium in February, and lastly, the ion balance in October. There were no trends observed in duplicate exceedances of the RPD. Sample variability due to the heterogeneity of the field environment was presumed to be the general cause for the duplicate differences.

Appendix 3. Water Quality Data Quality Assurance and Quality Control Review

Sample ID	Sample Type	Date	Time	Routine and Nutrients	conductivity	acidity (as CaCO3)	alkalinity, bicarbonate (as CaCO3)	alkalinity, bicarbonate (as HCO3)	alkalinity, carbonate (as CO3)	alkalinity, carbonate (as CaCO3)	alkalinity, hydroxide (as CaCO3)	alkalinity, hydroxide (as OH)	alkalinity, total (as CaCO3)	hardness (as CaCO3), dissolved	oxidation-reduction potential [ORP]	pH	solids, total dissolved [TDS]	solids, total suspended [TSS]	turbidity	Kjeldahl nitrogen, total [TKN]	ammonia, total (as N)
		RDL		RDL	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.50	0.10	0.10	10	1.0	0.10	0.050
		units			µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mV	pH units	mg/L	mg/L	NTU	mg/L	mg/L
FR_TRP_WS_2022-02-17_NP	trip blank	17-Feb-2022	16:00		<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	513	5.52	<10	<1.0	<0.10	<0.050	<0.0050
X times > than RDL					1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	n/a	n/a	1.0	1.0	1.0	1.0	1.0
FR_FLD_WS_2022-02-17_NP	field blank	17-Feb-2022	15:30		<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	493	5.48	<10	<1.0	<0.10	<0.050	<0.0050
X times > than RDL					1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	n/a	n/a	1.0	1.0	1.0	1.0	1.0
FR_DC1_WS_2022-02-17_NP	duplicate	17-Feb-2022	10:00		1460	10.3	258	314	<1.0	<1.0	<1.0	<1.0	258	704	270	7.71	1150	<1.0	0.43	0.483	0.263
FR_HEN2-7m_WS_2022-02-17_NP	grab	17-Feb-2022	13:10		1440	10.2	259	316	<1.0	<1.0	<1.0	<1.0	259	721	316	7.66	1100	1.4	0.47	<0.050	0.264
RPD or Diff (if <5x RDL)					1.38	0.98	0.39	0.63	0.00	0.00	0.00	0.00	0.39	2.39	15.70	0.65	4.44	0.40	0.04	162.48	0.38
FR_TRP_WS_2022-06-29_NP	trip blank	29-Jun-2022	16:30		<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	526	5.43	<10	<1.0	<0.10	<0.050	<0.0050
X times > than RDL					1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	n/a	n/a	1.0	1.0	1.0	1.0	1.0
FR_FLD_WS_2022-06-29_NP	field blank	29-Jun-2022	16:00		<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	559	5.12	<10	<1.0	<0.10	<0.050	<0.0050
X times > than RDL					1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	n/a	n/a	1.0	1.0	1.0	1.0	1.0
FR_DC1_WS_2022-06-29_NP	duplicate	29-Jun-2022	12:00		268	<2.0	127	155	<1.0	<1.0	<1.0	<1.0	127	143	326	7.63	183	1.9	2.30	0.208	<0.0050
FR_HENLAKE2-1m_WS_2022-06-29_NP	grab	29-Jun-2022	12:30		270	<2.0	126	154	<1.0	<1.0	<1.0	<1.0	126	146	344	7.65	182	3.2	2.94	0.319	<0.0050
RPD or Diff (if <5x RDL)					0.74	0.00	0.79	0.65	0.00	0.00	0.00	0.00	0.79	2.08	5.37	0.26	0.55	2.20	0.64	0.11	0.00
FR_TRP_WS_2022-10-20_NP	trip blank	21-Oct-2022	16:30		<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	482	5.38	<10	<1.0	<0.10	<0.050	<0.0050
X times > than RDL					1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	n/a	n/a	1.0	1.0	1.0	1.0	1.0
FR_FLD_WS_2022-10-20_NP	field blank	21-Oct-2022	16:00		<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	508	5.26	<10	<1.0	<0.10	<0.050	<0.0050
X times > than RDL					1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	n/a	n/a	1.0	1.0	1.0	1.0	1.0
FR_DC1_WS_2022-10-20_NP	duplicate	21-Oct-2022	14:55		582	<2.0	143	175	2.5	4.2	<1.0	<1.0	147	331	286	8.26	389	<1.0	0.18	0.258	<0.0050
FR_HENLAKE2-1m_WS_2022-10-20_NP	grab	21-Oct-2022	12:50		578	<2.0	136	166	3.6	6	<1.0	<1.0	142	312	307	8.31	373	<1.0	0.2	0.324	<0.0050
RPD or Diff (if <5x RDL)					0.69	0.00	5.02	5.28	2.00	3.70	0.00	0.00	3.46	5.91	7.08	0.60	4.20	0.00	10.53	22.68	0.00

● RPD ranging from 20-50%

● RPD > 50%

Appendix 3. Water Quality Data Quality Assurance and Quality Control Review

Sample ID	Sample Type	Date	bromide	chloride	fluoride	nitrate (as N)	nitrite (as N)	phosphate, ortho-, dissolved (as P)	phosphorus, total	Sulphate (as SO4)	carbon, dissolved organic [DOC]	carbon, total organic [TOC]	anion sum	cation sum	ion balance (APHA)	ion balance (cations/anions)	Total Metals	aluminum, total	antimony, total	arsenic, total	barium, total
			RDL units	0.050 mg/L	0.10 mg/L	0.020 mg/L	0.0050 mg/L	0.0010 mg/L	0.0010 mg/L	0.0020 mg/L	0.30 mg/L	0.50 mg/L	0.50 mg/L	0.10 meq/L	0.10 meq/L	0.010 %		0.010 %	0.0030 mg/L	0.00010 mg/L	0.00010 mg/L
FR_TRP_WS_2022-02-17_NP	trip blank	17-Feb-2022	<0.050	<0.10	<0.020	<0.0050	<0.0010	<0.0010	<0.0020	<0.30	-	<0.50	<0.10	<0.10	<0.010	100		<0.0030	<0.00010	<0.00010	<0.00010
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	-	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0
FR_FLD_WS_2022-02-17_NP	field blank	17-Feb-2022	<0.050	<0.10	<0.020	<0.0050	<0.0010	<0.0010	<0.0020	<0.30	<0.50	<0.50	<0.10	<0.10	<0.010	100		<0.0030	<0.00010	<0.00010	<0.00010
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0
FR_DC1_WS_2022-02-17_NP	duplicate	17-Feb-2022	<0.250	0.82	0.236	26.4	0.0364	<0.0010	0.0036	563	<0.50	<0.50	18.8	14.2	13.9	75.5		<0.0030	0.00016	0.00029	0.0353
FR_HEN2-7m_WS_2022-02-17_NP	grab	17-Feb-2022	<0.250	0.83	0.238	26.1	0.036	<0.0010	0.0053	559	<0.50	<0.50	18.7	14.6	12.3	78.1		0.0136	0.00015	0.00026	0.0348
RPD or Diff (if <5x RDL)			0.00	1.21	0.84	1.14	1.10	0.00	0.002	0.71	0.00	0.00	0.53	2.78	12.21	3.39		0.011	0.00001	0.00003	1.43
FR_TRP_WS_2022-06-29_NP	trip blank	29-Jun-2022	<0.050	<0.10	<0.020	<0.0050	<0.0010	<0.0010	<0.0020	<0.30	<0.50	<0.50	<0.10	<0.10	<0.010	100		<0.0030	<0.00010	<0.00010	<0.00010
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0
FR_FLD_WS_2022-06-29_NP	field blank	29-Jun-2022	<0.050	<0.10	<0.020	<0.0050	<0.0010	<0.0010	<0.0020	<0.30	<0.50	<0.50	<0.10	<0.10	<0.010	100		<0.0030	<0.00010	<0.00010	<0.00010
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0
FR_DC1_WS_2022-06-29_NP	duplicate	29-Jun-2022	<0.050	<0.10	0.152	1.45	<0.0010	0.0018	0.0064	39.4	1.33	1.62	3.47	2.89	9.12	83.3		0.0219	<0.00010	0.00013	0.0171
FR_HENLAKE2-1m_WS_2022-06-29_NP	grab	29-Jun-2022	<0.050	<0.10	0.150	1.48	<0.0010	0.0017	0.005	39.8	2.00	2.22	3.46	2.95	7.96	85.3		0.0239	<0.00010	<0.00010	0.0174
RPD or Diff (if <5x RDL)			0.00	0.00	1.32	2.05	0.00	0.00	0.001	1.01	0.67	0.60	0.29	2.05	13.58	2.37		8.73	0.00	0.00	1.74
FR_TRP_WS_2022-10-20_NP	trip blank	21-Oct-2022	<0.050	<0.10	<0.020	<0.0050	<0.0010	<0.0010	<0.0020	<0.30	<0.50	<0.50	<0.10	<0.10	<0.010	100		<0.0030	<0.00010	<0.00010	<0.00010
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0
FR_FLD_WS_2022-10-20_NP	field blank	21-Oct-2022	<0.050	<0.10	<0.020	<0.0050	<0.0010	<0.0010	<0.0020	<0.30	<0.50	<0.50	<0.10	<0.10	<0.010	100		<0.0030	<0.00010	<0.00010	<0.00010
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0
FR_DC1_WS_2022-10-20_NP	duplicate	21-Oct-2022	<0.050	0.27	0.253	3.38	0.0032	<0.0010	<0.0020	175	<0.50	<0.50	6.84	6.66	1.33	97.4		<0.0030	<0.00010	0.00013	0.0325
FR_HENLAKE2-1m_WS_2022-10-20_NP	grab	21-Oct-2022	<0.050	0.28	0.253	3.39	0.0033	<0.0010	<0.0020	175	<0.50	<0.50	6.74	6.27	3.61	93		0.0031	<0.00010	0.00011	0.0316
RPD or Diff (if <5x RDL)			0.00	0.22	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	1.47	6.03	92.3	4.62		0.00	0.00	0.00	2.81

● RPD ranging from 20-50%

● RPD > 50%

Appendix 3. Water Quality Data Quality Assurance and Quality Control Review

Sample ID	Sample Type	Date	beryllium, total	bismuth, total	boron, total	cadmium, total	calcium, total	chromium, total	cobalt, total	copper, total	iron, total	lead, total	lithium, total	magnesium, total	manganese, total	mercury, total	molybdenum, total	nickel, total	potassium, total	selenium, total	silicon, total	
			RDL	0.020	0.000050	0.010	0.0050	0.050	0.00010	0.10	0.00050	0.010	0.000050	0.0010	0.0050	0.00010	0.0000050	0.000050	0.00050	0.050	0.050	0.10
			units	µg/L	mg/L	µg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L
FR_TRP_WS_2022-02-17_NP	trip blank	17-Feb-2022	<0.020	<0.000050	<0.010	<0.0050	<0.050	<0.00010	<0.10	<0.00050	<0.010	<0.000050	<0.0010	<0.0050	<0.00010	<0.000050	<0.000050	<0.00050	<0.050	<0.050	<0.10	
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
FR_FLD_WS_2022-02-17_NP	field blank	17-Feb-2022	<0.020	<0.000050	<0.010	<0.0050	<0.050	0.00034	<0.10	<0.00050	<0.010	<0.000050	<0.0010	<0.0050	<0.00010	<0.000050	<0.000050	<0.00050	<0.050	<0.050	<0.10	
X times > than RDL			1.0	1.0	1.0	1.0	1.0	3.40	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
FR_DC1_WS_2022-02-17_NP	duplicate	17-Feb-2022	<0.020	<0.000050	0.026	0.107	200	<0.00010	0.63	<0.00050	0.077	<0.000050	0.0520	107	0.186	<0.000050	0.00129	0.00826	3.34	51.5	2.45	
FR_HEN2-7m_WS_2022-02-17_NP	grab	17-Feb-2022	<0.020	<0.000050	0.022	0.0957	169	0.00026	0.52	<0.00050	0.083	<0.000050	0.0425	89.6	0.151	<0.000050	0.00108	0.00685	2.79	47.0	2.26	
RPD or Diff (if <5x RDL)			0.00	0.00	0.00	11.15	16.80	0.0002	19.13	0.00	7.50	0.00	20.11	17.70	20.77	0.00	17.72	18.66	17.94	9.14	8.07	
FR_TRP_WS_2022-06-29_NP	trip blank	29-Jun-2022	<0.020	<0.000050	<0.010	<0.0050	<0.050	<0.00010	<0.10	<0.00050	<0.010	<0.000050	<0.0010	<0.0050	<0.00010	<0.0000050	<0.000050	<0.00050	<0.050	<0.050	<0.10	
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
FR_FLD_WS_2022-06-29_NP	field blank	29-Jun-2022	<0.020	<0.000050	<0.010	<0.0050	<0.050	<0.00010	<0.10	<0.00050	<0.010	<0.000050	<0.0010	<0.0050	<0.00010	<0.0000050	<0.000050	<0.00050	<0.050	<0.050	<0.10	
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
FR_DC1_WS_2022-06-29_NP	duplicate	29-Jun-2022	<0.020	<0.000050	<0.010	0.0192	39.5	0.00016	<0.10	<0.00050	0.023	0.000069	0.0045	12.7	0.00305	<0.0000050	0.000556	0.00063	0.424	6.63	1.37	
FR_HENLAKE2-1m_WS_2022-06-29_NP	grab	29-Jun-2022	<0.020	<0.000050	<0.010	0.0123	39.3	0.00014	<0.10	<0.00050	0.021	<0.000050	0.0045	12.4	0.00284	<0.0000050	0.000538	0.0006	0.427	7.36	1.39	
RPD or Diff (if <5x RDL)			0.00	0.00	0.00	0.01	0.51	0.0000	0.00	0.00	0.00	0.00	0.00	2.39	7.13	0.00	3.29	0.00	0.71	10.44	1.45	
FR_TRP_WS_2022-10-20_NP	trip blank	21-Oct-2022	<0.020	<0.000050	<0.010	<0.0050	<0.050	<0.00010	<0.10	<0.00050	<0.010	<0.000050	<0.0010	<0.0050	<0.00010	<0.0000050	<0.000050	<0.00050	<0.050	<0.050	<0.10	
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
FR_FLD_WS_2022-10-20_NP	field blank	21-Oct-2022	<0.020	<0.000050	<0.010	<0.0050	<0.050	<0.00010	<0.10	<0.00050	<0.010	<0.000050	<0.0010	<0.0050	<0.00010	<0.0000050	<0.000050	<0.00050	<0.050	<0.050	<0.10	
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
FR_DC1_WS_2022-10-20_NP	duplicate	21-Oct-2022	<0.020	<0.000050	<0.010	0.0484	81.7	0.00015	<0.10	<0.00050	<0.010	0.000171	0.0108	36.6	0.00296	<0.0000050	0.000913	0.00097	0.841	29.5	1.59	
FR_HENLAKE2-1m_WS_2022-10-20_NP	grab	21-Oct-2022	<0.020	<0.000050	<0.010	0.0258	80.1	0.00025	<0.10	<0.00050	<0.010	<0.000050	0.0108	35.2	0.00261	<0.0000050	0.000984	0.00105	0.812	28.0	1.55	
RPD or Diff (if <5x RDL)			0.00	0.00	0.00	0.02	1.98	0.00	0.00	0.00	0.00	0.00	0.00	3.90	12.57	0.00	7.49	0.00	3.51	5.22	2.55	

● RPD ranging from 20-50%

● RPD > 50%

Appendix 3. Water Quality Data Quality Assurance and Quality Control Review

Sample ID	Sample Type	Date	silver, total	sodium, total	strontium, total	sulfur, total	thallium, total	tin, total	titanium, total	uranium, total	vanadium, total	zinc, total	Dissolved Metals	aluminum, dissolved	antimony, dissolved	arsenic, dissolved	barium, dissolved	beryllium, dissolved	bismuth, dissolved	boron, dissolved	cadmium, dissolved		
			RDL	0.000010	0.050	0.00020	0.50	0.000010	0.00010	0.00030	0.000010	0.00050		0.0030	0.0010	0.00010	0.00010	0.00010	0.00010	0.020	0.000050	0.010	0.0050
			units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	µg/L
FR_TRP_WS_2022-02-17_NP	trip blank	17-Feb-2022	<0.000010	<0.050	<0.00020	<0.50	<0.000010	<0.00010	<0.00030	<0.000010	<0.00050	<0.0030											
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0											
FR_FLD_WS_2022-02-17_NP	field blank	17-Feb-2022	<0.000010	<0.050	<0.00020	<0.50	<0.000010	<0.00010	<0.00030	<0.000010	<0.00050	<0.0030		<0.0010	<0.00010	<0.00010	<0.00010	<0.020	<0.000050	<0.010	<0.0050		
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
FR_DC1_WS_2022-02-17_NP	duplicate	17-Feb-2022	<0.000010	1.46	0.188	199	0.000022	<0.00010	<0.00030	0.00459	<0.00050	0.0102		<0.0010	0.00012	<0.00010	0.0310	<0.020	<0.000050	0.019	0.0639		
FR_HEN2-7m_WS_2022-02-17_NP	grab	17-Feb-2022	<0.000010	1.31	0.17	168	0.000018	<0.00010	<0.00030	0.00362	<0.00050	0.0072		<0.0010	0.00012	<0.00010	0.0322	<0.020	<0.000050	0.02	0.0548		
RPD or Diff (if <5x RDL)			0.00	10.83	10.06	16.89	0.000004	0.00	0.00	23.63	0.00	0.003		0.00	0.00	0.00	3.80	0.00	0.00	0.001	15.33		
FR_TRP_WS_2022-06-29_NP	trip blank	29-Jun-2022	<0.000010	<0.050	<0.00020	<0.50	<0.000010	<0.00010	<0.00030	<0.000010	<0.00050	<0.0030											
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0											
FR_FLD_WS_2022-06-29_NP	field blank	29-Jun-2022	<0.000010	<0.050	<0.00020	<0.50	<0.000010	<0.00010	<0.00030	<0.000010	<0.00050	<0.0030		<0.0010	<0.00010	<0.00010	<0.00010	<0.020	<0.000050	<0.010	<0.0050		
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
FR_DC1_WS_2022-06-29_NP	duplicate	29-Jun-2022	<0.000010	0.370	0.0684	16.1	<0.000010	<0.00010	0.00032	0.000616	<0.00050	<0.0030		0.0033	<0.00010	<0.00010	0.0166	<0.020	<0.000050	<0.010	0.0104		
FR_HENLAKE2-1m_WS_2022-06-29_NP	grab	29-Jun-2022	<0.000010	0.369	0.0671	14.8	<0.000010	<0.00010	<0.00060	0.000611	<0.00050	<0.0030		0.003	<0.00010	<0.00010	0.0168	<0.020	<0.000050	<0.010	0.015		
RPD or Diff (if <5x RDL)			0.00	0.27	1.92	8.41	0.00	0.00	0.00	0.81	0.00	0.00		0.00	0.00	0.00	1.20	0.00	0.00	0.00	0.005		
FR_TRP_WS_2022-10-20_NP	trip blank	21-Oct-2022	<0.000010	<0.050	<0.00020	<0.50	<0.000010	<0.00010	<0.00030	<0.000010	<0.00050	<0.0030											
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0											
FR_FLD_WS_2022-10-20_NP	field blank	21-Oct-2022	<0.000010	<0.050	<0.00020	<0.50	<0.000010	<0.00010	<0.00030	<0.000010	<0.00050	<0.0030		<0.0010	<0.00010	<0.00010	<0.00010	<0.020	<0.000050	<0.010	<0.0050		
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
FR_DC1_WS_2022-10-20_NP	duplicate	21-Oct-2022	<0.000010	0.699	0.137	68.5	<0.000010	<0.00010	<0.00030	0.00144	<0.00050	<0.0030		<0.0010	<0.00010	<0.00010	0.0326	<0.020	<0.000050	<0.010	0.0235		
FR_HENLAKE2-1m_WS_2022-10-20_NP	grab	21-Oct-2022	<0.000010	0.67	0.134	65.4	<0.000010	<0.00010	<0.00030	0.00141	<0.00050	<0.0030		<0.0010	<0.00010	<0.00010	0.0297	<0.020	<0.000050	<0.010	0.0287		
RPD or Diff (if <5x RDL)			0.00	4.24	2.21	4.63	0.00	0.00	0.00	2.11	0.00	0.00		0.00	0.00	0.00	9.31	0.00	0.00	0.00	0.005		

● RPD ranging from 20-50%

● RPD > 50%

Appendix 3. Water Quality Data Quality Assurance and Quality Control Review

Sample ID	Sample Type	Date	calcium, dissolved	chromium, dissolved	cobalt, dissolved	copper, dissolved	iron, dissolved	lead, dissolved	lithium, dissolved	magnesium, dissolved	manganese, dissolved	mercury, dissolved	molybdenum, dissolved	nickel, dissolved	potassium, dissolved	selenium, dissolved	silicon, dissolved	silver, dissolved	sodium, dissolved	strontium, dissolved
			RDL units	0.050 mg/L	0.00010 mg/L	0.10 µg/L	0.00020 mg/L	0.010 mg/L	0.000050 mg/L	0.0010 mg/L	0.0050 mg/L	0.00010 mg/L	0.000050 mg/L	0.000050 mg/L	0.00050 mg/L	0.050 mg/L	0.050 µg/L	0.050 mg/L	0.000010 mg/L	0.050 mg/L
FR_TRP_WS_202 2-02-17_NP	trip blank	17-Feb- 2022	<0.050							<0.0050					<0.050				<0.050	
X times > than RDL			1.0							1.0					1.0				1.0	
FR_FLD_WS_202 2-02-17_NP	field blank	17-Feb- 2022	<0.050	<0.00010	<0.00010	<0.00020	<0.010	<0.000050	<0.0010	<0.0050	<0.00010	<0.0000050	<0.000050	<0.00050	<0.050	<0.050	<0.050	<0.000010	<0.050	<0.00020
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
FR_DC1_WS_202 2-02-17_NP	duplicate	17-Feb- 2022	154	<0.00010	0.00044	<0.00020	0.024	<0.000050	0.0395	77.6	0.133	<0.0000050	0.000972	0.00578	2.62	41.5	2.01	<0.000010	1.20	0.152
FR_HEN2- 7m_WS_2022-02- 17_NP	grab	17-Feb- 2022	154	<0.00010	0.00046	<0.00020	0.025	<0.000050	0.041	81.8	0.138	<0.0000050	0.00102	0.00604	2.71	45.6	2.1	<0.000010	1.25	0.158
RPD or Diff (if <5x RDL)			0.00	0.00	0.00002	0.00	0.001	0.00	3.73	5.27	3.69	0.00	4.82	4.40	3.38	9.41	4.38	0.00	4.08	3.87
FR_TRP_WS_202 2-06-29_NP	trip blank	29-Jun- 2022	<0.050							<0.0050					<0.050				<0.050	
X times > than RDL			1.0							1.0					1.0				1.0	
FR_FLD_WS_202 2-06-29_NP	field blank	29-Jun- 2022	<0.050	<0.00010	<0.10	<0.00020	<0.010	<0.000050	<0.0010	<0.0050	<0.00010	<0.0000050	<0.000050	<0.00050	<0.050	<0.050	<0.050	<0.000010	<0.050	<0.00020
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
FR_DC1_WS_202 2-06-29_NP	duplicate	29-Jun- 2022	37.5	<0.00010	<0.10	0.00021	<0.010	<0.000050	0.0046	12.0	0.00159	<0.0000050	0.000561	0.00056	0.477	7.08	1.22	<0.000010	0.388	0.0673
FR_HENLAKE2- 1m_WS_2022-06- 29_NP	grab	29-Jun- 2022	38.2	<0.00010	<0.10	<0.00020	<0.010	<0.000050	0.0047	12.3	0.00158	<0.0000050	0.000538	0.0005	0.492	6.53	1.21	<0.000010	0.413	0.0679
RPD or Diff (if <5x RDL)			1.85	0.00	0.00	0.00	0.00	0.00	0.0001	2.47	0.63	0.00	4.19	0.0001	3.10	8.08	0.82	0.00	6.24	0.89
FR_TRP_WS_202 2-10-20_NP	trip blank	21-Oct- 2022	<0.050							<0.0050					<0.050				<0.050	
X times > than RDL			1.0							1.0					1.0				1.0	
FR_FLD_WS_202 2-10-20_NP	field blank	21-Oct- 2022	<0.050	<0.00010	<0.10	<0.00020	<0.010	<0.000050	<0.0010	<0.0050	<0.00010	<0.0000050	<0.000050	<0.00050	<0.050	<0.050	<0.050	<0.000010	<0.050	<0.00020
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
FR_DC1_WS_202 2-10-20_NP	duplicate	21-Oct- 2022	79.6	<0.00010	<0.10	<0.00020	<0.010	<0.000050	0.0113	32.1	0.00236	<0.0000050	0.000933	0.00092	0.874	37.3	1.63	<0.000010	0.668	0.134
FR_HENLAKE2- 1m_WS_2022-10- 20_NP	grab	21-Oct- 2022	75	0.00011	<0.10	<0.00020	<0.010	<0.000050	0.0106	30.2	0.00221	<0.0000050	0.000864	0.00085	0.833	32.9	1.44	<0.000010	0.618	0.124
RPD or Diff (if <5x RDL)			5.95	0.00	0.00	0.00	0.00	0.00	6.39	6.10	6.56	0.00	7.68	0.0001	4.80	12.54	12.38	0.00	7.78	7.75

● RPD ranging from 20-50%

● RPD > 50%

Appendix 3. Water Quality Data Quality Assurance and Quality Control Review

Sample ID	Sample Type	Date	sulfur, dissolved	thallium, dissolved	tin, dissolved	titanium, dissolved	uranium, dissolved	vanadium, dissolved	zinc, dissolved
		RDL units	0.50 mg/L	0.000010 mg/L	0.00010 mg/L	0.00030 mg/L	0.000010 mg/L	0.00050 mg/L	0.0010 mg/L
FR_TRP_WS_202 2-02-17_NP	trip blank	17-Feb- 2022							
X times > than RDL									
FR_FLD_WS_202 2-02-17_NP	field blank	17-Feb- 2022	<0.50	<0.000010	<0.00010	<0.00030	<0.000010	<0.00050	<0.0010
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0
FR_DC1_WS_202 2-02-17_NP	duplicate	17-Feb- 2022	160	0.000015	<0.00010	<0.00030	0.00305	<0.00050	0.0061
FR_HEN2- 7m_WS_2022-02- 17_NP	grab	17-Feb- 2022	169	0.000015	<0.00010	<0.00030	0.00316	<0.00050	0.0061
RPD or Diff (if <5x RDL)			5.47	0.00	0.00	0.00	3.54	0.00	0.00
FR_TRP_WS_202 2-06-29_NP	trip blank	29-Jun- 2022							
X times > than RDL									
FR_FLD_WS_202 2-06-29_NP	field blank	29-Jun- 2022	<0.50	<0.000010	<0.00010	<0.00030	<0.000010	<0.00050	<0.0010
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0
FR_DC1_WS_202 2-06-29_NP	duplicate	29-Jun- 2022	14.8	<0.000010	<0.00010	<0.00030	0.000632	<0.00050	0.0019
FR_HENLAKE2- 1m_WS_2022-06- 29_NP	grab	29-Jun- 2022	13.7	<0.000010	<0.00010	<0.00030	0.000647	<0.00050	0.0019
RPD or Diff (if <5x RDL)			7.72	0.00	0.00	0.00	2.35	0.00	0.00
FR_TRP_WS_202 2-10-20_NP	trip blank	21-Oct- 2022							
X times > than RDL									
FR_FLD_WS_202 2-10-20_NP	field blank	21-Oct- 2022	<0.50	<0.000010	<0.00010	<0.00030	<0.000010	<0.00050	<0.0010
X times > than RDL			1.0	1.0	1.0	1.0	1.0	1.0	1.0
FR_DC1_WS_202 2-10-20_NP	duplicate	21-Oct- 2022	68.7	<0.000010	<0.00010	<0.00030	0.00138	<0.00050	0.0012
FR_HENLAKE2- 1m_WS_2022-10- 20_NP	grab	21-Oct- 2022	61.2	<0.000010	<0.00010	<0.00030	0.00127	<0.00050	0.0015
RPD or Diff (if <5x RDL)			11.55	0.00	0.00	0.00	8.30	0.00	0.00

● RPD ranging from 20-50%

● RPD > 50%